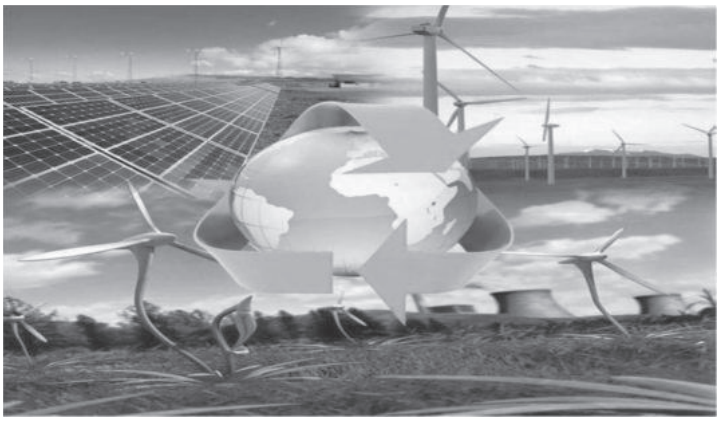
ÇEKİM ENERJİ YATIRIM ÜRETİM VE TİCARET A.Ş.



BOZÜYÜK WIND POWER PLANT (90MWe/90 MWm) PROJECT

FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT

BILECIK PROVINCE, BOZÜYÜK SUB- PROVINCE ÇAMYAYLA, MURATDERE, DELIELMACIK, ERIKLI VILLAGES

EN- ÇEV ENERJİ ÇEVRE YATIRIMLARI VE DANIŞMALIĞI HARİTACILIK IMAR İNŞAAT A.Ş

EN-ÇEV
Enerji Çevre Yatırımları ve Danışmanlığı
Haritacılık İmar İnşaat A.Ş.
Mehatma Gandi Caddesi No : 92/ 2-3-4-6-7 06580 G.O.P. ANKARA
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BILECIK JUNE 2018

PROJECT OWNER'S NAME	**ÇEKİM ENERJİ YATIRIM ÜRETİM VE TİCARET A.Ş.**
ADDRESS	**Mustafa Kemal Mahallesi Dumlupınar Bulvarı B Blok Apt. No. 274/ 7/ 67 Çankaya Ankara**
TELEPHONE, FACSIMILE NR.:	**Telephone: 0 312 492 03 06 – 0312 939 82 00** **Facsimile : 0 312 490 04 51**
PROJECT NAME:	**BÖZÜYÜK WIND POWER PLANT (90 MWe/ 90MWm) PROJECT FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT**
PROJECT COST:	**225.000.000 TL**
FULL ADDRESS OF THE PLACE SELECTED FOR THE PROJECT **(PROVINCE, SUB- PROVINCE, LOCATION)**	**PROVINCE : BILECIK** **SUB- PROVINCE : BOZÜYÜK** **LOCATION: ÇAMYAYLA,MURATDERE, DELIELMACIK, ERIKLI**

COORDINATES OF THE PLACE SELECTED FOR THE PROJECT

Coordinate sequence: Towards right Upwards **Datum** : ED-50
Type : UTM **D.O.M.** : 27
Scaling factor : 6 degrees **Zone** : 35

PLANT AREA

PLANT AREA	TOWARDS RIGHT (Y)	UPWARDS (X)
1	753373.979	4425761.726
2	753557.310	4425712.602
3	753726.332	4425719.654
4	753948.292	4425660.180
5	754135.178	4425473.294
6	754203.584	4425218.003
7	754135.178	4424962.711
8	753948.292	4424775.825
9	753826.576	4424743.211
10	753721.024	4424664.109
11	753396.966	4424339.896
12	753230.292	4424173.222
13	753076.172	4424131.926
14	752768.321	4423840.046
15	752531.292	4423603.017
16	752126.001	4423494.420
17	751878.553	4423560.723
18	749788.257	4422963.722
19	749383.235	4422855.196

20	748957.363	4422969.309
21	748436.737	4423202.908
22	748330.918	4423231.262
23	747905.557	4422664.014
24	747880.399	4422570.022
25	747801.123	4422490.702
26	747307.527	4421585.967
27	747276.647	4421470.593
28	747245.081	4421439.010
29	747161.766	4420379.615
30	747188.635	4420279.448
31	747145.163	4420117.031
32	746772.472	4419086.744
33	746735.641	4418949.139
34	746665.053	4418878.513
35	746237.939	4417921.209
36	746301.309	4417874.495
37	746419.496	4417842.827
38	746944.263	4417487.215
39	747107.797	4417636.355
40	747250.619	4417779.177
41	747530.028	4417854.044
42	747809.438	4417779.177
43	748013.980	4417574.635
44	748088.847	4417295.225
45	748013.980	4417015.816
46	747848.340	4416850.176
47	747551.282	4416639.589
48	747546.620	4416562.623
49	747462.435	4416248.440
50	747047.174	4415491.248
51	746722.115	4415166.190
52	746241.823	4415037.496
53	745807.538	4415153.862
54	745532.546	4415296.785
55	745278.267	4415551.045
56	745200.218	4415842.284
57	744964.213	4416508.382
58	744855.786	4416586.313
59	744783.927	4416569.023
60	744610.001	4416522.420
61	744493.640	4416553.598
62	743881.164	4416457.871
63	743719.001	4416414.420
64	743535.620	4416463.556
65	743276.699	4416544.041
66	743229.744	4416556.608
67	742904.023	4416597.955
68	742810.424	4416623.035
69	742677.605	4416633.998
70	741828.931	4416030.036
71	741816.689	4415984.296
72	741650.086	4415817.602
73	741532.192	4415785.978
74	740409.804	4415197.788
75	740332.400	4415120.342
76	740245.233	4415096.960
77	739633.705	4414593.184
78	739825.613	4414174.484
79	739935.192	4414064.905
80	740010.060	4413785.496
81	739935.192	4413506.086

82	739730.650	4413301.544
83	739497.187	4413238.988
84	738759.552	4413206.597
85	738574.992	4413256.049
86	738201.551	4413401.223
87	738144.772	4413416.437
88	736824.481	4413297.014
89	736771.292	4413243.825
90	736541.870	4413182.351
91	736250.870	4413209.146
92	736152.886	4413182.892
93	735925.891	4413200.707
94	735798.005	4413166.440
95	735620.538	4413213.992
96	735402.533	4413272.119
97	735284.180	4413303.831
98	735140.829	4413447.182
99	735106.185	4413576.477
100	734843.815	4414977.800
101	734929.392	4415297.176
102	735171.827	4415539.612
103	735503.001	4415628.349
104	735768.701	4415557.155
105	735930.819	4415498.755
106	735996.197	4415481.237
107	736448.151	4415506.969
108	736596.001	4415546.585
109	736851.292	4415478.180
110	736908.985	4415420.487
111	738110.150	4415265.895
112	738405.592	4415345.058
113	738772.183	4415246.831
114	739110.417	4415120.301
115	739691.970	4415673.664
116	739710.290	4415742.112
117	739876.893	4415908.805
118	740001.007	4415942.098
119	741023.825	4416423.864
120	741027.976	4416439.372
121	741194.579	4416606.066
122	741409.568	4416663.735
123	742126.328	4417305.878
124	742150.823	4417397.294
125	742337.709	4417584.180
126	742593.001	4417652.585
127	742773.603	4417604.193
128	742865.178	4417577.642
129	742962.001	4417603.585
130	743217.292	4417535.180
131	743295.623	4417456.849
132	743444.141	4417409.740
133	743475.035	4417401.471
134	743582.775	4417399.084
135	743719.001	4417435.585
136	743974.292	4417367.180
137	744001.053	4417340.420
138	744027.686	4417343.653
139	744064.247	4417380.234
140	744203.908	4417417.697
141	744421.986	4417493.207
142	744500.102	4417514.138
143	744524.409	4417526.901

144	744575.173	4417577.664
145	744757.728	4417789.363
146	745060.315	4418091.950
147	745335.093	4418165.577
148	745915.201	4419285.675
149	745946.928	4419404.215
150	746010.776	4419468.098
151	746293.361	4420222.128
152	746278.052	4420279.198
153	746312.565	4420408.145
154	746452.346	4421603.514
155	746426.999	4421698.006
156	746487.934	4421925.668
157	746567.210	4422004.988
158	747060.806	4422909.723
159	747075.043	4422962.915
160	747717.655	4424628.688
161	748057.318	4424968.351
162	748537.610	4425097.045
163	749017.901	4424968.351
164	749222.887	4424763.366
165	749420.478	4424766.383
166	749669.845	4424699.565
167	750541.339	4425175.617
168	750750.709	4425384.988
169	751156.001	4425493.585
170	751561.292	4425384.988
171	751781.081	4425165.199
172	751931.005	4425063.336
173	752126.001	4425115.585
174	752358.058	4425053.406
175	752497.161	4425108.234
176	752557.620	4425168.694
177	752708.905	4425335.740
178	752795.088	4425421.923
179	752909.769	4425521.005
180	753068.687	4425679.923

TURBINE PLACEMENT AREAS	**TOWARDS RIGHT (Y)**	**UPWARDS (X)**
T1/1	735444.619	4415020.597
T1/2	735557.587	4415024.391
T1/3	735561.380	4414911.422
T1/4	735448.412	4414907.629
T2/1	735782.619	4415018.597
T2/2	735895.587	4415022.391
T2/3	735899.381	4414909.422
T2/4	735786.412	4414905.629
T3/1	736148.618	4415064.597
T3/2	736261.587	4415068.391
T3/3	736265.381	4414955.422
T3/4	736152.412	4414951.629
T4/1	736537.618	4415090.598
T4/2	736650.587	4415094.391
T4/3	736654.381	4414981.422
T4/4	736541.412	4414977.628
T5/1	735421.619	4413697.598
T5/2	735534.588	4413701.390
T5/3	735538.380	4413588.422
T5/4	735425.412	4413584.629

T6/1	735739.624	4413731.618
T6/2	735852.593	4413735.410
T6/3	735856.385	4413622.442
T6/4	735743.416	4413618.649
T7/1	736066.619	4413740.598
T7/2	736179.588	4413744.390
T7/3	736183.380	4413631.421
T7/4	736070.411	4413627.629
T8/1	736457.619	4413740.598
T8/2	736570.588	4413744.390
T8/3	736574.380	4413631.421
T8/4	736461.411	4413627.629
T9/1	738347.210	4414539.071
T9/2	738460.180	4414542.864
T9/3	738463.973	4414429.894
T9/4	738351.003	4414426.101
T10/1	738661.424	4414584.289
T10/2	738774.394	4414588.083
T10/3	738778.188	4414475.112
T10/4	738665.217	4414471.319
T11/1	739008.618	4414622.599
T11/2	739121.589	4414626.392
T11/3	739125.382	4414513.421
T11/4	739012.411	4414509.628
T12/1	738236.618	4413989.599
T12/2	738349.588	4413993.391
T12/3	738353.381	4413880.421
T12/4	738240.411	4413876.628
T13/1	738734.177	4413811.168
T13/2	738847.148	4413814.960
T13/3	738850.940	4413701.990
T13/4	738737.970	4413698.197
T14/1	738975.761	4413998.438
T14/2	739088.732	4414002.230
T14/3	739092.524	4413889.260
T14/4	738979.554	4413885.467
T15/1	739392.858	4413840.092
T15/2	739505.829	4413843.885
T15/3	739509.622	4413730.913
T15/4	739396.650	4413727.121
T16/1	740037.480	4415577.382
T16/2	740167.447	4415581.747
T16/3	740171.812	4415451.779
T16/4	740041.844	4415447.415
T17/1	741355.165	4416274.642
T17/2	741485.133	4416279.008
T17/3	741489.498	4416149.039
T17/4	741359.530	4416144.674
T18/1	742534.615	4417196.599
T18/2	742647.589	4417200.394
T18/3	742651.384	4417087.420
T18/4	742538.411	4417083.625
T19/1	742903.615	4417147.599
T19/2	743016.589	4417151.394
T19/3	743020.384	4417038.420
T19/4	742907.410	4417034.625
T20/1	743301.615	4417031.599
T20/2	743414.589	4417035.394
T20/3	743418.384	4416922.420
T20/4	743305.410	4416918.625
T21/1	743660.615	4416979.599
T21/2	743773.589	4416983.394

T21/3	743777.384	4416870.420
T21/4	743664.410	4416866.625
T22/1	744233.615	4417040.599
T22/2	744346.590	4417044.394
T22/3	744350.385	4416931.420
T22/4	744237.410	4416927.625
T23/1	744551.615	4417087.600
T23/2	744664.590	4417091.395
T23/3	744668.385	4416978.420
T23/4	744555.410	4416974.625
T24/1	744860.867	4417212.980
T24/2	744973.842	4417216.775
T24/3	744977.637	4417103.800
T24/4	744864.662	4417100.005
T25/1	745482.220	4417314.659
T25/2	745595.196	4417318.454
T25/3	745598.991	4417205.479
T25/4	745486.016	4417201.683
T26/1	745771.262	4417407.354
T26/2	745884.238	4417411.149
T26/3	745888.033	4417298.173
T26/4	745775.058	4417294.378
T27/1	746110.532	4417405.747
T27/2	746223.508	4417409.542
T27/3	746227.303	4417296.566
T27/4	746114.327	4417292.771
T28/1	745880.297	4415985.958
T28/2	745993.273	4415989.753
T28/3	745997.067	4415876.777
T28/4	745884.091	4415872.983
T29/1	746183.438	4416052.676
T29/2	746296.414	4416056.471
T29/3	746300.208	4415943.495
T29/4	746187.232	4415939.701
T30/1	746690.614	4416665.600
T30/2	746803.591	4416669.395
T30/3	746807.385	4416556.419
T30/4	746694.409	4416552.624
T31/1	746987.154	4416979.917
T31/2	747100.131	4416983.712
T31/3	747103.926	4416870.736
T31/4	746990.949	4416866.941
T32/1	747535.801	4417351.493
T32/2	747648.777	4417355.288
T32/3	747652.573	4417242.311
T32/4	747539.596	4417238.516
T33/1	745584.986	4417846.305
T33/2	745714.958	4417850.671
T33/3	745719.324	4417720.699
T33/4	745589.352	4417716.333
T34/1	746666.172	4420342.133
T34/2	746796.145	4420346.501
T34/3	746800.513	4420216.529
T34/4	746670.541	4420212.160
T35/1	746815.118	4421760.942
T35/2	746945.091	4421765.312
T35/3	746949.461	4421635.339
T35/4	746819.488	4421630.969
T36/1	747418.870	4422860.368
T36/2	747548.843	4422864.739
T36/3	747553.214	4422734.765
T36/4	747423.241	4422730.395

T37/1 748501.326	4424295.098
T37/2 748614.303	4424298.899
T37/3 748618.104	4424185.921
T37/4 748505.126	4424182.121
T38/1 748954.862	4423982.261
T38/2 749067.840	4423986.061
T38/3 749071.640	4423873.083
T38/4 748958.662	4423869.283
T39/1 749324.846	4423870.378
T39/2 749437.824	4423874.178
T39/3 749441.624	4423761.200
T39/4 749328.646	4423757.400
T40/1 751097.610	4424737.599
T40/2 751210.589	4424741.400
T40/3 751214.390	4424628.420
T40/4 751101.411	4424624.620
T41/1 748273.768	4424098.285
T41/2 748386.745	4424102.085
T41/3 748390.546	4423989.108
T41/4 748277.568	4423985.308
T42/1 747256.273	4417180.688
T42/2 747369.250	4417184.483
T42/3 747373.045	4417071.507
T42/4 747260.069	4417067.711
T43/1 752329.729	4424495.645
T43/2 752442.709	4424499.445
T43/3 752446.509	4424386.465
T43/4 752333.529	4424382.664
T44/1 752603.609	4424654.600
T44/2 752716.590	4424658.400
T44/3 752720.390	4424545.420
T44/4 752607.410	4424541.619
T45/1 752866.609	4424756.600
T45/2 752979.590	4424760.400
T45/3 752983.391	4424647.420
T45/4 752870.410	4424643.619
T46/1 753041.099	4425083.454
T46/2 753154.080	4425087.255
T46/3 753157.881	4424974.274
T46/4 753044.900	4424970.473
T47/1 753306.802	4425213.952
T47/2 753436.780	4425218.325
T47/3 753441.153	4425088.347
T47/4 753311.175	4425083.974
T48/1 753625.824	4425280.812
T48/2 753755.803	4425285.185
T48/3 753760.175	4425155.207
T48/4 753630.197	4425150.834

TURBINE SPOTS	**TOWARDS RIGHT (Y)**	**UPWARDS (X)**

T1 735503.000	4414966.000
T2 735841.000	4414964.000
T3 736207.000	4415010.000
T4 736596.000	4415036.000
T5 735480.000	4413643.000
T6 735798.005	4413677.020
T7 736125.000	4413686.000
T8 736516.000	4413686.000
T9 738405.592	4414484.473

T10 738719.806	4414529.691
T11 739067.000	4414568.000
T12 738295.000	4413935.000
T13 738792.559	4413756.569
T14 739451.240	4413785.493
T15 740104.646	4415514.571
T16 741422.332	4416211.831
T17 742593.000	4417142.000
T18 742962.000	4417093.000
T19 743360.000	4416977.000
T20 743719.000	4416925.000
T21 744292.000	4416986.000
T22 744610.000	4417033.000
T23 744919.252	4417158.380
T24 745540.606	4417260.059
T25 745829.648	4417352.754
T26 746168.918	4417351.147
T27 745938.682	4415931.358
T28 746241.823	4415998.076
T29 746749.000	4416611.000
T30 747045.540	4416925.317
T30 747594.187	4417296.892
T31 745652.155	4417783.492
T32 746733.343	4420279.321
T33 746882.290	4421698.131
T34 747486.042	4422797.557
T35 748559.715	4424240.500
T36 749013.252	4423927.662
T37 749383.235	4423815.779
T38 751156.000	4424683.000
T39 748332.157	4424043.687
T40 747314.660	4417126.088
T41 752388.119	4424441.045
T42 752662.000	4424600.000
T43 752925.000	4424702.000
T44 753099.490	4425028.854
T45 753373.978	4425151.140
T46 753693.000	4425218.000
T47 735503.000	4414966.000
T48 735841.000	4414964.000

SWITCHYARD	TOWARDS RIGHT (Y)	UPWARDS (X)
S1	746723.401	4415824.452
S2	746823.401	4415824.452
S3	746823.401	4415724.452
S4	746723.401	4415724.452
SM	746773.401	4415774.452

ROAD

ROAD	TOWARDS RIGHT (Y)	UPWARDS (X)
YK1	753690.910	4425223.129
YK2	753695.075	4425216.299
YK3	753614.139	4425176.318
YK4	753616.966	4425168.672
YK5	753545.834	4425165.241
YK6	753545.839	4425157.241
YK7	753433.055	4425165.175
YK8	753433.571	4425157.176

YK9	753371.527	4425157.236
YK10	753375.021	4425149.621
YK11	753239.237	4425038.367
YK12	753243.571	4425031.506
YK13	753174.895	4425011.558
YK14	753174.988	4425002.930
YK15	753098.714	4425041.383
YK16	753098.512	4425032.871
YK17	753024.882	4425016.460
YK18	753028.479	4425009.231
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YK720	735590.249	4413643.510
YK721	735585.970	4413650.616
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YK740	736123.406	4413684.044
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YK748	736523.582	4413700.295
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YK750	738779.056	4414475.385
YK751	738725.890	4414524.618
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YK753	748574.692	4424080.859
YK754	748567.707	4424240.849
YK755	748559.715	4424240.500
YK756	751156.743	4424681.895
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PLANT AREATO WARDS RIGHT UPWARDS

S1	746723.401	4415824.452
S2	746823.401	4415824.452
S3	746823.401	4415724.452
S4	746723.401	4415724.452
SM	746773.401	4415774.452

Coordinate sequence : Latitude, Longitude
Datum : WGS 84
Type : Geographical

PLANT ZONE	TOWARDS RIGHT (Y)	UPWARDS (X)
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6	39.93726111	29.97456504
7	39.93498460	29.97366597
8	39.93335911	29.97140883
9	39.93310214	29.96997352
10	39.93242202	29.96870906
11	39.92960183	29.96479556
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13	39.92782644	29.96096563
14	39.92529206	29.95725463
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16	39.92237352	29.94961443
17	39.92304370	29.94674827
18	39.91829058	29.92209125
19	39.91743332	29.91731673
20	39.91858534	29.91238360
21	39.92084010	29.90638846
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23	39.91614652	29.89997609
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37	39.87319646	29.88079176
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TURBINE SPOTS	LATITUDE	LONGITUDE
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T3	39.85060596	:29.76049228
T4	39.85073169	:29.76504364
T5	39.83850537	:29.75151227
T6	39.83872336	:29.75523692
T7	39.83871339	:29.75905751
T8	39.83860466	: 29.76362205
T9	39.84526240	:29.78597139
T10	39.84558111	:29.78965628
T11	39.84582824	:29.79372370
T12	39.84034854	:29.78448035
T13	39.83860312	:29.79022382
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T15	39.85405399	:29.80618512
T16	39.85995515	:29.82182766
T17	39.86799204	:29.83584229
T18	39.86744558	:29.84013335
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T20	39.86571681	:29.84891103
T21	39.86610106	:29.85562511
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T23	39.86747155	:29.86301447
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T25	39.86895753	:29.87371892
T26	39.86884476	:29.87768030
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TURBINE PLACEMENT AREAS	LATITUDE	LONGITUDE

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T44/3 39.93678388:29.95457666
T44/4 39.93730986:29.95530677
T45/1 39.93876779:29.95713985
T45/2 39.93951752:29.95818066
T45/3 39.94037480:29.95955962
T45/4 39.94175724:29.96147895

SWITCHYARD	LATITUDE	LONGITUDE
S1	39.93730986	29.95530677
S2	39.93876779	29.95713985
S3	39.93951752	29.95818066
S4	39.94037480	29.95955962

SM 39.94175724:29:96147895

Wind Power Energy Plant

Total Installed Power: 90 MWm

PLACE OF THE PROJECT PURSUANT TO THE ENVIRONMENTAL IMPACT ORDINANCE (SECTOR, SUB SECTOR):	Article 43, Attachment 1, Environmental Impact Ordinance Nr. 29186 dated November 25th, 2014 "*Wind power energy plants with installed power of more than 50 MWm,"*
NACE CODE OF THE PROJECT:	**35.11.19** Generation of electrical energy
NAME OF THE INSTITUTION THAT PREPARED THE FILE/ REPORT	(logo) **EN- ÇEV ENERJİ ÇEVRE YATIRIMLARI VE DANIŞ. HAR. IMAR INŞ. A.Ş.**
ADDRESS	**Mahatma Gandi Cad. No.: 92/2 G.O.P. / Çankaya – Ankara**
TELEPHONE, FACSIMILE NR. :	**Telephone : (312) 44726 22** **Facsimile : (312) 446 38 10**
NUMBER, DATE OF THE CERTIFICATE OF COMPETENCY:	**70 – October 12th, 2017**
DATE OF REPORT PRESENTATION:	**June 8th, 2018**

LIST OF CONTENTS:

(*) The impact zone has to be taken into consideration when the environmental characteristics of the area selected for this Project are presented. During the explanation of the mentioned issues in this part, in the Notes part of the report, it should be specified which information provided by the concerned state institutions and enterprises, research institutions, universities or other similar institutions was provided from which institution or source or related map, etc., is recorded in

CHARTS

FIGURES

ABBREVIATIONS

A.Ş.	**Joint Stock Company (incorporated)**
DSI	**State Water Affairs**
MIGEM	**Mining affairs General Directorate**
DDYGM	**State Railways General Directorate**
Bkz	**see**
RES	**Wind Power Energy Plant**
TM	**Transformer Center**
No.	**Number**
Ort.	**Average**
Sn.	**Second**
Vb.	**And similar ones**
ÇED	**Environmental Impact Assessment**
ÇGDYY	**Regulations for the Evaluation and Management of the Environmental Noise**
SKHKY	**Regulations for the Management of the Air Pollution created by Industry**
HKDY	**Regulations for Air Quality Evaluation and Management**
SKKY	**Regulations for Water Pollution Monitoring**
MWe	**Mega Watt electricity**
MWm	**Mega Watt mechanics**
Ha	**hectar**
Km	**kilometer**
m	**meter**
m^2	**square meter**
m^3	**cubic meter**

NO TECHNICAL SUMMARY OF THE PROJECT:

Çekim Enerji Yatırım ve Ticaret A.Ş. is the owner of the project

The project subject activity consists of the installation and operation of the planned **"Bozüyük Wind Power Energy Plant"** project business in the Çamyayla, Muratdere, Delielmacık, Erikli locations of the Bozüyük sub- province, Bilecik Province.

The total installed power of the project is 90 MWe/90MWm.

On the date of June 19th, 2009 the Bilecik Environment and Urbanization Regional Directorate issued a document of Environmental Impact Assessment not necessary concerning the Bozüyük Wind Power Energy Plant project. At the stage of obtaining the necessary permits before starting the construction of the power plant that had an Environmental Impact Assessment not necessary document, the Bilecik Forestry Operation Directorate pointed out that the actualization of the subject project would be harmful since there were productive high forests in the power plant area. For this reason, some changes were initiated in borders of the power plant area that had an Environmental Impact Assessment not necessary document and the turbine locations were changed and the power plant area moved about 3 km away.

Within this context, a site inspection was done on **January 10th, 2017** in the newly determined power plant area. An Environmental Impact Assessment application file was prepared and submitted to the Ministry of Environment and Urbanization on **January 11th, 2017**. The Public Participation Meeting took place on February 2nd, 2017. After the Public Participation Meeting, the present **Environmental Impact Assessment Report** was prepared in line with the Environmental Impact Assessment Report Special Format given on **August 18th, 2017** by the Ministry of Environment and Urbanization.

As far as the project subject activity is concerned, the required applications were made to the Energy Market Regulatory Authority for amending the Production License. The Energy Market Regulatory Authority approved the amendment of the production license.

There will be in total 48 turbines in the Wind Power Energy Plant Area. 40 of these 48 turbines will be each of 1,7 MWm/MWe installed power and 8 will be each of 2,75 MWm/MWe installed power GE wind turbines. The selected tower height for the 1,7 MWm/MWe installed power turbines is 80 m, turbine rotor diameter is 103 m and the selected tower height for the 2,75 MWm/MWe installed power turbines is 85 m, turbine rotor diameter is 120 m. The electric energy to be generated by the power plant will be 323.000.000 kwh per year. It is planned to transfer 154 Kv of this energy to the switchyard center by using the Seyitömer – Bozüyük Transformer Center EİH in- out connection. However, since the energy transfer line was not evaluated within the scope of this project, the necessary applications will be made pursuant to the Environmental Impact Assessment Law nr. 29186 dated November 11th 2014 (together with its amendment number 29619 dated February 9th, 2016, amendment number 30077 dated May 26th, 2017) and the permissions will b e obtained.

The Wind Power Energy Plant area was not registered as closed to mining in the records of the General Directorate of Mining Affairs but was recorded as Bozüyük Wind Power Energy Plant Project special permission area number ER: 3281236 (see Attachment 4.1)

The General Directorate of Mining Affairs divided the power plant area in 2 separate polygons. In the 1st polygon the T1 – T33 turbines will be located and in the 2nd polygon the T34 – T48 turbines will be located. Between the two polygons there is a mining area, the exploitation permit of which belongs to Murat Dere Mining. There will be no intervention in the mining area and the necessary precautionary measures will be taken.

Transportation to the area is possible by the village roads diverging from the Bursa - Eskişehir highway. The turbine locations planned within the project scope are out of the available and planned highway itineraries. However, the Wind Power Energy Plant area is located in the portion between Km 88+000 and Km 90+00 of the Bursa - Eskişehir State Highway project. Consequently, pursuant to the provisions of the Regulations for the Electrical High Current Installations the area will keep out of the highway nationalization borders, proceedings will run compliant with the Highway Traffic Law and the regulations and by- laws passed based on this law. Moreover, at the installation and operation stage a permit will be obtained from the Highways 14th Zone Directorate for the utilization of the highway. **The opinion of the Highways 14th Zone Directorate and the General Directorate of Highways is submitted attached (see Attachment 4.2).**

In the power plant area there is also the "Yenişehir – Bozüyük Railway" Project the 1/5.000 scale rough draft of which was completed by the General Directorate of State Railways. Although the subject power plant is intersecting the railway itinerary between Km 67+200 and Km 68+500, since it remains above the railway tunnel and there is no construction planned in this part, they stated that there is no objection against the present planning of the subject wind power energy plant. **(see Attachment 4.3)**.

In the power plant area there is no registered natural protected area or natural asset defined pursuant to the "Regulations for Procedures and Principles regarding the determination, registration and approval of the protected areas". However, concerning the planned investment, the future actions will take into consideration the Environmental Law number 2872 and Law number 5491 for the amendment of this law and the present/ future related provisions of the regulations to be passed in connection to this law, the permits required within the frame of the other legislation will be obtained, all the necessary measures will be taken regarding the conservation of the ecologic balance, the protection and development of the environment. **The opinion of the Republic of Turkey Bilecik Governorship Environment and Urbanization Regional Directorate is submitted attached (see Attachment 4.4).**

The investigations made in the power plant area revealed that there is no cultural heritage in the areas where physical and construction interventions are planned. In the course of the work that will be performed within the scope of the project activities, if some areas which, according to the Law number 2863 dated July 21st, 1983 for the Preservation of the Cultural and Natural Assets, Article 3, first paragraph, clause (a) with the topic "definitions", sub-clauses 1, 2, 3 and 5, are defined as "Cultural heritage", "Natural heritage", "Site" and "Protection Area" are found, then the work will stop and the involved state authorities will be urgently informed about the findings." **The opinion number E.151557 dated February 19th, 2018 of the Eskişehir Regional Directorate of the Protection of Cultural Heritage is submitted attached (see Attachment 4.5)**.

The location of the turbines and the switchyard which will be installed within the scope of the project is in the area that is defined, according to Large Lands Group Combination, as Non- calcareous Brown Forest Soil and Brown Forest Soil and, according to the current utilization, as Shrubbery, Forest and Dryland Agriculture (fallowed) soil. From the land usability point of view, the project is located in the lands of category VI and VII.

The opinion of the Republic of Turkey Bilecik Governorship Agriculture and Livestock Breeding Regional Directorate number E310761 dated February 8th, 2017 sent in the context of the project studies is submitted attached **(see Attachment 4.8).**

The definite amount of the agricultural lands will be clarified after the nationalization procedures and in order to provide the utilization of the agricultural lands for non- agricultural purposes, all the permits necessary within the scope of the **"Soil Protection and Land Utilization Law number 5403**" effectuated by its publication in the Official Gazette Number 25880 dated July 19th, 2005 will be obtained after getting the Positive Environmental Impact Assessment document and before the construction start up.

In case of any actions concerning pastures, which would be initiated before or after the business activities within the scope of the Pasture Law number 4342, the action will not start up before getting the required permits from Bilecik Agriculture and Livestock Breeding Regional Directorate.

During and after the construction works of the project, the flow conditions of the dry streams, streams and running waters will not be changed and no interference will be done; the aquaculture living zones present at the surface water supply passages will not be harmed (no hazardous materials will be poured in the water, etc.) and everything will be done in compliance with the provisions of the **Aquacultural Resources Law number 1380**.

There is no decision regarding any zone subject to disaster (zone forbidden to construction and occupation) taken by the Council of Ministers within the scope of the Law number 7269 for t Aids to be Made due to Disasters Affecting the Public Life. Additionally, the subject area is not among the places planned to be utilized within the scope of the same law. The institutional opinion of the Bilecik Governorship Disaster and Emergency Regional Directorate is submitted attached **(see Attachment 4.9).**

During the works within the scope of the project, the infrastructure and upper structure installations of the villages (drinking water, sewage, agricultural watering) and their complementary elements will not be harmed, in case this would happen, the project owner will compensate urgently without victimizing the citizens and the activities will stop immediately if any change will be noticed at springs due to these activities.

During the works within the scope of the project, the roads under the responsibility of the Bilecik Special Provincial Administration will not be harmed, in case this would happen, then the roads will be restored to the old conditions.

All the studies within the activity scope will be carried according to the 1/100.00 scale Bilecik Environmental Plan and the provisions of the Plan. The institutional opinion of the Bilecik Special Provincial Administration is submitted attached **(see Attachment 4.10).**

Regarding the flooding of the surface water resources in the project area, the turbine installation places will be located outside the stream beds and the opinion of the State Water Affairs 3rd Zone Regional Directorate will be consulted for the measures to be taken against floods and for the drainage procedures.

Regarding the artworks to be made on the itineraries planned as transportation roads, if the stream crossings are in question, then the suitability opinion of the State Water Affairs 3rd Zone Regional Directorate will be requested.

The contact with the natural ground of any kind of solid and fluid residues, which might result during or after the construction, will be cut off, impermeability will be provided and the disposal proceedings will be executed pursuant to provisions of the related regulations.

The number of persons planned to work during the construction period within the project scope is 40, whereas during the operation period this number is about 20.

It is planned to build 1 central prefabricated work site within the borders of the power plant in order to meet the social necessities of the personnel who will work on site during the construction period within the project scope. The main prefabricated site to be build in the power plant area will have units such kitchen, dormitory, toilet, bathroom. The personnel who will work within the scope of the project will satisfy here all their social needs and will also accommodate here.

The drinking – utilization water needed for the personnel who will work within the scope of the project and the drinking – utilization for other uses (dust emission, washing of equipments, etc.) will be provided from the source points indicated by the Dodurga Municipality with the tankers to be rented against charge.

PART I: PRESENTATION OF THE PROJECT AND ITS PURPOSE

(DESCRIPTION OF THE PROJECT SUBJECT ACTIVITY, ITS LIFE TIME, SERVICE PURPOSES, MARKET OR SERVICE AREAS AND ITS IMPORTANCE AND NECESSITIES WITHIN THIS AREA FROM THE ECONOMIC AND SOCIAL POINT OF VIEW, AT COUNTRY AND/ OR PROVINCE LEVEL:)

Description of the Project Subject Activity

ÇEKIM ENERJI YATIRIM VE TICARET A.Ş. plans to install and operate the **"Bozüyük Wind Power Energy Plant" (90MWm)** in the Çamyayla, Muratdere, Delielmacık, Erikli locations of the Bozüyük sub-province, Bilecik Province. The **Site Location Map of the Project** is submitted attached (**see Attachment 1.1**). The coordinates of the project are mentioned on the inside cover and attached **(see Attachment 1.2).**

Concerning the Bozüyük Wind Power Energy Plant project, on the date of June 19th, 2009 the Bilecik Environment and Urbanization Regional Directorate took decision number 678-1139 and issued the document of Environmental Impact Assessment not necessary **(see Attachment 3.1).The Production License nr. EÜ/3382-5/2045 was issued on August 18th, 2011 for the subject project (see Attachment 3.2).**

At the stage of obtaining the necessary permits before starting the construction of the power plant, the Bilecik Forestry Operation Directorate pointed out that the actualization of the subject project would be harmful since there were 1st grade site productive high forests in the power plant area. Taking into consideration the opinion of the Bilecik Forestry Operation Directorate, some changes were initiated keeping away from the productive high forests zone, and the power plant area and the turbine locations were revised and a license amendment was requested. The Application for the Amendment of the Production License Number 572 dated September 1st, 2016 made to the Energy Market Regulatory Agency is submitted attached **(see Attachment 3.3.). The Energy Market Regulatory Agency approved the production license amendment (see Attachment 3.4).**

The comparison chart between the zone for which the Environmental Impact Assessment Unnecessary Certificate was issued and the requested zone is given in Chart 1. The satellite view is shown in Figure 1.

Chart 1. Comparison between the zone for which the Environmental Impact Assessment Unnecessary Document was issued and the requested zone

	Zone of Environmental Impact Assessment Unnecessary	Requested zone
Installed power	30 x 3MWm = 90 MWm	40 x 1,7 MWm + 8 x 2,75 MWm = 90 MWm
Number of Turbines	30	48
Type of Turbines	GE	40 pcs GE 103 and 8 pcs GE 120
Surface of Power Plant Area	81.268.849,66	38.544.339,21

The borders of the area that had an Environmental Impact Assessment not necessary document were changed, the power plant area was revised and moved about 3 km to the South.

Figure – 1 The zone for which the Environmental Impact Assessment is not necessary and the requested satellite view of the zone

A site inspection was done on **January 10th, 2017** for the subject project **(see Attachment 1.3).** The Environmental Impact Assessment application file was prepared and submitted to the Ministry of Environment and Urbanization on **January 11th, 2017**. The Public Participation Meeting took place on **February 2nd, 2017**. After the Public Participation Meeting, the present **Environmental Impact Assessment Report** was prepared in line with the Environmental Impact Assessment Report Special Format **(see Attachment 1.4)** given on **August 18th, 2017** by the Ministry of Environment and Urbanization pursuant to Article 10 of the Environmental Impact Assessment Regulations, in order to present the project subject activity, its features, location, possible impacts and the foreseen precautionary measures.

The project subject activity was evaluated within the scope of the Attachment 1 List of Article 43 *"Wind power energy plants with installation power of 50 MWm and above"* of the Environmental Impact Assessment Regulations (amendment number 29629 dated February 9th, 2016, amendment number 30077 dated May 26th, 2017) enacted by its publication in the Official Gazette Issue number 29186 dated November 25th, 2014.

Lifetime,

Regarding the sites where the turbines will be located, the total installation completion period is foreseen as total 74 months, of which 36 months are for the period before construction and 38 months for the construction period.

The project lifetime depending on the production license is foreseen to be 49 years.

The service purposes, market or service areas and its importance and necessities within this area from the economic and social point of view, at country and/ or province level,

Renewable energy can be defined as the energy source which, within nature's self evolution, can be available the same the next day. The new and renewable energy sources, which would not create environmental pollution and would replace the primary energy sources that pollute the environment and are inevitably consumed, can be studied under topics such as solar energy, wind power energy, geothermal energy, hydraulic energy, hydrogen energy, marine origin energy and biomass energy.

The fact that the primary energy sources in Turkey are scarce and their utilization results in environmental pollution deems obligatory the development of the renewable energy sources and technologies. The main renewable energy sources are the hydraulic, biomass, wind power, solar and geothermal sources. In the industrialized countries the utilization of renewable and sustainable energy sources instead of fossil sources started to be actualized efficiently. The clean, domestic and renewable energy sources represent the promise of a bright future not only for Turkey but for the entire world.

In Chart 2 there is given the energy plan until year 2040 as ton equivalent petroleum oil (tep). Based on the European Renewable Energy Council (EREC, 2006) as of year 2040 almost half of the global energy needs will be satisfied by renewable energy. The most important world developments in renewable energy generation will be experienced between years 2001 and 2040 in the photovoltaic and wind power energy (Demirbaş, 2009). The photovoltaic is the method of generating energy from a light source by using the solar batteries or series. The big hydropower is the big scale hydroelectric systems. The power of these systems is above 50MW. The small hydropower zones are the power systems between 10-50 MW. 1 The Renewable Energy Potential and its Future in Turkey, 2010

CHART – 2 Future renewable energy forecasts (World) (Demirtaş 2000)

	2001	2010	2020	2030	2040
Total consumption	10038	10549	11425	12352	13310
Biomass	1080	1313	1791	2483	3271
Big hydropower	22,7	266	309	341	358
Geothermal	43,2	86	186	333	493
Small hydropower	9,5	19	49	106	189
Wind power	4,7	44	266	542	688
Solar	4,1	15	66	244	480
Photovoltaic	0,2	2	24	221	784
Solar thermal electricity	0,1	0,4	3	16	68
Marine (flux – reflux, ocean)	0,05	0,1	0,4	3	20
Total renewable energy sources	1365,5	1745,5	2694,4	4289	6351
Renewable energy	13,6	16,6	23,6	34,7	47,7

Our country shows a rapid social and economic development and, parallel to this development, it is faced with the necessity to generate the needed high quality energy uninterruptedly, reliably and economically, affecting the environment negatively as little as possible.

According to the high demand scenario in the Turkey Electrical Energy Generation Planning Study published in the website of Turkey Electricity Transmission Inc. (TEIAŞ) (2011 – 2020), the peak demand and energy demand, expected to increase in average by 7.5% per year, will reach eventually 66.845 MW and 433.900 GWh in year 2020. Under these circumstances, the total installed power of Turkey which was 49.524 MW at the end of 2010 (Thermal: 322.278,5 MW, Geothermal: 94,2 MW, Wind power: 1.320,2 MW, Hydraulic: 15.831,2 MW) should reach the level of 66.845 MW at the end of 2020 considering the present system, those under construction, the licensed ones and those expected to be put in function by the forecasted dates and the new additional capacities resulting from production planning studies. According to the study results, when taking into consideration the comparative development of the installed power and peak demand, it can be seen that the present system and the energy generation of the 3.476 MW public and 13.763 MW private enterprise projects under construction to be commissioned at the foreseen dates, would not meet the energy demand as of year 2018, that based on reliable production the demand in year 2016 was met one to one without reserves and as of year 2017 the high electricity demand has not been met. In case additional energy generation facilities would not be put in function parallel to the increasing consumption in Turkey, we would inevitably encounter energy hunger in the future.

Compared with the wind power potential especially of the European Union countries, which substantially benefit and aim at benefitting from the wind power energy, we think that the wind power potential of our country is seriously high and this potential represents and important opportunity for our country. Moreover, the fact that in our country the locations displaying favorable wind and suitable land characteristics are situated in the mountainous areas far from the settlement zones is another advantage. This situation means that, in our country which has mostly mountainous geographic characteristics, the idle mountains or suitable areas should be exploited for generating clean energy. The evaluation of the current potential is very important both from the resource variety and the prevention of resource waste points of view. The high potential winds, sufficient land to benefit from this potential, our present dependence on the foreign energy supply, our current energy demand (continuously increasing) and the industry required for building the wind power energy plants are available for benefiting efficiently from this resource which does not create any environmental pollution.

However, as mentioned above, when considering the the situation of the other energy resources along with the wind power energy, the efficient and productive exploitation of this resource is not a preference any more, it has clearly become a necessity.

The purpose of the activity planned to be performed was to utilize the wind power energy as the renewable energy source on site and to generate clean energy. In this way, a considerable contribution would be made to the regional and also country economy.

PART II: LOCATION OF THE PLACE SELECTED FOR THE PROJEC T

II.1. **Place of activity (Presentation of the project place at 1/50.000 or 1/100.000 scale on the Environmental Plan approved by the related Administration, on the Implementary Development Plan, together with the legends and plan notes, plotting the project zone and its close surroundings on the scaled map or sketch, plotting on the map the settlement areas located within the project area and its surroundings, indicating the distances, the region of the project zone, the names, direction and distances of the plants in the vicinity, the itineraries to be used for reaching the plant (if available, the 1/50.000 scale Environmental Plan, the 1/5.000 scale Master Development Plan and the 1/1.000 scale Implementary Development Plan should be presented together with their legends and plan notes, moreover the mentioned plan should carry the stamps "Approved by …With the decision Nr. …Dated …" and "Identical with the Original".)**

There is a 1/100.000 scale Environmental Plan of the Bilecik Province covering the regions where the project area is located. The Bilecik Province 1/100.000 scale Environmental Plan Sheet and the Plan Provisions were approved by the decision number 2008/101 taken on August 1st, 2008 by The Bilecik Province General Council. The **1/100.000 scale Environmental Plan, Plan Legend and the Related Plan Provisions,** carrying the "Identical with the original" stamp and the number and date of **attestation are submitted attached (see Attachment 2.1).** The 1/100.000 scale Environmental Plan on which the project subject activity area indicated is also submitted attached **(see Attachment 2.1.).**

The provision stating that *In case within the scope of "Point 14 under 6. General Provisions topic of the plan provisions of the Bilecik Province 1/100.000 scale province environmental plan* in force which includes the project subject of the Environmental Impact Assessment, *there would be need for security, health, education, etc. social equipment area, large green area, any kinds of disposal installations concerning the entire town or zone and their integrated recycling installations, treatments plants, social and technical infrastructure, railways, airport, dam, energy generation and transmission, then their sub scale plans will be prepared by the involved agency according to the protection, development and planning principles, taking into consideration the public benefit and by paying attention to the opinions of the involved institutions and enterprises, without any need for the amendment of the 1/100.000 scale environmental plan. The prepared plans will not be approved before getting suitable opinion of the Ministry of Environment and Urbanization. The approved plans will be sent to the Ministry of Environment and Urbanization in order to be recorded in the data base in digital medium. The subject facilities/ facility areas cannot be used for purposes other than those of the project"* provision is also included. Within this framework, actions will be executed according to the plan provisions.

According to the 1/100.000 scale Environmental Plan Map of the Bilecik Planning zone, the power plant area is located above the agricultural, forestry, territorial water preservation areas, territorial streamlet spring preservation area, rural development axis, urban development axis.

The definitions of the turbine areas and switchyard within the project scope prepared based on the 1/100.000 scale Environmental Plan map (see Attachment 2.1.) are given in Chart 3. As indicated in Chart 3, the T17, T33, and T43 turbines are in the agricultural area, the other turbines apart from the T17, T33, and T43are in the forest area; the turbines between T17 – T22 are in the rural development area, the T40 turbine in the area defined as the rural development axis. The T16, T18, T19, T20, T22, T23, T24, T25, T26, T27, T29, T30, T31, T32, T33, T34, T35, T36, T37, T38, T39, T40, T41, T42, T44, T45, T46,T47, T48, Switchyard remain in the area defined as territorial water protection area.

Chart – 3 The areas where the project areas are located on the Environmental Plan

Location area	**Project area**
Forest	T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T213, T15, T16, T18, T19, T20, T22, T23, T24, T25, T26, T27, T29, T30, T31, T32, T33, T34, T35, T36, T37, T38, T39, T40, T41, T42, T44, T45, T46,T47, T48 Switchyard area
Agriculture	T17, T33, T43
Territorial water protection area	T16, T18, T19, T20, T22, T23, T24, T25, T26, T27, T29, T30, T31, T32, T33, T34, T35, T36, T37, T38, T39, T40, T41, T42, T44, T45, T46,T47, T48 Switchyard area
Rural development axis	T17, T18,T19,T20,T21,T22
Urban development axis	T40

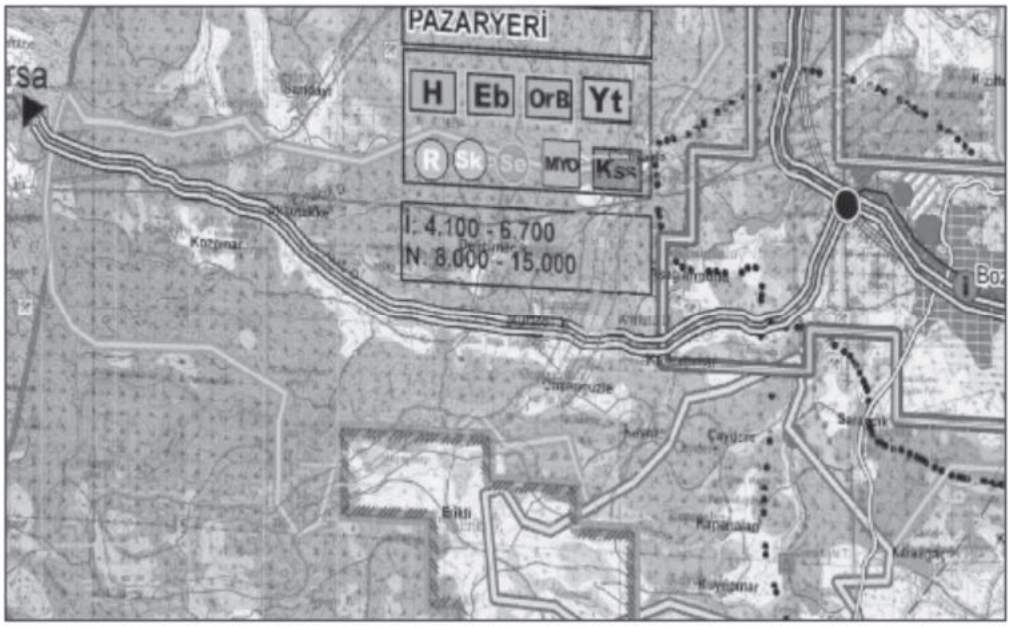

Figure – 2 The Project area and the Environmental Plan

All the work within the scope of the project t subject activities will be performed taking into consideration the provisions of the **Soil Protection and Land Utilization Law number 5403.**

All the permits within the scope of the "Soil Protection and Land Utilization Law number 5403" enacted by its publication in the Official Gazette Issue number 25880 dated July 19th, 2005, necessary for being able to utilize the agricultural land for non- agricultural purposes will be obtained after getting the Positive Environmental Impact Assessment Document but before the start up of the construction.

In case of any actions concerning pastures, which would be initiated before or after the business activities within the scope of the **Pasture Law number 4342,** the action will not start up before getting the required permits from Bilecik Agriculture and Livestock Breeding Regional Directorate.

During and after the construction works of the project, the flow conditions of the dry streams, streams and running waters will not be changed and no interference will be done; the aquaculture living zones present at the surface water supply passages will not be harmed (no hazardous materials will be poured in the water, etc.) and everything will be done in compliance with the provisions of the **Aquacultural Resources Law number 1380**.

Nationalization of the forest zone in the Project area is not in question and pursuant to Article 17 of the **"Forest Law"** number 6831, the "**Forest Permit"** will be obtained from Bilecik Forestry Regional Directorate. Actions will run in compliance with Articles 17/3 and 18 of the Forest Law number 28976 dated April 18th, 2014.

The nationalization procedures of the areas within the project scope but out of the forest area will be actualized pursuant to Nationalization Law number 2942 and the "*Nationalization Law"* number 4650 enacted by its publication in the Official Gazette on May 5th, 2001 which made different amendments in the other law.

There are no development plans available for the regions in which the project area is located.

Within the project framework, after obtaining the positive Environmental Impact Assessment document for the facilities planned o be constructed, the 1/5.000 scale Master Development Plan and the 1/1.000 scale Implementation Development Plan offers will be prepared and the required applications will be submitted to the Bilecik Special Regional Directorate.

The Power Plant zone covers an area of approximately 3.855 ha, the zone borders are at an air distance of almost 22 km from the Bilecik Province Center, and 13 km air distance from the Bozüyük Sub- province center. The Power plant area is located within the borders of the Bozüyük Sub- province. Around the power plant area there is the Camiyayla village at about 2700 m air distance, the Erikli village at about 100 m air distance, the Muratdere village at about 500 m air distance, the Çamyayla village at about 700 m air distance.

The turbines were positioned in groups as turbines number T_1, T_2, T_3 and T_4 in the First Turbine Group, turbines number T_5, T_6, T_6 and T_8 in the Second Turbine Group, turbines number T_9, T_{10}, $T_{11,}$ T_{12}, T_{13}, T_{14} and T_{15} in the Third Turbine Group, turbines number T_{18}, T_{19}, $T_{20,}$ T_{21} in the Fourth Turbine Group, turbines number T_{22}, $T_{23,}$ T_{23} in the Fifth Turbine Group, turbines number T_{25}, T_{26}, $T_{27,}$ T_{33} in the Sixth Turbine Group, turbines number T_{28}, $T_{29,}$ T_{30}, T_{31}, $T_{32,}$ T_{42} in the Seventh Turbine Group, turbines number T_{34}, T_{35}, T_{36} the Eighth Turbine Group, turbines number T_{37}, T_{38}, $T_{39,}$ T_{41} in the Ninth Turbine Group, turbines number T_{43}, T_{44}, $T_{45,}$ T_{46}, T_{47} and T_{48} in the Tenth Turbine Group. Turbines number T_{16}, T_{17} and T_{40} were positioned irregularly. The closest residence is in the west of the turbine T35 at 340 m air distance in the village Delielmacık.

The Bursa - Eskişehir highway is passing between turbines T33 and T34. The Bilecik – Eskişehir highway is passing in the East of turbine T48 at about 1.200 m air distance. Parallel to the Bilecik – Eskişehir highway is passing the Karasu streamlet which has a continuous flow.

Transportation to the site is possible by the roads diverging from the Bursa – Eskişehir highway. The **1/25.000 scale Topographic map is showing the turbine locations, the power plant area, the transportation roads within the project scope (see Attachment 2.2).**

The map showing the water sources, the roads around the project subject activity area is submitted attached (see Attachment 2.2).

The settlement areas closest to the turbines and the distance between them is shown in Chart 4.

Chart – 4 The settlement areas closest to the turbines and the distance between them (m)

	Village	Distance (m)	Direction [2]
T1	SAFA	6748	WEST
T2	KOZPINAR	7000	NORTH EAST
T3	KOZPINAR	6820	NORTH EAST
T4	KOZPINAR	6700	NORTH EAST
T5	SAFA	6800	WEST
T6	CAMIYAYLA	4380	SOUTH EAST
T7	CAMIYAYLA	4123	SOUTH EAST
T8	CAMIYAYLA	3870	SOUTH EAST
T9	CAMIYAYLA	4000	SOUTH
T10	CAMIYAYLA	3860	SOUTH
T11	CAMIYAYLA	3884	SOUTH
T12	CAMIYAYLA	3220	SOUTH EAST
T13	CAMIYAYLA	3050	SOUTH
T14	CAMIYAYLA	3280	SOUTH
T15	CAMIYAYLA	3154	SOUTH WEST
T16	CAMIYAYLA	4900	SOUTH WEST
T17	ERIKLI	3600	SOUTH EAST
T18	ERIKLI	2840	SOUTH EAST
T19	ERIKLI	2480	SOUTH EAST
T20	ERIKLI	2150	SOUTH EAST
T21	ERIKLI	1814	SOUTH EAST
T22	ERIKLI	1600	SOUTH EAST
T23	ERIKLI	1490	SOUTH EAST
T24	ERIKLI	1530	SOUTH EAST
T25	ERIKLI	1680	SOUTH WEST
T26	ERIKLI	1850	SOUTH WEST
T27	ERIKLI	1940	SOUTH WEST
T28	ERIKLI	1770	SOUTH WEST
T29	ERIKLI	1134	SOUTH WEST
T30	ERIKLI	1840	SOUTH WEST
T31	ORMANGÜZLE	2395	NORTH EAST
T32	ORMANGÜZLE	1716	NORTH EAST
T33	MURATDERE	2790	SOUTH WEST
T34	MURATDERE	856	SOUTH WEST
T35	DELIELMACIK	530	SOUTH WEST
T36	DELİELMACIK	1540	SOUTH WEST
T37	ÇAMYAYLA	1745	EAST
T38	ÇAMYAYLA	1220	EAST
T39	ÇAMYAYLA	885	EAST
T40	ÇAMYAYLA	1067	SOUTH WEST
T41	ÇAMYAYLA	2000	EAST
T42	ORMANGÜZLE	2050	NORTH EAST
T43	ÇAMYAYLA	2040	SOUTH WEST
T44	ÇAMYAYLA	2320	SOUTH WEST
T45	ÇAMYAYLA	2645	SOUTH WEST

The satellite views showing the power plant area and the turbine locations can be seen in the figures below.

[2] The determination of direction was made based on the turbine position.

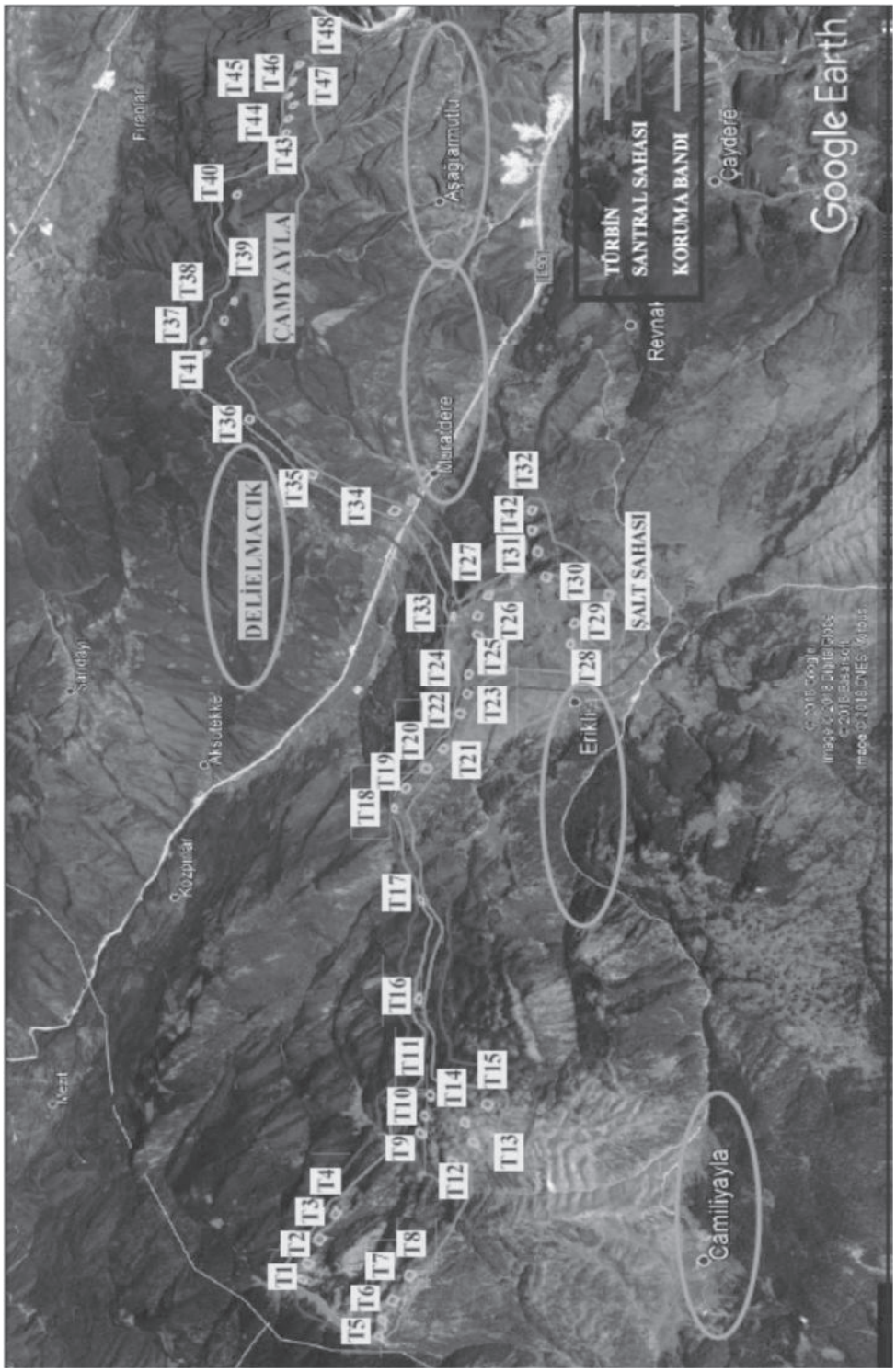

Figure – 3 The residential areas close to the requested site

II.2. The Location of the Activity Units within the scope of the Project (Indication of all the Administrative and Social Units, Technical Infrastructure Units on the Layout Plan)

The ED- 50 6 Degrees UTM Coordinates of the power plant area, the 48 turbine locations, the inter-turbine communication roads, the switchyard area and the protection zone are given in the inside cover part and attached **(see Attachment 1).**

The 1/25.000 scale topographic map showing the area of the power plant planned to be constructed within the scope of the project the 48 turbine locations, the inter- turbine communication roads, the switchyard area and the safety edge band are submitted attached **(see Attachment 2.2).**

The power plant layout plan regarding the project subject activity is submitted attached (see Attachment 2.3)

PART III: ECONOMIC AND SOCIAL ASPECTS OF THE PROJECT

III.1. Financial Sources regarding the actualization of the Project

The total investment amount of the Bozüyük Wind Power Energy Plant is 225 million TL. The the Project power plant will be financed usi ng the own resourced and credits.

III.2. Work Flow Chart and Timing Schedule regarding the actualization of the Project

Regarding the sites where the turbines will be located, the total installation completion period is foreseen as 74 months in total, of which 36 months are for the period before construction and 38 months for the construction period. The project business deadline plan is presented attached **(see Attachment 3.6).**

III.3. Cost – Benefit Analysis of the Project

Energy, as one of the most important economy inputs, is a commodity that guides the world politics and, due to the effects of the climatic changes, it is one of the main determinants of the world economic, social and geographic order. For this reason, considering the countries where life and consequently the sustainability of economic development is endangered due the high cost energy supply, the dependency on foreign countries is high and the impact of the climatic change consequences are serious, nowadays the energy and energy productivity policies became more important for these countries. Within this framework, the safe supply of energy, which is an indispensable element of the economic and community life, and its efficient utilization are the basic axis of the high efficiency energy policy alternatives of the Republic of Turkey, important for the actualization of an integral development approach in the foreign and domestic politics, social, cultural and technologic fields.

Due to the fact that Turkey is a country dependant on the foreign energy supply, the ratio of the energy component in the national income shows a deficit average of 4% per year. Due to the increase in the prices of crude oil and natural gas, the ratio of the energy component in the national income exceeded the 6% level and formed by itself more than 8% of the current account deficit.

The only way out of these unfavorable conditions is to set an infrastructure based as much as possible on local technology and renewable energy sources and to increase the energy productivity. In this respect, the maximum utilization of the domestic and renewable energy sources should be supported; the orientation of the production activities should be made according to the transmission constraints taking into consideration the geographic distribution of the natural resources and criteria such as productivity and resource utilization should not be neglected. [3]

The basic purpose of the subject project is to reveal the regional development potential by using efficiently the natural resources of Turkey and to decrease the energy dependency of Turkey on foreign supply by generating electricity.

[3] Report of the Energy Safety and Productivity Special Expertise Commission, 2023

The total investment amount of the project is 225 million TL. The investment which will be made in this region will seriously invigorate not only the economic life of the province but also of the villages around, of the sub- province and of the whole region. The establishment of the Wind Power energy plant in this region will bring dynamism to the regional economy and to the commercial life.

As the result of this project, there will be new employment opportunities for the people in the region, the commercial activities in the villages around would flourish and there will be some income increase due to more shopping. In addition to this, the acquisition of the equipment and materials necessary for construction and the supply of foods and other daily consumption materials during the construction period will boom considerably both the local and the regional markets.

III.4. Other economic, social and infrastructure activities which are not within the project scope but are planned to be actualized by the investment company or other company, related to the actualization of the project

There are other economic, social and infrastructure activities which are not within the project scope but are planned to be actualized by the investment company or other company, related to the actualization of the project

III.5. Nationalization

All the permits within the scope of the **"Soil Protection and Land Utilization Law number 5403"** enacted by its publication in the Official Gazette Issue number 25880 dated July 19th, 2005, necessary for being able to utilize the agricultural land for non- agricultural purposes will be obtained after getting the Positive Environmental Impact Assessment Document but before the start up of the construction.

In case of any actions concerning pastures, which would be initiated before or after the business activities within the scope of the **Pasture Law number 4342,** the action will not start up before getting the required permits from Bilecik Agriculture and Livestock Breeding Regional Directorate.

During and after the construction works of the project, the flow conditions of the dry streams, streams and running waters will not be changed and no interference will be done; the aquaculture living zones present at the surface water supply passages will not be harmed (no hazardous materials will be poured in the water, etc.) and everything will be done in compliance with the provisions of the **Aquacultural Resources Law number 1380**.

Nationalization of the forest zone in the Project area is not in question and pursuant to Article 17 of the **"Forest Law"** number 6831, the "**Forest Permit"** will be obtained from Bilecik Forestry Regional Directorate. Actions will run in compliance with Articles 17/3 and 18 of the Forest Law number 28976 dated April 18th, 2014.

The nationalization procedures of the areas within the project scope but out of the forest area will be actualized pursuant to Nationalization Law number 2942 and the "Nationalization Law" number 4650 enacted by its publication in the Official Gazette on May 5th, 2001 which made different amendments in the other law.

III.6 Other Issues

There are no other issues to be evaluated under this topic.

PART IV: PLOTTING THE IMPACT ZONE OF WIND POWER ENERGY PLANT AND THE DESCRIPTION OF THE PRESENT CHARACTERISTICS WITHIN THE BOUNDARIES OF THIS ZONE (*)

IV.1 Plotting the impact zone of the Project (It will be explained how and according to what the impact zone was plotted and the Impact zone will be shown on the Map, (Showing the Project area plotted by using the Plotting Method for the Power Plant area in the Electricity Generation Plants based on Wind Power.))

The power plant area information concerning the Electricity generation facilities based on the turbines to be installed within the scope of the subject project activity was complied according to the method defined under the title "Power Plant Area determination Method" published by the General Directorate of Electrical Power Resources Survey and Development Administration on May 22nd, 2009[4] . According to this, the total power plant area was estimated as about 38.544.339,25 m^2. When the power plant area was determined, the coordinate of each turbine was considered the center point of an external circumference of maximum 700 m radius, finally forming a 12- sided equilateral polygon.

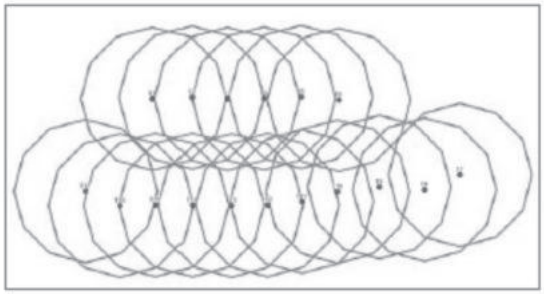

Figure – 4 Marking the turbine plots

The borders of the area where the turbines will be installed were determined by **joining the outer border lines of the polygons.**

4 http://www.eie.gov.tr/duyurular/YEK/ruzgar/ruzgar_lisans_duyuru.html

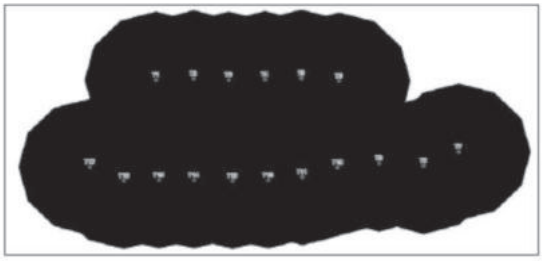

Figure – 5 The borders of the area where the turbines will be installed

A 300 m wide safety edge band was created outside the area determined by joining the outer border lines of the polygons. SAFETY EDGE BAND

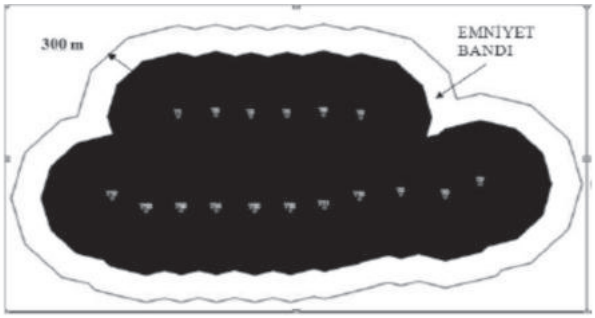

Figure – 6 Formation of the safety edge band

The corner coordinates of the safety edge band were marked (K_1, K_2, K_3, …, K_N).

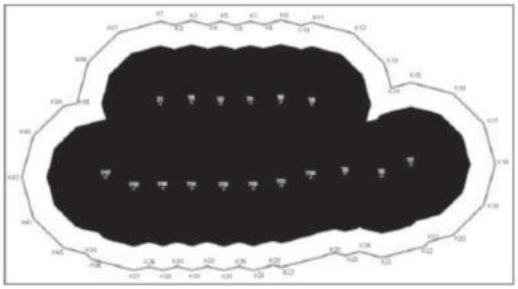

Figure – 7 Corner coordinates of the safety edge band borders

The area inside the polygon surrounded by the corner points (K_1, K_2, K_3, …, K_N) set along the outer sides of the safety edge band was defined as the "Power Plant Area" for the electricity generation facility based on wind power energy. The Power Plant Area coordinated area available in the inside cover part of the report and in Attachment 1.2.

For the turbines between T1-T15, the installation area for each turbine is about 12.769 m_2. For the turbines between T16-T17, the installation area for each turbine is about 16.900 m_2. For the turbines between T18-T32, the installation area for each turbine is about 12.769 m_2. For the turbines between T33-T36, the installation area for each turbine is about 16.900 m_2. For the turbines between T37-T46, the installation area for each turbine is about 12.769 m_2. For the turbines between T47-T48, the installation area for each turbine is about 16.900 m_2.

The 1/25.000 scale topographic map showing the area of the power plant, the safety edge band, the inter- turbine communication roads, the turbine locations is submitted attached (see Attachment 2.2).

IV.1.1. The influences exerted on the Project by the mines in the Project area and in its Vicinity, Precautionary Measures to be taken

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The letter of the Mining Affairs General Directorate number 413140 dated March 15th, 2018 is submitted attached (see Attachment 4.1). As the result of the investigation made by the Mining Affairs General Directorate, the project area was deemed suitable as 2 polygons with a total area of 999,75 ha.

In the records of the Mining Affairs General Directorate the Wind Power Energy Plant area was not changed into area closed to mining and was registered with number ER: 3281236 as the Bozüyük Wind Power Energy Plant Project special permit area (see Attachment 4.1) .

The installation of 48 turbines is planned within the scope of the Bozüyük Wind Power Energy Plant to be constructed. Within the power plant borders, to the South of the Muratdere Village, at 50 m air distance, there is a Group IV Mining (Copper- Molybdenum- Gold) enterprise that holds a company foundation and operation license registered in name of Muratdere Madencilik Sanayi ve Ticaret A.Ş. The turbines which will be installed in the power plant area will be located in two separate polygons and will not interfere at all with the mining area with operation permit. Consequently, the turbines between 1-33 will be installed in the 1st Polygon and, the turbines between 34-48 will be installed in the 2nd Polygon.

The power plant area, polygons, turbines and the licensed mining area between the two polygons is seen in **Figure 8.**

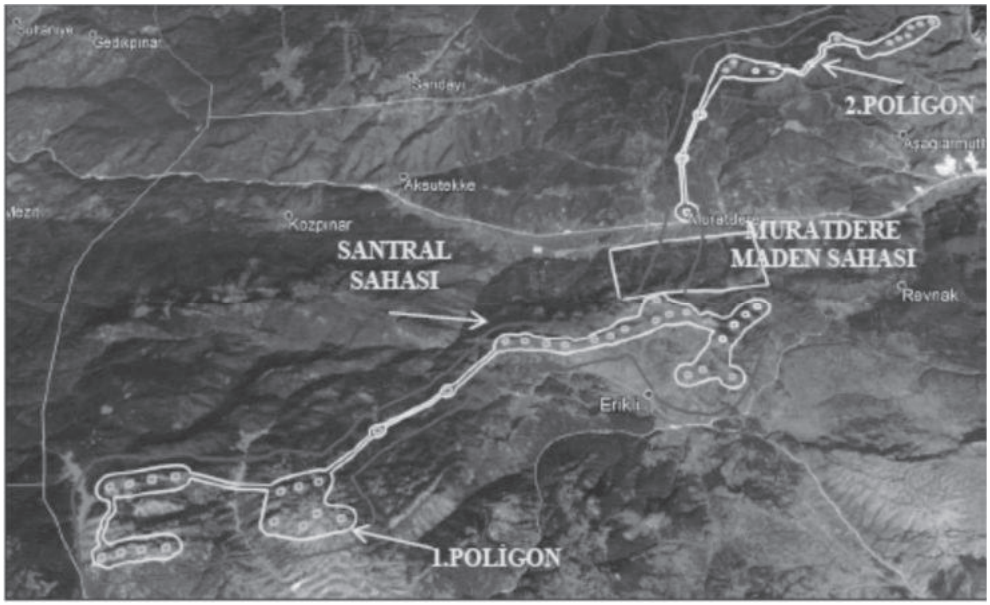


Figure – 8 Satellite view of the power plant area, polygons, turbines and of the licensed mining area between the two polygons

IV.2.1. Geological Characteristics of Wind Power Energy Plants and the EIH Line Route (the 1/25000 scale Geologic Map of the Tectonic movements, Topographic characteristics, Mineral Resources, Landslides, Unique Formations, Avalanche, Flood, Rock Falls, etc. and a Large Scale (1/5.000) Geologic Map of the Examination area, the Stratigraphic Column Sections, Geological and Geotechnical Study Reports.

(*) ***The impact zone has to be taken into consideration when the environmental characteristics of the area selected for this Project are presented. During the explanation of the mentioned issues in this part, in the Notes part of the report, it should be specified which information provided by the concerned state institutions and enterprises, research institutions, universities or other similar institutions was provided from which institution or source or related map, etc., is recorded in the document. In case the project owner is willing to submit information based on personal research, then, for that information which is subject to the authorization of those public institutions and enterprises, he/ she has to provide from the respective institutions and enterprises the certificates attesting the correctness of the information and has to add these certificates to the report.***

Geological Characteristics

According to the report and maps prepared by the Mining Technical Research Institute, the geologic and mineralogical structure of the Bilecik province consists of volcanic formations from the Cretaceous period of the second era. In general it contains eruption main stones. Apart from this, there are also sedimentary masses. The lands covered with forests have a faulted structure in general.

As the result of the rifting process that started at the end of the Permian period, the region suffered an active block faulting. As a consequence of this development, the basic volcanism has settled as blocks into the volcanic and sedimentary units as the result of diabase, radiolarite infiltrated greywacke, cherty limestone.

The region is entirely a product of transgression and regression. The pebbles resulted from transgression have ceded their place to the sandstones as the basin became deeper. Since the sedimentation in the basin was reducing from time to time, the pebbles gave way to the sandstones. The Bilecik limestone represented by the medium layer thickness micritic limestone containing chert nodules set in parallel irregularity over the Bakırköy sand stones, indicate that the basin had deepened. The Vezirhan formation created by the intercalation of marl, argillaceous limestone and micritic limestone that came transitively on this unit, point out to the continuous deepening of the basin. The old neogene alluvial deposits that covered all these units in angular discordance contain sedimentary materials in the form of pebbles and argil of grey and yellowish brown colors.

Basic Chaos (Permian and Before): In the region there is the Paleozoic old basic chaos as the oldest unit. The Karakaya Chaos discovered together with various metamorphites, acid and basic Plutons and magmatic rocks, is formed by undifferentiated lithology communities. There are several confused periods in the metamorphism that is mainly regional. The metamorphic rock groups based on thin sections are phyllite, gneiss, mica schist, marble, granite, magmatite, etc. The distribution of the spilite and limestone contained in the formation were divided in two different members.

The meta lava at the base is a spilite member, the dolomitic stones at the top are named Derbent Limestone.

a) Spilite Member (Ps): the unit formed by the under sea ultra basic lava currents and volcanic pebbles was included in the Karakaya Chaos. The meta lava which is considerably wide spread in the area, can be seen most clearly along the Hamsu streamlet. The unit that starts at the base with greyish, greenish, black color lava currents is changing towards the top. At the basic levels, hydrothermal returns and gypsum of magmatic origin can be incidentally seen.

b) Derbent Limestone: it is seen a member of the Karakaya formation. The unit that is formed by dolomitic limestone in general consists of crystallized limestone of grey, black color. The layers are massive and thick. Due to its fragility characteristic its quite frequently jointed. The Bakırköy sandstones come in angular discordance over the upper Permian – lower Triassic old defile Limestone formation. c) Cambazkaya Formation: is mentioned as member in the Karakaya formation. In general it has course texture consisting of sandstone, yellowish grey very thin cericita silica and sometimes it is has thin and medium layers with scarce calcite cement. At lower levels it has meta sandstone.

The **Bakırköy Formation (Lower Jura – Pliensbachian) jba**: It starts in the Mid Sakarya Region in theWest with the "Bakırköy Sandstone" and in the East with the "Kapıkaya Formation". These formations contain fossils which attest the Lower Jura (Mid Liassic – Pliensbachian) age. A large amount of Ammonite, Entolium, membranaceum (Nilson), Spiriferina sp., Pentacrinus sp., Algae and Bryozoa can be seen.

The Gemiciköy Formation (Mid- Miocene) Tg: this unit formed by pebbles, sandstone and mudstone and visible carbonates has a bad transverse and loose structure. At the road cut at about 10 km in the North of Bilecik the formation consists of white limestone with transverse mixed layers on a sinus filling base. These reminiscences with different structures and bad colored, although weakly adhered with argil minerals and carbons, have a dense, hard appearance with a thick and little porous mid layer.

Neogene Units: the Neogene old units, which cover these units in angular discordance, contain sedimentary materials like pebble, silt and argil.

The Vezirhan Formation (KV): the unit that starts with micritic limestone continues upwards intercalating micrite, argillous sandstone, argillous sandy loamy stone, sandstone, loamy sandstone, trass, mudstone. The lime stones are pinky colored with thin mid layers, hard, from place to place multi volute with fossil clusts and there are formations of half rounded mid sized micrite, biomicrite and sandy micrites. This unit was given the Upper Cretaceous age.

The **Üzümlü Formation (KU):** the Üzümlü Formation is a pile of middle thickness massive layers consisting predominantly of volcanic faulty sand stones. Inside the unit there are limestone, argillous limestone and lens- shaped thin layers. These are very dense up to the top layers. The formation, which is entirely soft besides the limestone lenses, is deeply differentiated and had developed by the dendritic stream water net morphology. The Üzümlü Formation gets to the top going gradually over the thin textured and thin layered flysh pile of the Gölpazarı Group. Its thicknes is maximum 800 m. The unit was given the Upper Cretaceous age.

The **Taraklı Formation (KTA):** it transits gradually the marl layers which form the top unit of the Gölpazarı Group of Upper Cretaceous age. At the lower levels of the unit, the lithologic marl and shale intercalation is predominant. In between there are thin- very thin sand stone layers. Toward the top the marl shale is decreasing and the sand stone is increasing. At the top there is no marl, the sand particles are becoming bigger towards the top and the sand stone layers become thicker – very thick and massive in structure. The layer thickness is between 3- 200 m.

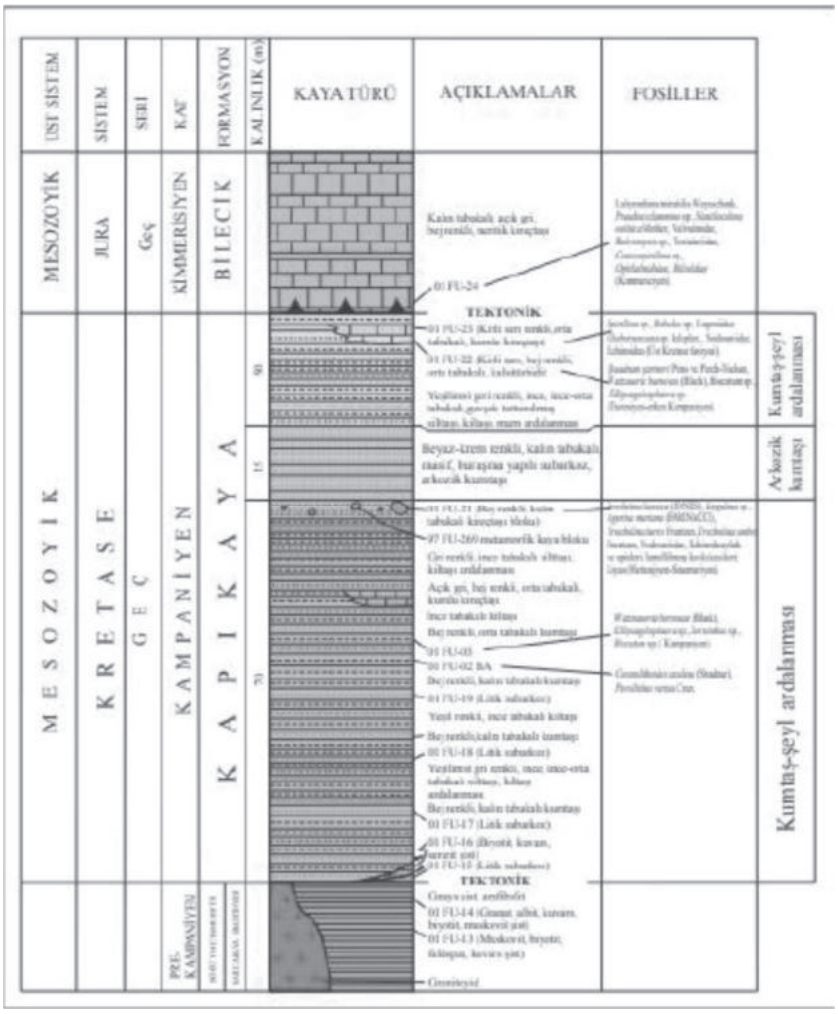


Figure – 9 Generalized Stratigraphic Section [6]

[6] http://dergipark.gov.tr/download/article-file/111557

Geology of the Project Area

The 1/25.000 scale geological map of the project area was submitted in **Attachment 2.4** and the project area consists of Permian age Marble, Upper Paleozoic- Triassic age Shist, Phyllite, marble, megabasite, etc,

Cretaceous age marble, Upper Cretaceous age Meta clusts and meta carbonates, Myocene age terrigenous clusts, Quaternary age Undifferentiated Anthropogenes.

Topographic Characteristics [7]

The lands of the Bilecik Province are hills and erosive plains split by steep and deep valleys. The edge mountains of North Anatolia, this is the start center of the Black Sea mountains, the start point of Central Anatolian platforms and the zones where the coasts and river bowl plains of the Marmara region are ending, all these are entirely within the provincial borders.

Since the Köroğlu Mountains , the second series of the North Anatolia mountains advancing from the sea coast towards the center, start up on the province land, the terrain is raising up suddenly from West to the East. This elevation is becoming voluted while descending to the South. In the North – South direction it is divided in two parts by the Bozüyük valley and the Sakarya river. The mountains continue on the both sides of this river.

The altitude of the Bilecik province above the sea level is 500 m. The altitude decreases while advancing to South East towards the Karasu valley. In fact, the altitude from the sea level of the Istasyon Quarter located in this valley goes down to 200 m.

The mountains cover about 32% of the province lands. The elevations are more in the form of hills. The highest point of the province is the Kala Mountain on top of the elevation located in the South West of the Bozüyük sub- province (1906m).

The other important elevations are Yirce Mountain (1790 m), Metristepoe (1300 m), Göldağı (1284 m), Kızılcaviran (1250 m), Osmaniye (1210 m), Ahi Mountain (1100 m), Dokuz Öküz Tepesi /1150 m), Ballıkaya (1050 m), Kızıltepe (990 m), Avdan Mountains (926 m), Paşa Moun tains (922 m), Kurudağ (805 m).

The valleys which are not very wide plains, in general stretching along the Sakarya river, cover a portion of 7% of the province lands. The valleys are formed in the final regions by the sedimentations of the fertile alluviums carried by the stream waters from the lands they are eroding while passing through the narrow and deep valleys.

The main plain areas are the Bozüyük, Gökpazarı, Osmaneli and Pazaryeri Valleys.

In the province there are very few plain that would be categorized as plateau. This kind of landforms represents only 0.5% of the province territory. The major part (59.9%) of the province lands are erosion plains. These plains which are bulging towards the hill top are split by “V” shaped valleys, causing the province lands to get a rugged terrain look.

The valleys in the province lands look like a steep and deep fissure in general. The most important one of these is the Sakarya Valley. The Göksu valley, Göynük Valley and the Karasu Valley are also important valleys.

[7] http://ww.bilecik.gov.tr/cografi-yapi

Tectonic Movements

Ther Earthquake Zone Map of Turkey prepared by the Republic of Turkey Ministry of Public Works and Settlement in year 1996 was enacted by the decision number 96/8109 of the Council of Ministers taken on April 18th, 1996. The earthquake zone map of Turkey is given in **Figure – 10**, the map of the Bilecik province and earthquake risk is given in **Figure – 10**.

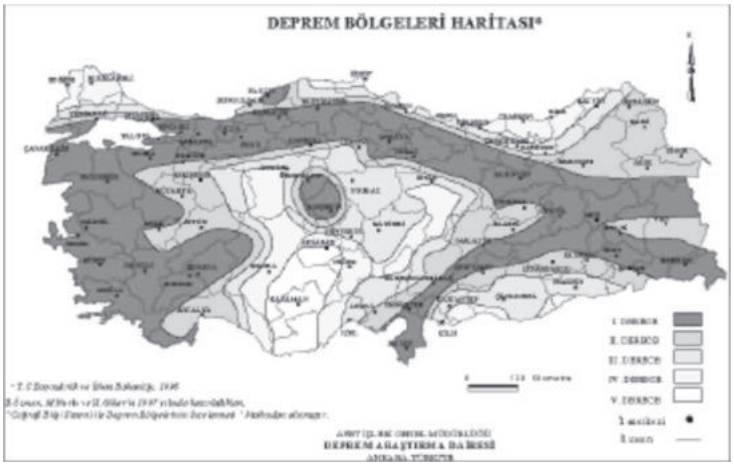


Figure – 10 Earthquake Zones Map of Turkey

Figure – 11 Map of the Bilecik Province Earthquake zone and of the Project Area

Although the Bilecik province center is a 1st level dangerous earthquake region, there was no hazardous earthquake during the last century in this province but it suffered the impact of the 1956 Eskişehir earthquake M=6.4.

Chart – 5 Earthquakes experienced in the Bozüyük sub- province

Earthquake date	Earthquake place	Depth	Intensity	Magnitude
October 20th, 2011 17:48	Bozüyük	8.8 km	II	2.7
August 18th, 2011 17.42	Bozüyük	9.4 km	II	2.6
August 2nd, 2011 13.49	Bozüyük	13.2 km	II	2.6
July 25th, 2011 17.31	Bozüyük	6.2 km	II	2.5
July 7th, 2011 17.30	Bozüyük	11.0 km	II	2.6
April 8th, 2011 12.20	Bozüyük	3.9 km	II	2.7
February 11th, 2011 13.40	Bozüyük	10.9 km	II	2.5
January 25th, 2011 10.58	Bozüyük	9.6 km	II	2.5
January 11th, 2011 15.57	Bozüyük	5.0 km	II	2.6
September 4th, 2010 17.42	Bozüyük	5.0 km	II	2.5
August 28th 2010 17.29	Bozüyük	8.5 km	II	2.8
August 21st, 2010 18.01	Bozüyük	12.4 km	II	2.5
August 14th. 2010 03.11	Bozüyük	5.4 km	II	2.8
June 4th, 2010 17.52	Bozüyük	5.3 km	II	2.7
January 22nd, 2010 16.15	Bozüyük	7.7 km	II	2.5
October 27th, 2009 12.19	Bozüyük	11.2 km	II	2.7
May 1st, 2009 16.31	Bozüyük	8.0 km	II	2.7
October 20th, 2011 17:48	Bozüyük Bozüyük	8.8 km 8.8 km	II II	2.7 2.7
August 18th, 2011 17.42	Bozüyük	9.4 km	II	2.6
August 2nd, 2011 13.49	Bozüyük	13.2 km	II	2.6
July 25th, 2011 17.31	Bozüyük	6.2 km	II	2.5
July 7th, 2011 17.30	Bozüyük	11.0 km	II	2.6
April 8th, 2011 12.20	Bozüyük	3.9 km	II	2.7
February 11th, 2011 13.40	Bozüyük	10.9 km	II	2.5
January 25th, 2011 10.58	Bozüyük	9.6 km	II	2.5
January 11th, 2011 15.57	Bozüyük	5.0 km	II	2.6
September 4th, 2010 17.42	Bozüyük	5.0 km	II	2.5
August 28th 2010 17.29	Bozüyük	8.5 km	II	2.8
August 21st, 2010 18.01	Bozüyük	12.4 km	II	2.5
August 14th. 2010 03.11	Bozüyük	5.4 km	II	2.8
June 4th, 2010 17.52	Bozüyük	5.3 km	II	2.7

Source: https://www.depremler.org/bilecik-depremleri-1 38

The Bilecik province is one of the provinces with the least incidences of floods and rock falls. Land slide incidences are seen in the Gölpazarı and Söğüt sub- provinces of the Bilecik province.

The project area takes place in the Kutahya sheet of the active fault map prepared by the Mining Technical Research Institute. The 1/250.000 scale active fault map where the Proıject area is indicated is submitted in Attachment 2.4

[8] https://www.depremler.org/yer/bozuyuk-bilecik-depremleri

The Dodurga, Eskişehir and Çizgisellik faults are located in the Project area and its surroundings. (Figures 12-13-14-15). The K151 pole is situated at a distance of about 1,6 km from the Dodurga fault . The K51 pole is situated at a distance of about 15 m from the Eskişehir fault. The K122 pole is situated at a distance of about 95 m from the Dodurga fault. The Çizgisellik fault is located on the K73 pole.

The **Eskişehir Fault Zone**: the West North West – East South East general trending faults bordering the Eskişehir valley at North and South were named as the Eskişehir Fault Zone. (Şaroğlu et. 1987). These faults are characterized as slope slip normal faults with falling northern blocks. The faults in the North of the zone expanding on a 50 km long area are East – West trending. The South block also in these faults fell down. Şaroğlu et. (1987). They pretend that the Eskişehir valley is a basin that evolved under the normal control of these faults and that the change of faults from East – West to North West – South East could be explained by right direction strike- slip faulting. The Researchers are pointing out that, due to the impact of these faults on the Quaternary old units and the 1956 Eskişehir earthquake, these are active faults.

The **Inönü – Dodurga (Eskişehir) Fault Zone**: The faults expanding between Inönü- Dodurga on an area approximately 30 Km long and 15 km wide, displaying East- West and North West – South East trending were named as the Inönü- Dodurga fault zone. (Şaroğlu et. 1987), The faults that are morphologically bordering the Inönü valley in the South show East – West trending; whereas the faults between Inönü- Dodurga show North West – South East trending. The East – West trending faults around Inönü are characterized as slope slip normal faults with fallen northern blocks. On the other side, the North West – South East trending faults are right direction strike- slip faults. (Şaroğlu et. 1987), it is mentioned that some of the faults are active and some are possible active. [9]

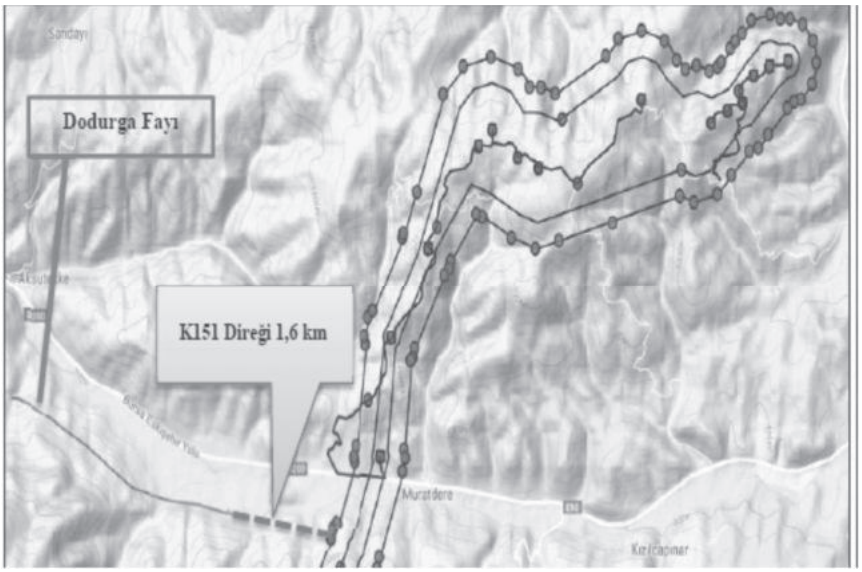


Figure - 12 The active faults in the Project area and its close vicinity [10]

[9] https://deprem.afad.gov.tr/depremdetay?eventID=402978

[10] (http://yerbilimleri.mta.gov.tr/anasayfa.aspx)

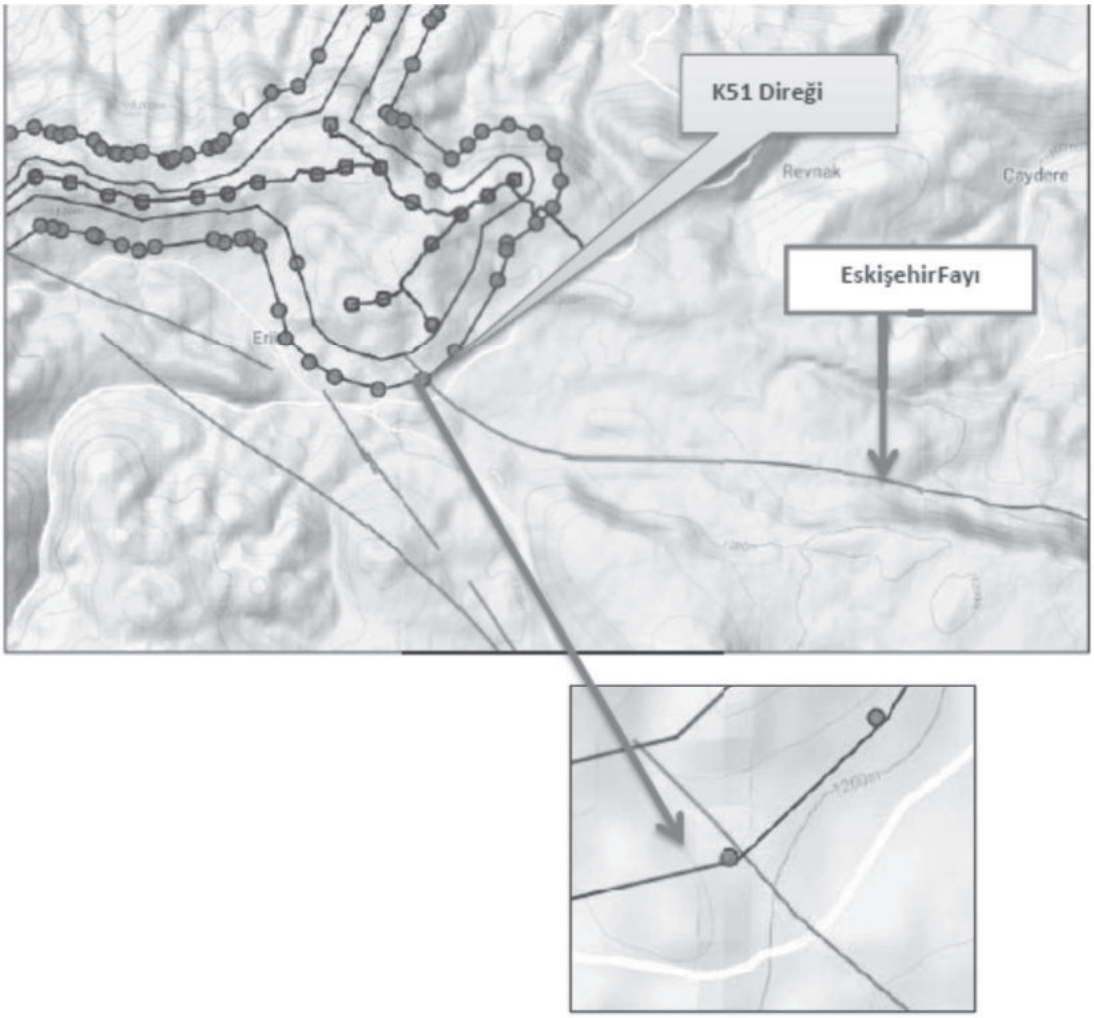


Figure – 13 Distance between the K51 Pole and the Eskişehir fault

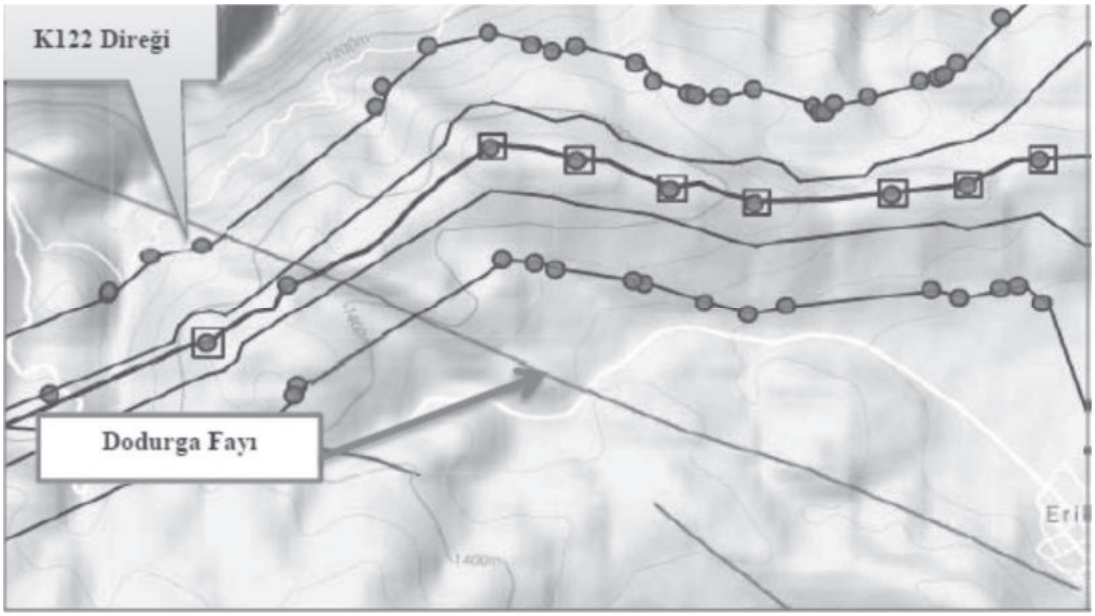


Figure – 14 Distance between the K122 Pole and the Dodurga fault

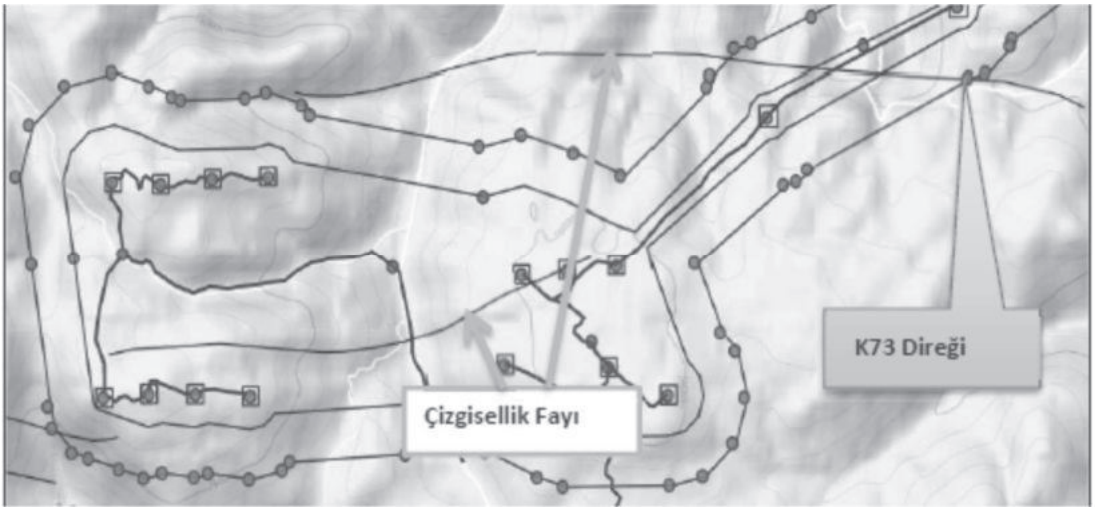


Figure – 15 Distance between the K73 Pole and the Çizgisellik fault

The biggest earthquakes experienced from year 2008 until today in the Bilecik province are given in the chart below.

Chart – 6 The biggest earthquakes experienced in the Bilecik province

Earthquake date	Earthquake place	Depth	Intensity	Magnitude
September 3rd, 2017 06.23	Center	5.0 km	III	3.5
September 3rd, 2017 06.23	Pelitözü	5.5 km	III	3.7
January 1st, 2016 11.11	Tozman Inhisar	5.0 km	IV - V	4.2
June 28th, 2014 04.39	Koyunlu Inhisar	5.0 km	III	3.8
August 16th, 2013 19.59	Goynucek Bozuyuk	8.0 km	III	3.1
August 6th, 2013 22.18	Camlıyayla Bozuyuk	7.7 km	IV - V	4.0
March 7th, 2012 16.37	Pelitözü	3.8 km	III	3.6
December 23rd, 2011 20.42	Akpınar Bozuyuk	8.1 km	III	3.0
July 12th, 2011 081233	Bilecik	5.2 km	III	3.0
July 11th, 2011 190912	Bilecik	5.0 km	IV - V	4.7
July 11th, 2011 19.29	Yarhisar	2.9 km	III	3.1
July 10th, 2011 00.57	Osmaneli	7.3 km	III	3.2
July 9th, 2011 22.51	Osmaneli	5.0 km	III	3.2
October 31st, 2010 06.44	Osmaneli	5.0 km	III	3.1

There is no decision regarding any zone subject to disaster (zone forbidden to construction and occupation) taken by the Council of Ministers within the scope of the Law number 7269 for t Aids to be Made due to Disasters Affecting the Public Life. Additionally, the subject area is not among the places planned to be utilized within the scope of the same law. The institutional opinion of the Bilecik Governorship Natural Disasters and Emergency Regional Directorate is submitted attached **(see Attachment 4.9).**

The construction of any kind of building in the subject project has to be compliant with the principles of the "**Regulations concerning the Construction of Buildings in the Disaster Regions**" and the provisions of the **"Regulations concerning the Construction of Buildings in the Earthquake Zones**".

Concerning the construction of any buildings within the scope of the subject project, the geologic/ geotechnical reports basic for the development plan to be prepared pursuant to Circular Letter number 10337 dated August 19th, 2008 of the Ministry of Public Works and Settlement (General Directorate of Natural Disasters) and the authority approval number 13171 dated November 11th, 2008 will have to be attested by the Bilecik Regional Directorate of Environment and Urbanization in line with the Decree having the force of Law number 644 dated July 4th, 2011 about the Organization and Duties of the Ministry of Environment and Urbanization.

Mineral Resources [11]

The province of Bilecik is located in the South Easterm part of the Marmara Region, at the intersection point of the Marmara, Black Sea, Central Anatolia and Egean Regions. In Bilecik ,which is situated in the Sakarya Zone tectonic assembly, and in its surroundings there are different rock types exposed since the Paleozoic until nowadays. In these types of rocks there are metallic mines such as Gold(Au), Molibdenum (Mo), Manganese (Mn), Antimony (Sb), Wolfram (W), and also industrial raw materials deposits and occurrences.

[11] http://www.mta.gov.tr/v3.0/sayfalar/bilgi-merkezi/maden_potansiyel_2010/Bilecik_Madenler.pdf

It can be seen that the mineral deposits and occurrences around the province are concentrating around the Söğüt and Bozüyük sub-provinces. The Söğüt- Korundanlık gold occurrence was determined to be of 1.7gr/ton Au grade and a visible reserve of 15.695 tons. The Bozüyük- Muratdere (Cu-Mo) area is of grade equivalent to 25% Cu. A reserve of 5.265.526 ton Cu+Mo was identified in the area. The Söğüt- Dudal Wolfram area has probably a reserve of 10.000 tons, containing 0.4% WO_3. In the past years the Manganese deposits and occurrences in the South and South West of the province produced 1.000 tons with an average Mn grade of 19.45%.

All across the province there are a lot of industrial raw material deposits and occurrences which have been and are still exploited. One of these is the Bozüyük – Söğüt Feldspar zone. The total alkaline content of the zone exploited in the past years was 9% and the probable reserve determined was 177.310 tons. Another deposit operated from time to time is the Söğüt-Yeniköy Kaolin deposit. The grade of this area is 13-18% Al_2O_3 and 0.2 – 1.7% Fe_2O_3. The total probable reserve was determined as 1.000.000 tons. The other clay area is located at Söğüt- Inhisar- Sakızbeli- Tilkili- Ceylan- Ceyhan, Küre- Avdan, Çaltı- Akçaalan and Yakacık.

The Al_2O_3 content varies between 9.38- 33% and the Fe_2O_3 between 1-16%. The reserves are 10.618.072 tons visible+ probable, 5.800.000 tons probable and the deposits are still exploited partially. In the province there is Manganese mineralization in two places, Bozüyük – Örenköy and Eceköy.

The Mn content at Örenköy is 47-48%, at Eceköy it is 39.62%. The Örenköy probable reserve was estimated as 575 tons and the Eceköy reserve as 1.050 tons. In the region there are marble deposits considered as an important industrial raw material. The total reserves of these marbles named Bilecik dusty pink , Gölpazarı beige and Söğüt beige, were estimated to be 406.000.000 cubic meters. The biggest reserve of 400.000.000 cubic meters is in the Gölpazarı – Şahinler village area. In this area the marble is beige, consists of micritic calcites and in the cracks and hollow parts of the marble sparitic calcite fillings can be observed. The hardness is 4, concentration is 2.74g/cm^3, porosity is 0.4%. The marbles in the Taşçılar and Çukurören zones display dusty pink veins in the pink/beige pulp and also lens formations. The hardness is 4, concentration is 2.72g/cm^3, porosity is 0.659%. The marble in the Söğüt area consists of cryptocrystalline calcite with micritic texture and from dolomite crystals. The hardness is 3-4, concentration is 2.73g/cm^3, porosity is 0.659% and the geologic reserve was estimated as 5.000.000 m^3.

GOLD (Au)
Söğüt – Korudanlık occurrence
Grade : 1.17% gr/ton Au
Reserve : 15.695 Tons visible reserve

COPPER – MOLYBDENUM (Cu+Mo)
Bozüyük – Muratdere zone
Grade : 0.25% Cu equivalent grade
Reserve : 5.265.526 Tons (Cu+Mo) reserve estimated

FELDSPAR (Fld)
Bozüyük – Söğüt zone
Grade : 9% total alkali content
Reserve : 177.310 Tons probable reserve estimated, deposits were exploited in the past

CALCITE (Cc)
Around province center
Grade : 95% $CaCO_3$
Reserve : -

KAOLIN (Kao)
Söğüt - Yeniköy zone
Grade : 13-18% Al_2O_3 and 0.2 – 1.7% Fe_2O_3.
Reserve : 1.000.000 Tons probable reserve estimated, deposits are exploited occasionally

CLAY(Clay)
Söğüt- Inhisar- Sakızbeli- Tilkili- Ceylan- Ceyhan, Küre- Avdan, Çaltı- Akçaalan,Yakacık zone
Grade : 9.38-33% Al_2O_3 and 1 – 16% Fe_2O_3.
Reserve : 10.618.072 Tons visible + probable reserve estimated, deposits still partially exploited

MANGANESE (Mn)
Pazaryeri- Güde, Bahçesultan zone
Grade : 19.45% Mn
Reserve : Past years' production about 1.000 tons

MAGNESITE (Mag)
Bozüyük-Örenköy and Eceköy zone
Grade : 47-48% MgO (Örenköy), 39.62% MgO (Eceköy)
Reserve : 575 Tons probable (Ören), 1.050 tons probable (Eceköy)

MARBLE (Mr)
Taşçılar and Çukurören Villages- BILECIK PINK – DUSTY PINK
Grade : dusty pink veins in the pink/beige pulp and also lens formations. The hardness is 4, concentration is 2.72g/cm^3, porosity is 0.659%.
Reserve : 1.000.000 m^3

Gölpazarı – Şahinler village –GÖLPAZARI BEIGE
Grade : consists of micritic calcites and in the cracks and hollow parts of the marble sparitic calcite fillings can be observed. The hardness is 4, concentration is 2.74g/cm^3, porosity is 0.4%.
Reserve : 400.000.000 m^3

Söğüt – SÖĞÜT BEIGE MARBLE
Grade : consists of cryptocrystalline calcite with micritic texture and from dolomite crystals. The hardness is 3-4, concentration is 2.73g/cm^3, porosity is 0.659%.
Reserve : 5.000.000 m^3 geologic reserve.

WOLFRAM (W)
Söğüt- Dudaş zone
Grade : 0.4% WO_3
Reserve : 10.000 tons probable reserve.

The Mining Map of the Bilecik province was given in Figure- 16.

Figure- 16 Mining Map of the Bilecik province

Landslide, Unique Formations, Avalanche, Flood, Rock fall

The landslide cases are very intensively observed in the Inegöl and Gemlik sub-provinces. Our province is one of the provinces where rock falls are least experienced. The floods in our province which is situated in the Marmara, Susurluk and Sakarya basins, are observed in the Yenişehir, Karacabey, Inegöl and Mustafa Kemal Paşa sub- provinces. The avalanche risk exists in the Uludağ 2nd Development Ski Center which is one of the important income sources of our province. This risk increases in the zones with higher slopes due to the contribution of our skiers and snowboarders. [12]

The sliding, flowing and creeping movements in the project area and its close vicinity were studied in detail in Figure- 17 and Figure- 18. According to these shapes, there are no sliding, flowing and creeping movements inside the project area. The inactive land slide areas are at an air distance of 78,5 km from the power plant area and the active landslide areas are at a distance of 15 km from the power plant area.

The project area is located on the Ankara sheet of the 1/500.000 scale Landslide Map of Turkey prepared by the Mining Technical Research Institute and the 1/500.000 scale Landslide Map on which the project area is indicated is submitted in **Attachment 2.4.**

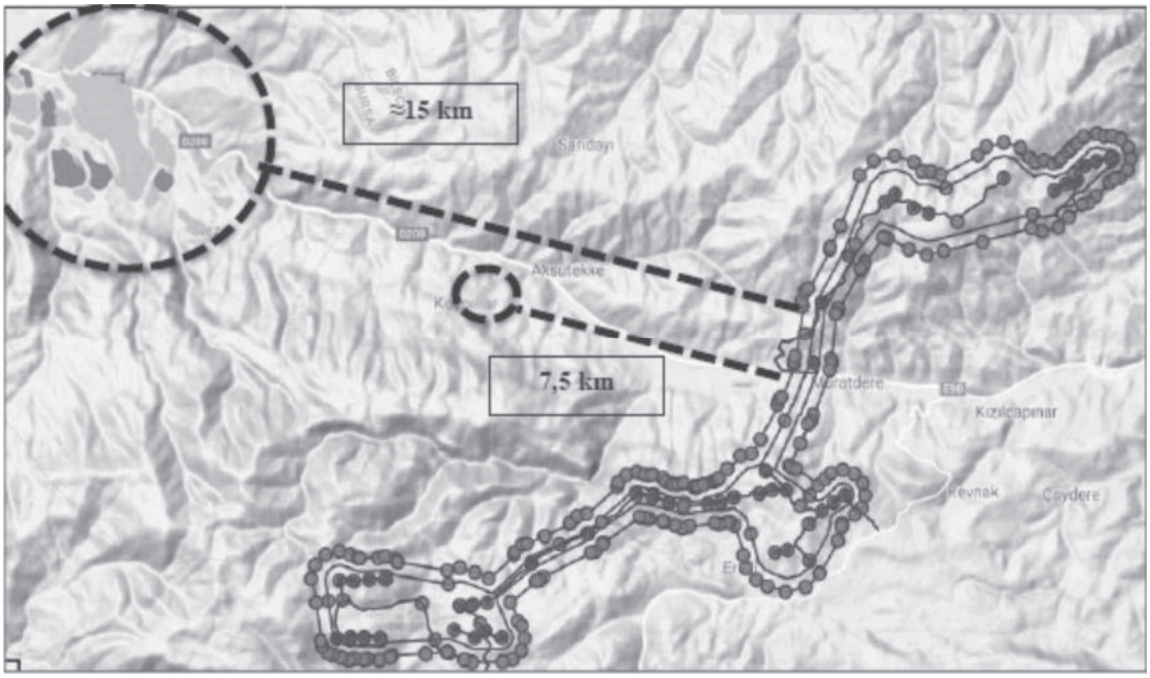


Figure-17 Situation of the Project area and its close surroundings (1)

[12] http://www.academia.edu/6219589/%C%B0LLER%C4%B0N_AFETSELL%C4%B0%C4%9%C4%B0

Figure-18 Situation of the Project area and its close surroundings (2)

IV.2.2 The current and planned Hydrologic and Hydro- geologic use of the surface and underground Water Resources (Drinking, Use, Plants watering, Electricity generation, Dam, Lake, Pond, Aquaculture production, Waterway Transportation facilities, Tourism, Water and/ or coastal use for Sports and Similar Purposes, Other uses

Surface Waters [13]

Stream waters

The stream waters flowing within the borders of the Bilecik province are shown in Chart 7. The Sakarya River with total length of 824 km is the most important stream water of the province.

Chart 7 – Stream waters of the Bilecik Province (State Hydraulic Works, 2016)

STREAM WATER NAME	TOTAL LENGTH (km)	LENGTH WITHIN PROVINCE BORDERS (km)	DEBIT m3/sec)	STREAM OF WHICH IT IS THE AFFLUENT	PURPOSE OF UTILIZATION
Sakarya river	824 km	80 km	= 100		Irrigation, energy
Karasu streamlet	65 km	65 km	= 3,6	Sakarya	
Söğüt stream	= 25 km	=25 km			
Sorgun stream	= 20 km	=20 km			
Karapınar stream	= 13km				
Değirmen stream	= 6 km				
Göksu streamlet	= 60 km	= 25 km			
Kıralbağı stream	= 16 km				
Akçay stream	= 13 km				

Source: Bilecik Province Environment Situation Report, 2016

There are aquaculture farms (mainly trout) in the streamlet spring area of the Karasu streamlet in the sub- province Bozüyük of the Bilecik province. In this region there are 5 aquaculture farms where production is based on the water supplied from the Karasu streamlet.

Chart 8 – Aquaculture Facilities

SUB- PROVINCE	VILLAGE	FACILITY NAME	CAPACITY (tons/year)
_BOZÜYÜK	SARAYCIK	ENTEG.BALIKÇILIK SAN. TIC. LTD.ŞTI - 1	600
BOZÜYÜK	BOZALAN	ENTEG.BALIKÇILIK SAN. TIC. LTD.ŞTI - 2	900
BOZÜYÜK	ÇAYDERE	MERSU SU ÜRÜNLERİ ve YEM SAN. TIC.A.S.	120
BOZÜYÜK	KARASU	SERHAT ALABVALIK ÜRETİM SAN. TIC. LTD.ŞTI.	52
CENTER	BOZALAN	MENETREL GIDA SANÇ TIC. LTD. ŞTI.	600

Source: Bilecik Province Environment Situation Report, 2016

[13] Bilecik Province Environment Situation Report, 2016

Natural Lakes, Ponds and Reservoirs [14]

Çerkeşli Lake located within the Bilecik province borders is the only natural lake of the province. The total surface of the natural lakes of the province is 4790 ha. The ponds and dam lakes used for irrigation purposes are shown in Chart 9.

Chart 9 Irrigation lakes existent in the Bilecik province (State Hydraulic Works, 2016)

Pond name	Type	Pond volume (m^3)	Irrigation area (net) ha	Purpose of utilization
Darıdere (Dodurga) Dam	Dam	19.210.000	3103	Irrigation
Günyurdu Dam	Dam	7.400.000	757	Irrigation
Kızıldamlar Dam	Dam	10.700.000	1856	Irrigation
Kurtköy Pond	Pond	2.579.000	561	Irrigation
Dereboyu (Zeyve) Pond	Pond	1.260.000	343	Irrigation
Borçak Pond	Pond	618.000	74	Irrigation
Yenipazar Pond	Pond	2.000.000	432	Irrigation
Selöz Pond	Pond	847.011		Irrigation

Source: Bilecik Province Environment Situation Report, 2016

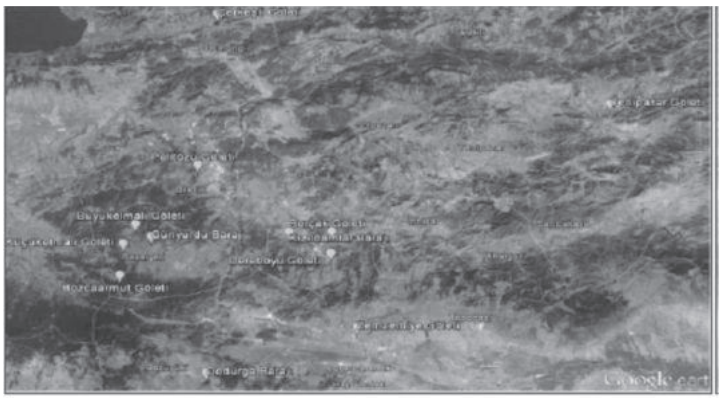


Figure- 9 Dam lakes and Ponds in the Bilecik Province

Subterranean Waters

The total quantity of water supplied from the subterranean waters in the Bilecik province is 45,90hm^3/year.

Figure- 10 Subterranean Water potential of the Bilecik Province (State Hydraulic Works, 2016)

Name of the Source	hm^3/year
Subterranean water	45,90

Source: Bilecik Province Environment Situation Report, 2016

[14] Bilecik Province Environment Situation Report, 2016

Providing the supply of subterranean water in the Gölpazarı and Osmaneli sub-provinces of gthe Bilecik province is much easier and widely used than in the Center sub- province and other su provinces. The purpose of the water utilization in the province is irrigation and industrial processes. The consumption of subterranean water is excessive mainly in the marble mining.

Levels of Subterranean water [15]

The static levels of the subterranean water are varied depending on altitude and topography. Although the water level in the drilling wells displays a few meter variances due to the yearly precipitation amounts, no important change has been observed.

The aquifers noticed in the Bilecik Province center which is not rich in subterranean waters, are the Quaternary Age alluviums and the Jura Age limestone seen along the Karasu Streamlet. The alluvium thickness varies between 12- 20 m and the wells drilled provided a productivity of 20- 52 l/s. The Bilecik limestone is broken, fissured and has melting gaps, displaying weak aquifer characteristics. According to the results of the chemical analysis of the water taken from the open drilling wells, the hardness level of the water is varying between 28,5- 48 FS0 (medium hard). The alluvium aquifers are little salty, with little Sodium, the water of the limestone is little salty with medium Sodium, being classified as C2S2 and C3S1.

The most important aquifers of the Bozüyük plain in the Bilecik province are the flysch and limestone consisting of the Neogene Age sand stone – pebble intercalation seen along the Kocadere Valley. The alluvium thickness varies between 8- 26 m. The drilling wells opened in alluvium provide in average 8 l/s, whereas the drilling wells opened in the 200 m thick Neogene flysch provide 15-20 l/s. The subterranean water of the plain are recharging from the precipitations in the recharge area and from the surface flow. The safe yearly reserve of subterranean water estimated in the plain is 9,3x106m^3/year. According to the results of the chemical analysis of the subterranean water samples taken from the opened drilling wells, the category of the water is C2S1. The subterranean water of the plain is used by many factories as consumption water and industrial water.

The aquifer units in the Gölpazarı plain are Quaternary Age alluviums and Paleocene Age flysch and lime stone. These carry unconfined and confined aquifer characteristics. The alluvium thickness varies between 5 -25 m. The water obtained from the drilling wells opened in the plain is 4-50 l/s. Due to the confined characteristics some of the wells can be artesian wells. The subterranean water in the aquifers is recharging by filtration from precipitations in the recharge area and the surface flow in the drainage area. The reserve of subterranean water estimated in the plain is 3,5x106m^3/year and the yearly safe reserve estimated is 2,45x106m^3/year.

According to the results of the chemical analysis of the subterranean water samples taken from the opened drilling wells, the category of the water is C2S1. The subterranean water of the plain is used for agriculture purposes as irrigation water by the Gölpazarı, Çımışkı, Arıcaklar Irrigation Cooperatives.

[15] Bilecik Province Environment Situation Report, 2016

The 20 thick aquifer alluviums spreading along the Sakarya valley in the Bilecik province carry aquifer characteristics. They are recharging directly from the Sakarya river. 60 m- 100 l/s subterranean water can be obtained from the opened drilling wells. The subterranean water reserves determined along the Sakarya river are 10 x106m^3/year at Inhisar- Yenipazar, 23,5x106m^3/year at Bezirhan- Bakirköy – Karaağaç, 4x106m^3/year in the Osmaneli plain. The waters are in the irrigation water category C2S1. The subterranean water of he valley is used for agricultural irrigation purposes as pumped irrigation.

In case any negative impact on the fountain, spring, etc. water units and on the subterranean water would be determined the damages will be compensated by the enterprise owner.

The chemical substances used within the activity scope and which would probably create hazardous residues, will be stored in an impermeable space and, in case of a probable leakage, any procedure and activity that will be initiated to eliminate the environment pollution will be under the enterprise owner's responsibility.

The provisions of the "**Regulations for the Protection of the Water against Pollution and Spoilage**" (amendment number 29363 dated May 22nd, 2015) enacted by its publication in the Official Gazette Issue number 28257 dated April 7th, 2012, and of the **"Law for the Protection of the Subterranean Waters"** number 167, will have to be complied with in the frame work of the project.

The provisions of the **"Regulations for the Protection of the Water Basins and the Preparation of the Management Plans"** prepared for the management and protection of the subterranean waters and enacted by its publication in the Official Gazette Issue number 28444 dated October 17th, 2012, will have to be complied with in the frame work of the project.

Seas

The province of Bilecik has no sea coasts.

Project area

In the North West direction of the power plant area there is the Dereköy Dam at 7 km air distance, in the South East direction there is the Tüfekçikonak Pond at 9 km air distance and in the South West direction there is the Çamlıca Pond at 18 km air distance.

In the North East direction of the power plant area the Sarısu Streamlet is flowing continuously at 10 km air distance, in the North direction there is the Sorgun Streamlet at 10 km air distance and in the North West direction there is the continuously running Aksu Stream at 2,5 km air distance.

The water resources around the power plant area and their approximate distance are shown in Figure- 20.

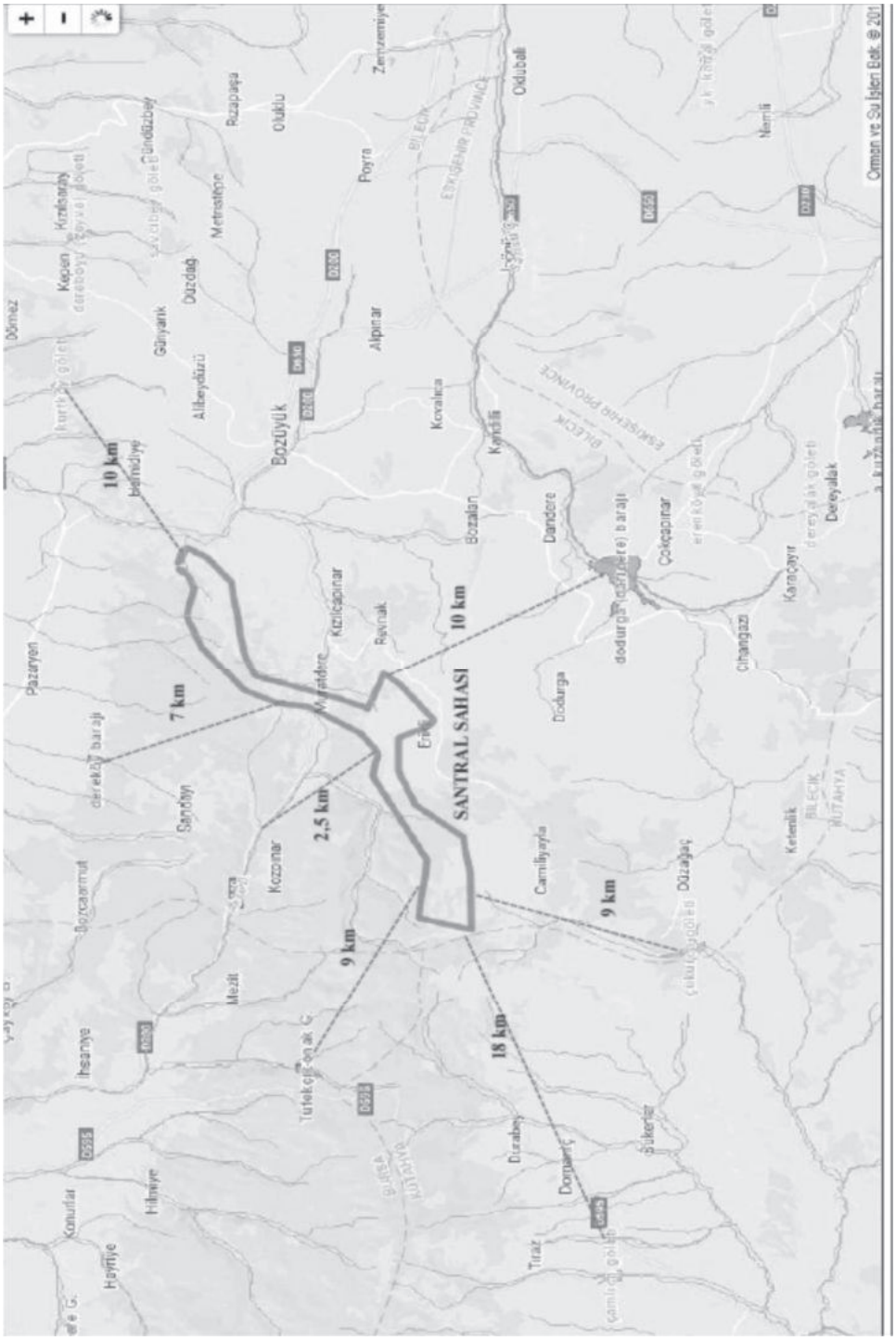


Figure 20 – The map of the water resources in the close surroundings of the project area.

The following are located within the borders of the power plant

a) There are two safety band areas which include the drinking water springs of the villages in the Bilecik province. The 1st safety band drinking water consists of the drinking and irrigation water sources (Esenkaya springs, Bıçkı deresi springs, Gül Springs, Kanalık deresi springs, Mezarlık deresi springs, Mandıra deresi springs and Erikli water springs) coming to the group villages (Muratdere, Aksutekke, Delielmacık, Ormangözle, Kızılcapınar, Lower Armutlu group villages, Camiyayla, Göynüçek, Düzağaç, Dombayçayırı Group Villages and Erikli, Dodurga group villages) and in the 2nd safety band there is the drinking and irrigation water coming for the Ormangözle and Revnak villages.

b) The main transmission pipes and installations of the drinking and irrigation water coming from the sources of the group villages

c) Delielmacık village drinking water reserve tank, Delielmacık village sewage pipes and installations

d) Çamyayla village two drinking and irrigation water sources, reserve tank and their transmission pipes, distribution net and installations.

In line with the project scope it is not permitted to approach the drinking and irrigation water sources more than 100 on the right and left sides, the reserve tanks and sewage installations more than 60 m on the right and left sides and the distribution and the transmission and distribution lines more than 10 m on the right and left sides.

The following are under the responsibility of Bilecik Regional Special Administration .

* Bozüyük 53-2 control section number of the RT Highways – Aşağıarmutlu – Çamyayla Village road
* Bozüyük 34 control section number of the RT Highways - Çamyayla Village road
* Bozüyük 32 control section number of the RT Highways - Delielmacık Village road
* Bozüyük 33 control section number of the RT Highways – Muratdere Village road
* Bozüyük 26 control section number of the RT Highways – Ormangözle- Erikli - Camiliyayla Village road
* Bozüyük 35 control section number of the RT Highways - Erikli Village road

Before the construction start up, a company letter of undertaking, attested by the Notary, stating that related to the sections where the subject activity area intersects the roads in the Bilecik Province Special Administration network or the entry – exit portions, the company engages to provide the curb radius and width deemed appropriate by the Province Special Administration, to build art works and reinforced concrete channels, not to build electricity poles, etc. on the road platform slope and wrenches, to make all the displacements required within the scope of the road standards development works(widening, maintenance repair, etc.) to be done by the mentioned institution and to to compensate any damage of the road infrastructure and superstructure caused by the works, will be submitted to the Bilecik Province Special Administration Directorate of Roads and Transportation Services and a protocol will be concluded between and signed by the Directorate of Roads and Transportation Services and the project owner company concerning the procedure to be followed regarding the execution of the undertaken jobs.

During the works to be done within the scope of the project subject activity, the roads under the responsibility of the Bilecik Province Special Administration will not be damaged, if any damage occurs the the road would be recovered to the previous state.

During the works to be done within the scope of the activity, everything will be done according to the 1/100.000 scale Bilecik Environmental Plan and pursuant to the provisions of the Plan.

The opinion of the Bilecik Province Special Administration is sub mitted attached **(see Attachment 4.10)**

There will be no intervention, including displacements, to the streams in the power plant area, the the water bed section will not be narrowed, and there will be no action intended to spoil the flow regime, no materials or residues will be stored in any way in the stream beds and no permanent facilities will be installed there.

Considering the flood risk of the terrestrial water sources in the project area, the places where the turbines will be installed will be located outside the stream beds and the suitable opinion of the State Hydraulic Works 3rd Region Directorate will be asked regarding the measures to be taken against floods and the drainage works.

The suitable opinion of the State Hydraulic Works 3rd Region Directorate will be asked regarding the art works to be made in case of stream passages occurring on the itinerary planned as transportation road.

The contact with the ground of any solid and fluid residues, resulting both during and after the construction, should be cut, impermeability should be provided and the elimination proceedings should be executed pursuant to the provisions of the concerned regulations.

All the works to be done within the project scope must be compliant with the provisions of the Prime Ministry Circular letter number 2006/27 published with the title **"Stream beds and Floods"** dated September 9th, 2006, number 26284.

Actions will be compliant with the provisions of the "Water Pollution Control Regulations" enacted by their publication in the Official Gazette issue number 25687 dated December 31st, 2004 (amendment number 26786 dated February 13nd, 2008 enacted by the publication of the "Regulations for amending the Water Pollution Control Regulations" in the Official Gazette Issue number 27537 dated March 30th, 2010).

Actions will be compliant with the provisions of the Regulations for amending the "**Surface Water Quality** Management Regulations (Surface Quality Regulations) enacted by its publication in the Official Gazette Issue number 29327 dated April 15th, 2015.

Actions within the project scope will be compliant with the provisions of the "Regulations for the Protection of the Drinking- Utility Water Basins" Number 30224 dated October 28th, 2017.

IV.2.3. Soil characteristics and Status of Utilization (Classification of the Land usability of the soil, Erosion, Pasture, Field, Current utilization status of the soil, etc.)

Bilecik Province Land Assets

According to the Bilecik Province statistical data the land utilization changes between years 2000 – 2006 were noted as increase mostly in the artificial areas and as decrease in the agricultural lands. Decreases were noted in the forest zones and semi natural areas, whereas the water masses increased. An increase was observed in the artificial areas due to the development of mining. Besides, the increase in the number of new construction is an indicator of new settlements in town. Although the economy of the Bilecik province is based on agriculture, a decrease of the agricultural areas was observed as a result of opening the agricultural lands to construction. Apart from this, although both the coniferous and the broad leafed forests were reduced, the new reforestation areas provided the continuance of the forests. The pasture lands evaluated within the agricultural lands were 2.855,27 ha in year 2000, whereas in year 2006 they are 2.678,88 ha."

Chart – 11 Bilecik Province the Distribution of Land Assets

The Distribution of Land Assets	Area (Da)	%
Agricultural Zone	1.381.990	32.09
Field – Pasture Zone	57.323,4	1,33
Forest, Settlement and Unsuitable for agriculture Zones	2.867.686,6	66,58
TOTAL	**4.307.000**	**100**

Source: Bilecik Province the 2016 Province Briefing of the Food, Agriculture and Livestock Directorate

Characteristics of the Soil in the Bilecik Province

The soil in the region is generally grouped in two main groups. One of these is the Zonal soil which has been formed under the effect of important elements of soil formation such as climate, vegetation, time and mass structure. The other one is the Azonal soil which is out of the effect of these elements. The zonal soils are on the slopes, whereas the azonal soil can be seen on the flat and wide, alluvial plains. The slopes rising on both sides of the alluvial plains crossed by the Sakarya River are covered by detrited soil. The inclination of the alluvial lands is between 1 and 2. The inclination of the lands on the Northern and Southern slopes of the plains in some places is more than 40%. The zonal soil in the region displays an increasing inclination while advancing from the river banks toward inland parts. The Brown Forest lands cover the largest area. These can be seen ob the mountain slopes and plains in the Söğüt, Yeniköy, Gölpazarı neighborhood . The western part of the region is covered with grey reddish podzol. The alluvial soils in the plains of the Bilecik province can be studied in two groups. The first group is formed by the hydromorphological soils which are quite deep. These are young soils created on the banks of Sakarya River. They are azonal soils very favorable for agriculture and horticulture. The Neogene sediments filling the Graben zone and the secondary collapse zones in the East- West direction can be seen as well. [17]

[16] Bilecik Province Environment Situation Report, 2016

[17] 2009 Bilecik Province Environment Situation Report

Chart – 12 Land categories of the lands in the Bilecik province based on their utilization for year 2015

LAND CATEGORY	SURFACE (ha)	RATIO (%)
CATEGORY I LANDS	13.724	3,19
CATEGORY II LANDS	18.850	4,38
CATEGORY I II LANDS	34.864	8,09
CATEGORY VI LANDS	38.452	8,93
CATEGORY V LANDS	----	---
CATEGORY VI LANDS	64.314	14,93
CATEGORY VII LANDS	254.432	59,07
CATEGORY VIII LANDS	6.064	1,41
TOTAL	**430.700**	**100**

Source: 2015 Bilecik Province Environment Situation Report

Map and characteristics of the Land Assets

The 1/100.000 scale map indicating the project area is submitted in **Attachment 2.5.** The 1/100.000 scale map indicating the areas where the turbines will be installed within the project scope is submitted in Chart 13.

Chart – 13 The turbine installation areas according to the 1/100.000 scale map of Land Assets

TURBINES AND SWITCHYARD	SURFACE
T1 – T2 – T3 – T4 –T5 – T6 –T7 T8- T9 – T10 – T11 – 12 – T 13 – T14 – T15 - T16 – T17	N 24 3 O VII es
T18 – T19 – T20 – T21 – T23 – T24 –T25 –T26 – T27 – T28 –T29, Switchyard area	M 15 t 3 K VI es
T30 –T31 – T32 T33 –T42	M 19 t 4 O VII es
T34 – T35 – T36t41	N 20 3 O VII se
T37 – T41 – T43 – T44 – T45 - T46 –T47 –T48	N 30 F VII se
T38 – T39 – T40	N 16 3 H VI es

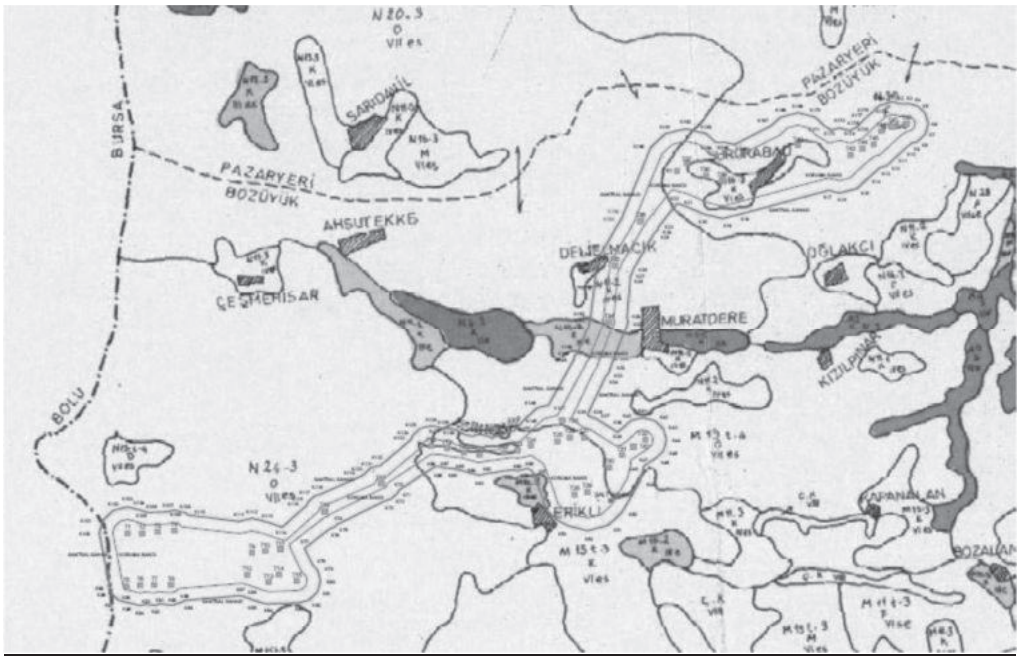


Figure 21 - Map of the Project Area and Land Assets

Below are the explanations of the areas given in Chart 13

N 24 3 O VII e s:

N : Non- calcareous Brown Forest Soil (BTG)
24 : Very shallow (0-20 cm), inclination more than 30% (TOK)
3 : Severe water erosion (ERZ)
O : Forest (SAK)
VII : Lands not suitable for soil utilization AKK)
e : Slope and erosion damage (ATS)
s : Soil incompetence (stony, salty and alkaline) (ATS)

M 15 t 3 K VI e s:

M : Brown Forest Soil (BTG)
15 : Shallow (20-50 cm), inclination 12 - 20% (TOK)
t : Stony (DTO
3 : Severe water erosion (ERZ)
K : Dryland agriculture (Fallow) (SAK)
VI : Lands not suitable for soil utilization AKK)
e : Slope and erosion damage (ATS)
s : Soil incompetence (stony, salty and alkaline) (ATS)

M 19 t 4 O VII e s:

M : Brown Forest Soil (BTG)
15 : Shallow (20-50 cm), inclination 20 - 30% (TOK)
t : Stony (DTO
4 : Very severe water erosion (ERZ)
O : Forest (SAK)
VII : Lands not suitable for soil utilization AKK)
e : Slope and erosion damage (ATS)
s : Soil incompetence (stony, salty and alkaline) (ATS)

N 20 3 O VII e s:

N : Non- calcareous Brown Forest Soil (BTG)
20 : Very shallow (0-20 cm), inclination 20- 30% (TOK)
3 : Severe water erosion (ERZ)
O : Forest (SAK)
VII : Lands not suitable for soil utilization AKK)
e : Slope and erosion damage (ATS)
s : Soil incompetence (stony, salty and alkaline) (ATS)

N 30 F VII s e:

N : Non- calcareous Brown Forest Soil (BTG)
30 : Lyhtosolic and inclination more than 30% (TOK)
F : Shrubbery (SAK)
VII : Lands not suitable for soil utilization AKK)
e : Slope and erosion damage (ATS)
s : Soil incompetence (stony, salty and alkaline) (ATS)

The turbines and the switchyard to be installed within the project scope are located on Non- calcareous Brown Forest Lands and Brown Forest Land according to the Big Lands Group Combination, and on Shrubbery, Forest and Dry land agriculture (Fallow) lands according to the present utilization. From the land utilization point of view, the lands are in categories VI and VII.

Brown Forest Lands: these lands were formed on main material rich in calcareous content. They have weakly developed layers. Their reactions are neuter or alkaline. In the lower parts of the subsoil accumulation of chalk can be observed. They provide good drainage.

Non – calcareous Brown Forest Lands: the upper part of this soil is a dark layer and under it there is a little bit different layer. The soil is non- calcareous and the reactions are acidic, neuter or alkaline. Their natural fertility is rather low.

Category VI Land : The 6th category land is a land that even when used as forest or pasture, it needs medium level measures to be taken. It is too sloping and exposed to severe erosion. It is floating, wet or very dry or not suitable for cultivation due to other reasons.

Category VII Land : The 7th category land is very sloping, too much exposed to erosion, stony and uneven, floating, dry, swamp or contains other unfit lands. Provided that it is considerably elaborated, it can be used as pasture or forest. If the vegetation that covers would reduce, then the erosion would become more severe. 18

All actions within the project scope must be compliant with the provisions of the **"Soil Preservation and Land Utilization Law"** number 5403 (Amended by Law number 4086), **"Law for Rehabilitation of Olive Cultivation and Grafting of Wild Olive Trees"** number 3573**, "Agriculture Reform Law for Land Arrangements in the Irrigation Areas"** number 3083, **"Pasture Law"** number 4341 and **"Aquaculture Products Law"** number 1380 and all the required permits will be obtained accordingly.

IV.2.4. Agricultural Lands (Agricultural Development Project Lands, Special Products Plantation Lands, Size of the Irrigated and Dry land Agriculture, Product Designs and their Yearly Production Quantities)

The Land Assets of the Bilecik Province are shown in Chart 12 and Figure 22. As it can be seen in Chart 14, the total amount of land assets of the Bilecik Province is 4.307.000 da. A portion of 32,9% consists of agricultural lands, 1,33% field- pasture lands, 66,58% forests and lands unsuitable for settlement and agriculture.

Chart 14 - Land Assets

Land Assets	Area (Da)	%
Agricultural Zone	1.381.990	32.09
Field – Pasture Zone	57.323,4	1,33
Forest, Settlement and Unsuitable for agriculture Zones	2.867.686,6	66,58
TOTAL	**4.307.000**	**100**

Source: Bilecik Province, Province Directorate Briefing on Food, Agriculture and Livestock

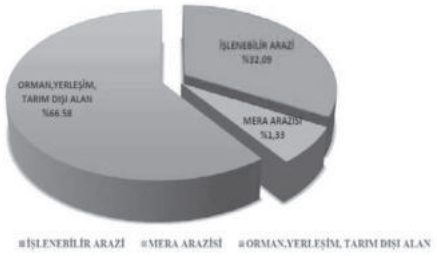


Figure – 22 Distribution of the Land Assets of the Bilecik Province
Source: Bilecik Province, Province Directorate Briefing on Food, Agriculture and Livestock

18 Technical instructions for the classification of lands and terrains

The distribution of the Agricultural Lands in the Bilecik Province is shown in Chart 15 and Figure 23. According to the data in Chart 15, in the total of 1.381.990 da area, a portion of 38,2% is agricultural fields area, a portion of 4,8% is vegetable growing area, a 0,3% is an greenhouse vegetables growing area, a portion of 10,5% is horticulture area, an 8,2% portion is fallow area, a portion of 1,2% is poplar land and the portion of 36,8% can be defined as unplowed fields.

Chart 15 - Distribution of the Agricultural Lands

Type of Agricultural Land	Area (da)	Distribution %
Fields Agricultural area	527.663	38,2
Vegetables growing area	66.606	4,8
Greenhouse vegetable growing area	3.860	0,3
Horticultural area	145.839	10,5
Fallow area	112.599	8,2
Popler area	16.584	1,2
Unplowed fields area	508.839	36,8
TOTAL	**1.381.990**	**100**

Source: Bilecik Province, Province Directorate Briefing on Food, Agriculture and Livestock

In the Bilecik Province there are 80 species of agricultural products cultivated as 30 field species, 23 fruits species and 27 vegetable species.

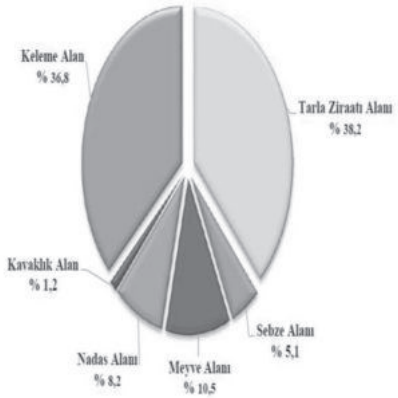


Figure 23 Distribution of Agricultural lands in year 2016
Source: Bilecik Province, Province Directorate Briefing on Food, Agriculture and Livestock

Chart 16 shows the distribution of the agricultural (cultivation) lands in year 2016 according to sub- provinces. According to this, of the 852.707 da agricultural (cultivation) lands, the portion of 164.751 da is in the Bozüyük sub- province, of which 119.455 da is for cereals and herbal products, 39.779 da is follow area, 2.089 da is for vegetables gardens and 3.428 da for fruits, beverage and spice herbs.

Chart 16 – Distribution of the agricultural (cultivation) lands in year 2016 according to sub- provinces

SUB - PROVINCES	TOTAL AREA (Da)	CEREALS AND OTHER HERBAL PRODUCTS AREA	FOLLOW AREA	VEGETABLE GARDENS (Da)	FRUITS,BEVERAGES AND SPICE HERBS AREA
CENTER	144359	**96371**	**18000**	**11618**	**18.370**
BOZÜYÜK	164751	**119455**	**39775**	**2089**	**34.28**
GÖLPAZARI	115570	**64721**	**4500**	**9322**	**37.027**
INHISAR	20170	**6250**	**2000**	**500**	**11.420**
OSMANELI	133342	**50123**	**3025**	**31597**	**48.597**
PAZARYERI	92544	**62961**	**24254**	**2856**	**2.473**
SÖĞÜT	87542	**54035**	**16785**	**7706**	**9.016**
YENIPAZAR	94429	**73743**	**4256**	**918**	**15.508**
TOPLAM	852707	**527663**	**115599**	**66606**	**145.839**

Source: Bilecik Province, Province Directorate Briefing on Food, Agriculture and Livestock

Chart 17 shows the vegetative products area, Figure 24 the field crops area, Figure 25 the open field vegetables production, Figure 26 the fruits production. According to this, among the field crops, wheat holds the biggest share with 87.033 tons, among vegetables tomatoes hold the biggest share with 85571,18 tons, in the greenhouse production the biggest share belongs to lettuce with 14634,40 tons and among fruits the peaches hold the largest share with 28670 tons production.

Chart 17 - Vegetative Production

Product groups	**Species**	**Cultivated area (da)**	**Production (ton)**	**Productivity (kg/da)**
FIELD CROPS	Wheat	315.638	87.033	276
	Barley	85.164	23.101	271
	Rye	6.035	1.747	289
	Oat (green plant)	14.795	18.217	1.231
	Beans	2.545	449	176
	Chick peas	9.065	1.253	138
	Sunflower (for oil)	21.651	3.387	156
	Safflower	680	94,6	139
	Corn (for silo)	7.116	31.652	4.448
	Trefoil (green plant)	5.085	6.029	1.186
	Clover	17.784	38.157	2.146
	Hops	3.415	1.845	540
	Onion	2.169	2.560	1.180
VEGETABLES	Pumpkin	3.708	6.939,45	1.871
	Red beans	4.630	4.449	961
	Green peas	2.375	1.709,63	720
	Pepper (all kinds)	4.695	10.154,95	2.163
	Tomatoes	13.746	85.571,18	6.225
	Beans	5.054	4.979,92	985
	Spinach	3.130	3.694,50	1.180
	Water melon	13.955	73.289	5.252
	Melon	9.275	21.633	2.332
	Eggplant	970	3.040	3.134
	Onion (green)	1.430	2.584	1.807
GREENHOUSE	Tomatoes	2.111	21.307	10.093
	Cucumber	1.681	16.932	10.073
	Letture	4.965	14.634,40	2.948
	Green onion	250	500	2.000

FRUITS	Cherry	24.374	7.648	314
	Peach	26.545	28.670	1.080
	Olive	16.440	3.732	227
	Sour cherry	13.360	2.071	155
	Grapes	13.707	6.398	467
	Walnuts	30.983	2.268	73
	Quince	5.158	8.954,13	1.736
	Apple	4.568	2.831	620
	Prune	3.180	2.217	697
	Pomegranate	3.278	6.572	2.005
	Pear	1.350	741	549

Source: Bilecik Province, Province Directorate Briefing on Food, Agriculture and Livestock

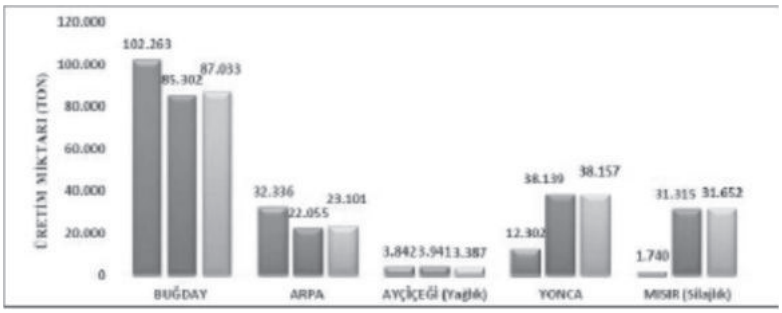


Figure – 24 Yearly production of field crops

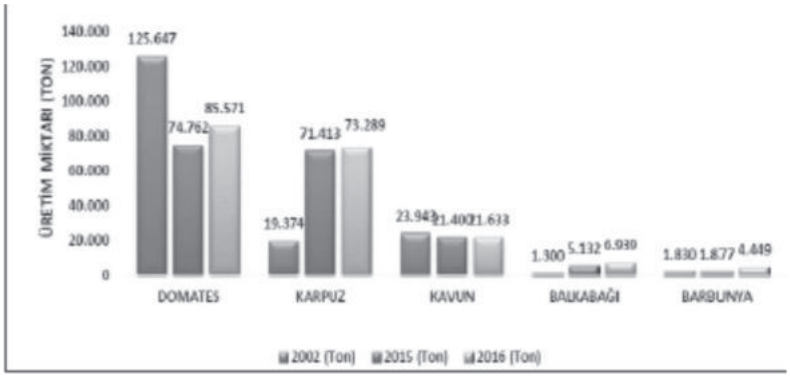


Figure – 25 Yearly production of vegetables in open field areas
Source: Bilecik Province, Province Directorate Briefing on Food, Agriculture and Livestock

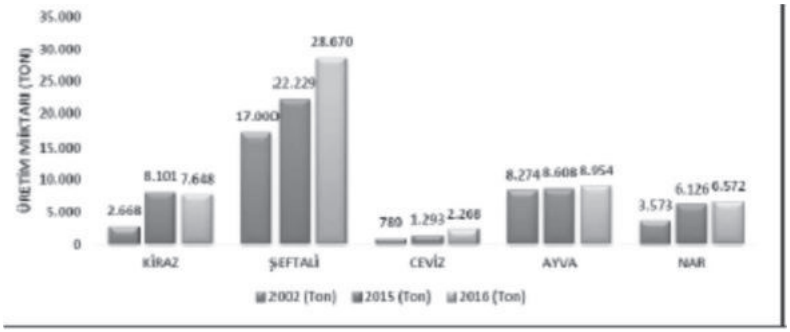


Figure – 26 Yearly production of fruits
Source: Bilecik Province, Province Directorate Briefing on Food, Agriculture and Livestock

IV.2.5. Forest Areas (Tree species and their quantities (m^3), Sizes of the Covered Lands and their Closures, Their Current and Planned Purposes of Conservation and/ or Use, 1/25000 scale Country Map indicating the Project area, the Distance from the Project Area to the Forest Lands, 1/10000 scale Forest Cadastre, and the attachment of the Approves Land Data Map.)

Forest Areas

Bilecik is situated in the transition zone between the Central Anatolian and Marmara Region climates. Summers are hot and dry, winters are cold with snow falls in high places, a temperate climate is observed in the Sakarya region up to a certain altitude. According to maps prepared by the Mining Technical Research Institute, the geologic and mineralogical structures were formed volcanically in the chalk period of the second era. In general they contain main eruptive stones. Besides, there are also sedimentary masses. The forest areas have a broken structure in general. Although the expansion of the forests depends on the soil characteristics, it varies also due to altitude and, consequently, to climate.

The Bilecik Province, being situated in the transition zone between the Marmara Region and Central Anatolia, it displays the characteristics of the Marmara, Central Anatolia and Aegean Regions climates. In the South as an extension of Uludağ, there are Fir tree, Scotch pine, Larch tree and Beech tree species, advancing towards North, the Oak tree and Calabrian Pine species become predominant. In the forests within the borders of the Bilecik Province, along with the main species of Calabrian Pine, Larch, Scotch Pine, Fir, Beech, Oak and Juniper, there are also other tree species such as Hornbeam, Forest Popler, Hophornbeam, Elm tree, Linden tree, Ash tree, White birch, Yew tree and Common Hazelnut tree. There is a Forestry Department in the Bilecik Province. The department consists of 8 sub- province directorates.

The Bilecik Province Center includes the Bozüyük, Gölpazarı, Inhisar, Osmaneli, Pazaryeri, Söğüt and Yenipazar sub- provinces. The Forestry Department is responsible of an area of 419.511,50 Ha, of which 55% (228.646 Ha) is forest area, 45% (190.865,5 Ha) is clearing area. 59% (135.523,5 Ha) of the forest area is qualified as normal high forest and 41%(93.122,5 Ha) as degraded high forest.[19]

19 Bilecik Nature Tourism Master Plan 2013 – 2023

Chart 18 Forest Assets according to the Bilecik Sub- Provinc Directorates

Sub- Province Directorate	Normal High Forest	Degraded High Forest	Total High Forest	Non Forested Area	General Area
AKSUDERE	7.262,50	1.091,00	8.353,50	2.997,00	11.350,50
BAHÇESULTAN	7.146,00	185,50	7.331,50	4.998,50	12.320,00
BILECIK	12.538,50	8.882,50	21.421,00	19.068,00	40.489,00
BOZÜYÜK	9.730,00	2.859,00	12.589,00	22.081,00	34.670,00
DODURGA	10.014,00	8.009,00	18.023,00	14.579,50	32.602,50
EDEBALI	8.241,00	12.693,00	20.934,00	18.284,00	39.218,00
GÖKSU	9.055,50	5.294,50	14.350,00	9.754,00	24.104,00
GÖLPAZARI	13.206,00	9.000,50	22.206,50	15.985,50	38.192,00
HARMANKAYA	12.090,00	17.656,00	29.746,00	25.665,50	55.411,50
INHISAR	7.149,00	9.552,00	16.701,00	10.752,50	27.453,50
MIRATDERE	5.702,00	520,50	6.222,50	1.022,00	7.244,50
OSMANELI	12.612,00	4.599,00	17.211,00	9.107,00	26.318,00
PAZARYERİ	8.046,50	2.322,00	10.368,50	11.703,50	22.072,00
SÖĞÜT	12.730,50	10.458,00	23.188,50	24.867,50	48.056,00

Source : https://bursaobm.ogn.gov.tr/BilecikOIM/Lists/Orman Varligi/AIIItems.aspx

Project Area

According to the Bilecik planning area 1/100.000 scale Environmental Plan Map **(see Attachment 2.1),** the project area is located in the area defined as forest area.

According to the current utilization, on the land assets 1/100.000 scale map **(see Attachment 2.5),** the project area is located in the area defined as Shrubbery and Forest area.

The Stand data map and the Forest cadastre map prepared within the project scope are given in the Attachment 4.7.

The Environmental Impact Assessment Form obtained from the Republic of Turkey General Directorate of Forestry, Bursa Province Directorate of Forestry with the letter number E. 917333 dated May 2nd 2018, is submitted as Attachment 4.7. Below are given the specifications of the project zone according to the Environmental Impact Assessment Form and the final decision.

* The project area is connected to the Aksudere, Muratdere, Dodurga, Forest Suprovince Directorates.
* The division numbers are: 96,98,99,100,101,102,2,4,5,6,7,10,14,15,13,21,11,9,23,24,25,26,27,28 Dodurga,160,151,128,153,132,133,152,162,163,165,166,170,168,167,64,156,157,158,138,139,107, 108,140,141,110,111,92,91,72,73 Muratdere, 31,320,324,235,23326,327,328,329,330,338,339,186, 187,185,184,188,189,190,191,192,193,127,128,129,126,125,131,132,34,35,36,133,39,40,41,42,43, 47,48,149,51,150,52,55,53,54,56 Aksudere.
* Stand data processing kind: productive and degraded high forest,
* Stan data type : OT, ÇsÇkcd2, Bçk, Çkld, ÇsGdc2, GÇsdc3, Bçs, BG, GC, ÇkÇsd1, GA, ÇkÇsd1, Gd3, GD, GÇsA, ÇsGcd3, Çscd2, ÇkÇsd2, ÇkÇscd3, Çsd2, Çkd2, Z, Çka, Me, BKn, Knb3, M1b3,Çkcd1, Knc3, Bar, M1ab3, BM1, çkc3, Çkdc2, Mzab3, knb3, knc3, kncd3, M1a3.
* The forest delimitation and cadastre were done.

* Some part remains in the allocated forest area. Some part is agricultural land.
* According to the burnt forest area, the area reserved for rejuvenation of the reforested zones and dam basins mentioned in article 18 of the Forest Law number 6831, some part of the project zone (T1, T2, T3, T4, T5, T6, T7, T8 turbine areas) is in the areas burnt by the Domaniç- Dodurga fire of October 11th, 2017 and coincide with the rejuvenation areas.
* The Project area is not in the Research Project and Training Center area.
* The Project area is not in the Conservation forests, Gene Preservation area, research forest reserved or the Scientific studies, Research station, City forests, the Endemic and rare ecosystem areas needin g protection, seed stand areas.
* From the forestry resources and forestry works point of view, there is no harm in knowing the sensitivity accorded to the rejuvenation works after the 2017 fire.
* The region is in the 1st degree vulnerable zone from the forest fires view point.
* The project area is situated at 375 m air distance from the Delielmacık village, 750 m air distance from the Erikli village, 615 m air distance from the Muratdere village and 450 m air distance from the Çamyayla village.
* The actualization of the project will provide employment opportunities.
* There is no limitation concerning the forest area management plan.
* There is no harm pursuant to the Circular Letter number 2014/1.

As the result of the study and evaluation done within the scope of the Regulations for the Environmental Impact Assessment and the Forest Law number 6831, it has been concluded that the Operation of the WIND Power Energy Plant will not have any negative impact upon the forests and forestry works, provided that, the implementation of the project within the project scope in the areas coinciding with the area burnt in the 2017 fire and during the permit period, will be made in continuous communication with the forestry department, in such a way that would not harm the rejuvenation works and would consider the sensitivity in this areas.

In case roads will be opened in the forest area, this will be done using excavators, without sliding down soil from the road sides and without harming the environment, the material resulting from road construction will be deposited in the areas permitted, without harming the forest and the maintenance and repair of the forest roads to be used will also be provided.

In the places where the project area passes through the forest zones, attention will be paid to chose stony- rocky areas with poor soil, cutting trees will be avoided, during the installation of the turbines in the forest qualified areas the excess excavation material containing forest soil will be deposited in areas where no other material from different area will be brought.

The maintenance and repair services of the machinery to be used at the construction stage will be provided by the authorized licensed fuel stations. The residue oils and other parts of the construction machinery will not be disposed in the forest area.

The excavation material that would come out at construction of the turbine foundation will not have to be deposited as excavation excess material because it will be immediately used as filling material.

Within the project scope it is planned to cut about 700 trees. For the cutting proceeding the necessary permits have to be obtained from the Forestry Sub- province Directorate and during this process the number of trees to be cut and their stand types have to be determined. The exact number of trees to be cut within the project scope will be determined during the permit period, 5 times more trees than the number of threes to be cut will be planted in the indicated zones in coordination with the Sub- province Directorate of the Forest Department. The reforestation will be done by selecting the trees suitable to the climate and soil conditions, in coordination with the Sub- province Directorate of the Forest Department.

IV.2.6. Conservation Areas (National Parks, Nature Parks, Wetlands, Natural Monuments, Nature Reserve Areas, Wildlife Protection Areas, Biogenetic Preservation Areas, Biosphere Reserves, Natural Sites and Monuments, Archeological, Historical and Cultural Sites, Special Environment Conservation Regions, Special Protection Areas, Touristic Regions and Centers, Lands within the scope of the Pasture Law)

1. Areas that have to be protected pursuant to the legislation of our country

a) The "National Parks", "Natural Parks", "Natural Monuments" and "Nature Protection Areas" defined in Article 2 of the Natural Parks Law **are not** in the project area.

The National Park closest to the project area is the Uludağ National Park at 43 km air distance to the North West. The Natural Park closest to the project area is the Küçükelmalı Natural Park at 12 km air distance to the North West and the Topuk Yaylası Natural Park at 10 km air distance to the West. The Natural Protection area closest to the project area is the Kasalı - Domaniç Natural Protection Area at 10 km air distance to the West.

Figure 27 – The locations of Power Plant Project area and Protected Areas
(Source: http://geodata.ormansu.gov.tr#)

b) The "Wildlife Protection Zones, Wildlife Improvement Zones and Wild Animals Settlement Zones" defined pursuant to the Land Hunting Law **are not** in the project area.

On the map printed for information purposes in order to indicate the Hunting Free Zones and the Hunting Forbidden Zones according to the Central Hunting Commission Resolution number 16 enacted by its publication in the Official Gazette Issue number 30073 dated May 22nd, 2017, the project area is located within the borders of the Dodurga State Hunting Ground and the Koşk State Hunting Ground.

Figure 28 – The locations of Power Plant Project area on the Bilecik Province map showing the zones free and forbidden for hunting
Source: http://avlakharitalari.ormansu.gov.tr/AvlakHaritlari/11.jpg

c) The areas defined in the Cultural and Natural Assets Protection Law, Article 3, first paragraph under the "Definitions " sub- paragraph, points 1, 2, 3, and 5 as "Cultural Assets", "Natural Assets", "Sit" and "Protection Areas" and which were determined and registered pursuant to the same Law and to the concerned articles of the Law number 3386 dated June 17th, 1987 (Law for the amendment of some articles in the Cultural and Natural Assets Protection Law number 2863 and for the addition of some articles to the same law), **are not** in the project area.

The opinion number E.151557 dated February 19th, 2018 (**see Attachment 4.5**) sent within the project scope by the Republic of Turkey Ministry of Culture and Tourism, General Directorate of Museums and Cultural Assets, Directorate of Eskişehir Regional Council of the Cultural Assets Protection, stated that "*In case any changes will be done concerning the turbine places and/ or road itinerary, there is no objection as long as opinion will be solicited regarding the revised areas"*.

According to opinion number 531 dated February 3rd, 2017 (**see Attachment 4.5**) sent within the project scope by the Republic of Turkey Ministry of Culture and Tourism, General Directorate of Museums and Cultural Assets, Directorate of Eskişehir Regional Council of the Cultural Assets Protection, the archive investigations revealed that the area does not coincide with any cultural asset pursuant to the scope of Law number 2863. There will be no construction of physical intervention actualized within the project scope according to the Final Project without getting the opinion of Eskişehir Regional Council of the Cultural Assets Protection.

According to opinion number E.4403 dated October 24th, 2017 (**see Attachment 4.5**) sent within the project scope by the Republic of Turkey Governorship of the Bilecik Province Regional Directorate of Environment and Urban Development, in the project area there is no Natural sit area and/ or Natural Asset defined pursuant to the provisions of the "Regulations regarding the Procedure and Principles for the Determination, Registration and Approval of the Protected Areas" enacted by its publication in the OFFicial Gazette Issue number 28358 dated July 19th, 2012.

In case any Cultural Asset, Natural Asset, Sit or Protection area will be determined in the course of the activities to be rum within the project scope, then the activity will be stopped immediately and the concerned authorities will be urgently informed.

ç) The areas defined as Aquaculture Production and Breeding Areas pursuant to the Aquaculture Products Law scope, **are not** in the project area.

d) The areas defined in Articles 17, 18, 19 and 20 of the Water Pollution Control Regulations

The concerned articles of the Water Pollution Control Regulations were abolished. The areas defined in Article 10, Article 11, Article 12 of the Regulations concerning the Protection of the Drinking – Industrial Water Basins, number 30244 dated October 28th, 2017 are not in the project area.

e) The areas defined in the Regulations for the Assessment and Management of Air Quality **are not** in the project area.

f) The areas determined and defined as "Special Environment Protection Areas" by the Council of Ministers pursuant to article 9 of Environmental Law, **are not** in the project area.

g) The areas under protection pursuant to the Bosphorous Law **are not** in the project area.

The power plant area in the project area is situated in the areas defined according to the current utilization as shrubbery and forest area on the 1/100.000 scale land assets map **(see Attachment 2.5)**.

According to the Environmental Impact Assessment Form (see Attachment 4.7) and to the result of the survey and assessment done within the scope of of the Regulations for Environmental Impact Assessment, it has been concluded that the Operation of the Wind Power Energy Plant will not have any negative impact upon the forests and forestry works, provided that, the implementation of the project within the project scope in the areas coinciding with the area burnt in the 2017 fire and during the permit period, will be made in continuous communication with the forestry department, in such a way that would not harm the rejuvenation works and would consider the sensitivity in this areas.

h) The zones which were forbidden pursuant to the Seacoasts Law **are not** in the project area.

ı) The areas defined according to the Law for Rehabilitation of Olive Cultivation and Grafting of Wild Olive Trees **are not** in the project area.

i) The areas defined according to the Pasture Law **are not** in the project area.

j) The areas defined according to the Regulations for the Conservation of Wetlands **are not** in the project area.

The Wetlands under Conservation which are closest to the project area are the Iznik Lake Wetland Area at 54 km air distance in the North and the Ulubat Lake Ramsar wetland area at 96 km air distance in the North West

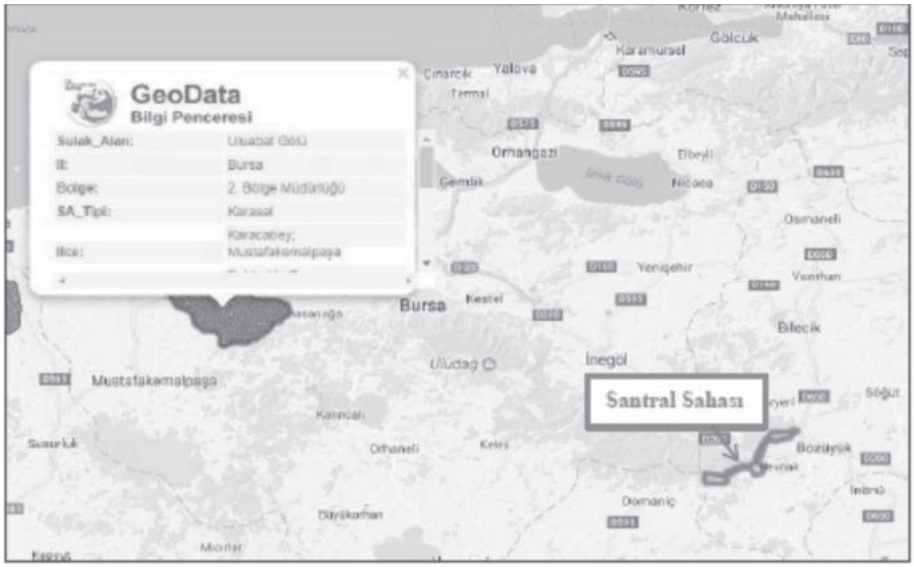


Figure 29 – The locations of the Project Area and Wetland Areas

(**Source**: http://geodata.ormansu.gov.tr/#)

2. The areas which have to under protection according to the international agreements of which our country is a party.

a) The areas taken under protection pursuant to the "Convention for the Conservation of the European Wildlife and Natural Habitats", the 1st and 2nd Zones defined in the "Important Sea Turtles Breeding Areas" and the "Mediterranean Monk seal Habitat and Breeding Areas" **are not** in the project area.

b) The areas taken under protection pursuant to the "Convention for the Protection of the Mediterranean Sea against Pollution" (Barcelona Convention) **are not** in the project area.

1) In our country there **are not** any "Specially Protected Areas" defined according to the "Protocol for The Protection of the Specially Protected Areas of the Mediterranean Sea".

2) The "100 Mediterranean Coastal Historical Sits of Common Importance" selected pursuant to the Declaration of Geneva publicly announced by the United Nation Environmental Program **are not** in the project area.

3) The coastal areas forming the habitat and feeding environment of the "Marine species under threat unique to the Mediterranean Sea" specified in the Declaration of Geneva, **are not** in the project area.

c) The cultural, historical and natural areas defined as "Cultural heritage" and "Natural heritage" and taken under protection by the Ministry of Culture pursuant to articles 1 and 2 of the "Convention for the Protection of the World Cultural and Natural Heritage" **are not** in the project area.

ç) The areas taken under protection pursuant to the "Agreement for the Protection of the Wetland areas of International Importance especially as the Habitat of the Waterfowl" **are not** in the project area.

The Protected Wetland Areas, which are closest to the project area, are the Iznik Lake wetland at 54 km air distance in the North and the Ulubat Lake Ramsar wetland at 96 km air distance in the North West.

d) The areas defined within the scope of the European Landscape Convention **are not** in the project area.

3. Areas to be protected

a) The areas which were determined in the Approved Environmental Plans as areas the characteristics of which must be protected and which are subject to construction restrictions (biogenetic areas, geothermal areas and similar ones which have to protect their natural characteristics) **are not** in the project area.

According to the 1/100.000 scale Environmental Plan (**see Attachment 2.1**), the agricultural, forest, Karasu river mouth area, Karasu streamlet source protection area are in the areas defined as rural development axis and urban development axis.

b) Any of the agricultural zones such agricultural development areas, the irrigated, probably irrigable areas and areas in the usability category I, II, III and IV, the areas in category I and II used for agriculture dependant on precipitations, and the entire special crops plantation areas **are not** in the project area.

The locations of the turbines and switchyard to be installed within the project scope are in the lands classified as category VI and VII from the usability point of view.

The opinion of the Republic of Turkey Bilecik Governorship Province Directorate of Food, Agriculture and Livestock, Number E310762 dated February 2nd, 2017 sent wirhin the projhect scope is given attached (**see Attachment 4.8**)

After getting the Positive Environmental Impact Assessment Document within the project scope, before the start up of the construction, the necessary permits will be obtained according to the "Soil Protection and Land Utilization Law number 5403 (Amended by Law number 4086) and to the "Pasture Law" number 4341.

c) Wetlands: any of the waters, swamps, reed fields, peat moors and the lands which advance from the coastline towards inland and are wetland from the ecologic viewpoint, which are natural or artificial, with still or flowing water, with fresh, bitter or salty water, the depth of which does not exceed 6 m during the sea flux – reflux periods and which are important as the habitat of all living creatures, mainly of the waterfowl, are not in the project area.

The Protected Wetland Areas, which are closest to the project area, are the Iznik Lake wetland at 54 km air distance in the North and the Ulubat Lake Ramsar wetland at 96 km air distance in the North West.

ç) Lakes, streams, subterranean waters exploitation areas

The 1/25.000 scale Water Resources Map on which the project artea was indicated is submitted in Attachment 2.2. According to the prepared plan the Gürgenoluk stream, Aksu stream and Kömürsu stream are passing through the power plant area. There are a lot of dry stream beds within the project area.

In the North West of the project area there is the Dereköy Dam at an air distance of approximately 7 km and in the South East there is the Dodurga (Darıdere) Dam at an air distance of approximately 10 km.

In the North East of the area there is the Kurtköy Pond at an air distance of approximately 10 km, in the North West there is the Tüfekçikonak Pond at an air distance of approximately 9 km and in the South West there is the Çamlıca Pond at an air distance of approximately 18 km.

In the North East of the power plant area there is Sarısu streamlet with continuous flow, at an air distance of approximately 10 km, in the North there is the Sorgun streamlet at an air distance of approximately 10 km and in the North West there is the Aksu streamlet with continuous flow at an air distance of approximately 2,5 km.

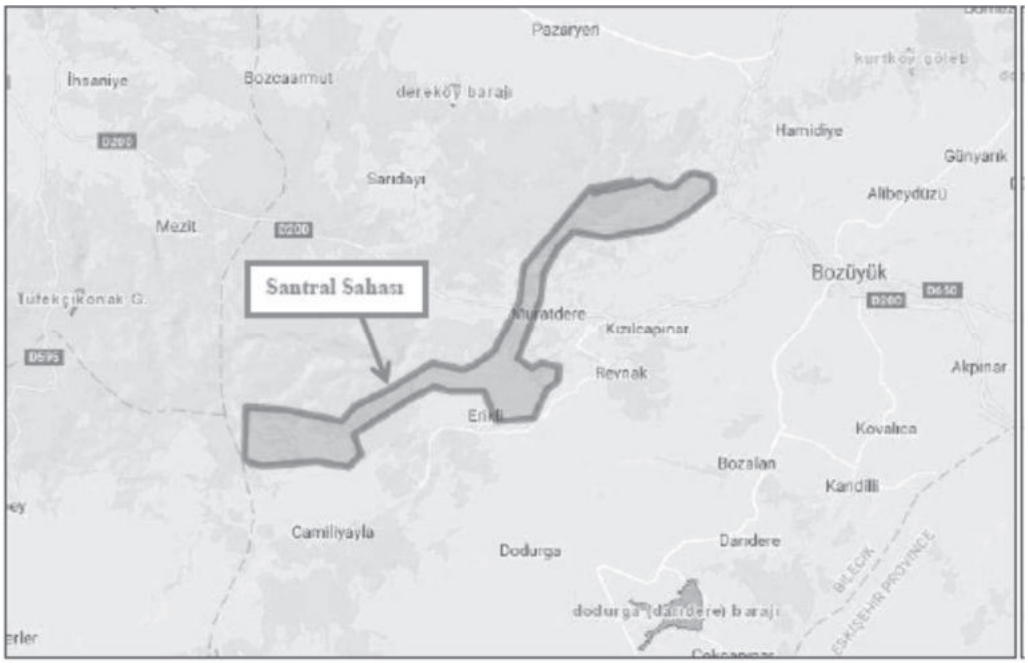


Figure 30 – Project area and the Dams and Ponds in its close surroundings
Source : http://geodata.ormansu,gv.tr/#

d) The species important for the scientific researches and/ or are or might be endangered and the areas which are the habitat of these endemic species, the biosphere reserve, biotopes, biogenic reserve areas, the geological and geomorphologic formati.ons with unique characteristics **are not** in the project area.

IV.2.7. Flora and Fauna (Species, Local Endemic Plant Species with endemic characteristics, Animal Species living in nature, Species under protection pursuant to the national and international legislation, the rare and endangered species and their habitat, the names of the game animals, their population and the Central Hunting Commission Decisions taken for these species), showing on a map the vegetation types and their sampling areas within the project zone, the protection measures necessary to be taken for the living creatures which will be impacted by the project, the impact on the river beds (at the construction and operation stages)

The Ecosystem Assessment Report within the project scope was prepared by academicians (Prof. Dr. Şakir Onder Özkurt – Fauna/ Mammals, Assistant Prof. Şafak Bulut – Ornithology, Expert Haşim Altınözlü – Flora) who are experts in their fields. The information comprised in the Ecosystem Assessment Report is submitted below under the respective topics.

FLORA

The land study within the scope of the Bozüyük Wind Power Energy Plant was conducted by Expert Haşim ALTINÖZLÜ, lecturer at the Hacettepe University, Faculty of Sciences, Department of Biology. A 2 days study was conducted on the dates of March 14th – 15th, 2018 in order to determine the plant species forming the floral structure of the project area, the protection status of these plants and the risks faced by these species and the protection measures that need to be taken. The land study was done within the borders of the Environmental Impact Assessment area. We have also conducted open area surveys. Plant samples were collected from the area during the open area surveys. The collected samples of fresh plants were dried according to the Herbarium technique. The book "**Flora of Turkey and East Aegean Islands**" was used as source for identifying the dried plants. The identified plant species are given in the Chart below. The plants in the floristic list of the chart were given in alphabetical order for facilitating the systematic control of the locations of these plants. In the first column the familia, in the second the taxon, in the third column the endemic position, in the fourth column the phytogeographical region if known, in the fifth column the Turkish name are given. Şinası Akalın's book "**Büyük Bitkiler Kılavuzu**" (Guide for the big plants) and Prof. Dr. Turhan Baytop's book "**Türkçe Bitki Adları**" (Turkish plant names) were used as source for determining the nTurkşsh names of the plants. The sixth and last column of the chart shows the taxon danger category. The danger category of the plants was determined pursuant to the criteria defined by the IUCN commission and using as source the book **"Türkiye Bitkileri Kırmızı Kitabı"** (The Red Book of the Plants of Turkey) prepared by Ekim e.a and published by the Society for the Protection of then Nature of Turkey.

Abbreviations and Explanations used for determining the danger category of the plant species:

EX: Extinct	LC: Little endangered
EW: Extinct in nature	DD: Very insufficient
CR: Very endangered	NT: Candidate for becoming endangered
EN: Endangered	VU: Might be harmed

Habitat Categories

1 – Forest
2 – Shrub
3 – Frigana (the plants mostly with needles, short in height and forming grass balls)
4 – Cultivation areas (vineyards, gardens, etc.)
5 – Dry pastures
6 – Humid pastures, Swamps and Wetland areas
7 – Road sides
8 – Rocky places

Relative Abundance Categories

1 – Very rare
2 – Rare
3 – Medium abundant
4 – Abundant
5 – Very abundant

Endemism

L – Locally endemic
B – Regionally endemic
Y – Extensively endemic

Vegetation

The land study conducted in the Bozüyük Environmental Impact Assessment Area determined a predominant vegetation structure. Three structures were defined in the Project area:

1 – Forest vegetation
2 – Forest glades
3 – Agricultural zones

The vegetation structure in the places where the turbines are planned to be installed in the Bozüyük WIND Power Energy plant project area is shown in Chart 19.

Chart 19 – Predominant vegetation structure of the turbine locations

Turbine number	Predominant vegetation	Turbine number	Predominant vegetation
1	Forest glades	25	Forest glades
2	Forest glades	26	Forest glades
3	Forest glades	27	Forest glades
4	Forest glades	28	Forest glades
5	Forest glades	29	Forest glades
6	Forest glades	30	Forest glades
7	Forest glades	31	Forest glades
8	Forest glades	32	Forest glades
9	Forest area	33	Agricultural area
10	Forest area	34	Forest glades
11	Forest glades	35	Forest glades
12	Forest glades	36	Forest glades
13	Forest glades	37	Forest glades
14	Forest glades	38	Forest glades
15	Forest glades	39	Forest glades
16	Forest glades	40	Forest glades
17	Agricultural area	41	Forest glades
18	Forest glades	42	Forest glades
19	Forest glades	43	Agricultural area
20	Forest glades	44	Forest glades
21	Forest glades	45	Forest glades
22	Forest glades	46	Forest glades
23	Forest glades	47	Forest glades
24	Forest glades	48	Forest glades
SWITCHYARD AREA			Forest area

Forest vegetation

In the Bozüyük Environmental Impact Assessment Area a predominant vegetation structure was determined. The tree and bush species are as follows: Abies nordmanniana (Stex) Spach Subsp. Bornmuelleriana (Mattf.) Coode & Cullen, Juniperus oxycedrus L. subsp. Oxycedrus, Pinus sylvestris L., Ruscus hypoglossum L., Ruscus aculeatus L. var. aculeatus, Colchicum bivonae Guss., Galanthus garicilus Celak, Daphne pontica L., Verbascum glomeratum L., Ranunculus constantinopolitanus (DC) d'Urv., Rumex PulcherL., Epilobium montanum L., Teucrium chamaedrys L.subsp.chamaedrys, Clinopodium vulgare L. subsp.arundanum (Boiss.) Numan., Vicia cracca L subsp. Stenophylla Vel., Fagus orientalis Lipsky, Quesrcus petrae (Mattuschka) Liebl subsp. Petrae, Quercus cerris L. Var. cerris, Ononis pubescens L. Dipsacus laciniatus L., Cistus laurifolius L., Silene alba (Miller) Krause subsp. Divaricata (Reichb.) Walters, Hieracum pannosum Boiss., Mycelis Muralis (L.) Dum, Leontodon asperrimus (Willd.) J. Ball & May., Donoricum Orientale Hpffm., Bellis perenis L., Acer platanoides L. and Torilis leptophylla (L.) Reichb.

Figure 31 – Bozüyük Wind Power Energy Plant area *Pinus nigra* Arn. Subsp. Pallasiana (Lamb.) Holmboe (Black Pine) forest

Figure 32 – Bozüyük Wind Power Energy Plant area large leafed forest vegetation formed by Acer platanoides L., Carpinus Betulus L., Corylus ASvellana, Fagus Orientalis Lispsky, Quercus Petrae (Mattuschka) Liebl. Subsp petrae, Quesrcus cerris L. var. cerris.

Forest Glades (Steppe vegetation)

The steppe vegetation was found in the forest glades in the project area. The species found are: Juniperus excelsa Bieb. Subsp.excelsa, Juniperus oxycedrus, L. subsp. Oxycedrus, Daucus carota L,.Eryngium campestre L. var. virens Link., Schandis aucheri NOiss., Scorzonera laciniata L. subsp. Laciniata, Sonchus asper (L.), Hill. Subsp.glauscescens (Joprdan) Ball., Taraxacun officinale Weber, Xeranthemum annuum L., Anchusa undulate L., subsp. Undulate, Cerinthe minor L. subsp. Auriculata (Ten.) Domac. Cynoglossum creticum L., Myosotis lithospermifolia Willd., Osoma isauricum Boiss & Helrd., Helianthemum nummularium (L.) Miller subsp. Nummularium, Sedum acre L., SCabiosa argenteaL., Euphorbia apios L., Euphorbia macrolada Boiss., Argyrolobium bieberstenii Bakk, Astragalus elongates Willd. Subsp. Elongates, Genistalydia Boiss. Var. Lydia, Ajuga chamaeptys (l.) Schreber subsp. Chia (Schreber) Archangeli var. chia, Lamium purpureum L., var. purpureum, Lamium maculatum L. var. maculatum, Mentha peregrinum L., Phlomis longifolia Boiss & Bal. var. longifolia, Prunella vulgaris L., Salvia sclarea L., Salvia vi,ridis L., Stachys recta L. subsp. Subcrenata (Vis.) Brig., Teuycrium chamaedrys L. subsp. Chamaedrys and Thymus longicaulis C. Presl. Subsp. Longicaulis var. subisoplyllus (Barbas) Jalas.

Figure 33 - Bozüyük Wind Power Energy Plant Steppe Vegetation

Agricultural Zones

Turbines T17, T33 and T43 in the Bozüyük Wind Power Energy Plant remain in the agricultural zone. The species folund in this area are: Urtica dioica L., Brachypoodium sylvaticum L., Bromus japonicas Thunb. Subsp. Japonicas, Cynodon dactylon (L.) pers. Var. dactylon, Elymus hispidus (Opiz) Melderis subsp. Hispidus, Poa bulbosa L., Pyrus elaeagnifolia, Cataraegus monogyna Jacq. Subsp. Monogyma, Reseda lutea L.var. lutea, plantago lanceolata L., plantago major L. subsp. Major, Hypecoum imberbe Sibyh. & Em, Viscum album, subsp. Album, Lotus corniculatus L. var. corniculatus, Trifolium campestre Schreb. And Sonchus asper (L.) Hill. Subsp. Glaucescens (Jordan) Ball.

Floristic Analysis

The result of the identification of the plants collected during the land study in the project area located in the Bilecik province, Bozüyük sub- province, Muratdere Village surroundings, 142 gene, 174 species, 13 subspecies and 4 varieties belonging to 48 families have been determined. The phytogeographical distribution of the plants found in this area is as follows: 17 Mediterranean elements, 32 Europe – Siberia elements, 8 Iran – Turan elements and 1 Auxin element. 120 species are either unknown or belong to more than one phytogeographical area. Among the identified species 174 are in the LC (little endangered) category. In the operation area there were identified 5 endemic taxons. These taxons are: Abies nordmanniana (Stex) Spach subsp. Bornmuelleriana (Mattf.) Coode & Cullen (LC), Anthemis aciphylla Boiss.var. discoidea Boiss. (LC), Onosma isauricum Boiss. & Heldr. (LC), Campanula lyrata L. Subsp. Lyrata (LC), and Minuartia anatolica (Boiss.) Woron var. anatolica (LC).

Protection Measures

In the project area there were identified 5 endemic endemic plant species. These species are Abies nordmanniana (Stex) Spach subsp. bornmuelleriana (Mattf.) Coode & Cullen (LC), Anthemis aciphylla Boiss.var. discoidea Boiss. (LC), Onosma isauricum Boiss. & Heldr. (LC), Campanula lyrata L. Subsp. Lyrata (LC), and Minuartia anatolica (Boiss.) Woron var. anatolica (LC). Below is given detailed information about the distribution of these species in Turkey, the coordinates of the places where they were identified and the measures which have to be taken in order to protect them.

Abies nordmanniana (Stex) Spach subsp. *bornmuelleriana* (Mattf.) Coode & Cullen

Abies nordmanniana (Stex) Spach subsp. *bornmuelleriana* (Mattf.) Coode & Cullen species is a perennial tree. It prefers the forest areas as habitat. In Turkey is it spread at Bolu, Karabük, Kastamonu, Bilecik, Bursa, Samsun and Sinop. It is in the LC category according to the IUCN criteria. The trunk diameter of *Abies nordmanniana* (Stex) Spach subsp. *bornmuelleriana* (Mattf.) Coode & Cullen (fir) varies between 80 and 130 cm. The transportation of individuals with such a thick trunk is out of question. Even if they are moved t0o similar habitats, since their roots are very deep at almost 1-2 m depth, the roots are harmed during transportation and consequently their chance of living in the new habitat is eliminated.

Suggested Protection Method

As many *Abies nordmanniana* (Stex) Spach subsp. *bornmuelleriana* (Mattf.) Coode & Cullen species trees as the number of damaged individuals of the population in the Bozüyük WIND Power Energy Plant area will be newly planted in the habitats similar to project area habitat.

Figure 34 - Abies nordmanniana (Stex) Spach subsp. bornmuelleriana (Mattf.) Coode & Cullen

Anthemis aciphylla Boiss.var. *discoidea* Boiss.

Anthemis aciphylla Boiss.var. *discoidea* Boiss is a perennial herbaceous plant. The flowering period is between the months of May – July. As habitat it prefers the Quercus, Pinus, Juniperus inter regions, the sub-alpine bush zones. In Turkey it is spread in Istanbul, Bursa, Bilecik, Manisa and Konya. According to the IUCN criteria it is in the LC category and there is no need to take any protective measure for this species before starting the construction. The upper layer of the ground has to be peeled off and preserved according to its method and when the itinerary will be reconstructed, this layer will cover again the ground as the top layer. The seeds and the roots in the soil will germinate again and would expedite reverting to the initial state.

Figure 35 - Anthemis aciphylla Boiss.var. discoidea Boiss.

Campanula lyrata Lam. subsp. *lyrata* Lam.

Campanula lyrata Lam. subsp. *lyrata* Lam. is a two year or perennial herbaceous plant. The flowering period is between the months of April – July. As habitat it prefers the stony places, precipices and river bank habitats. In Turkey it is spread in Istanbul, Zonguldak, Ankara, Balıkesir, Burdur, Bursa,Çanakkale, Çorum, Denizli, Eskişehir, Isparta, Izmir, Konya and Muğla. According to the IUCN criteria it is in the LC category and there is no need to take any protective measure for this species before starting the construction. The upper layer of the ground has to be peeled off and preserved according to its method and when the itinerary will be reconstructed, this layer will cover again the ground as the top layer. The seeds and the roots in the soil will germinate again and would expedite reverting to the initial state.

Figure 36 - Campanula lyrata Lam. subsp. lyrata Lam.

Onosma isauricum Boiss. & Heldr.

Onosma isauricum Boiss. & Heldr. species is a perennial plant. The flowering period is between the months of May – September. As habitat it prefers the rocky slope, moving rocks, *Pinu*s and *Quercus* forest and steppe habitats. In Turley it is spread at Bolu, Şırnak, Ağrı, Amasya, Anakara, Antalya, Çorum, Erzurum, Eskişehir, Isparta, Konya, Kütahya, Nevşehir, Sıisav and Karaman. According to the IUCN criteria it is in the LC category and there is no need to take any protective measure for this species before starting the construction. The upper layer of the ground has to be peeled off and preserved according to its method and when the itinerary will be reconstructed, this layer will cover again the ground as the top layer. The seeds and the roots in the soil will germinate again and would expedite reverting to the initial state.

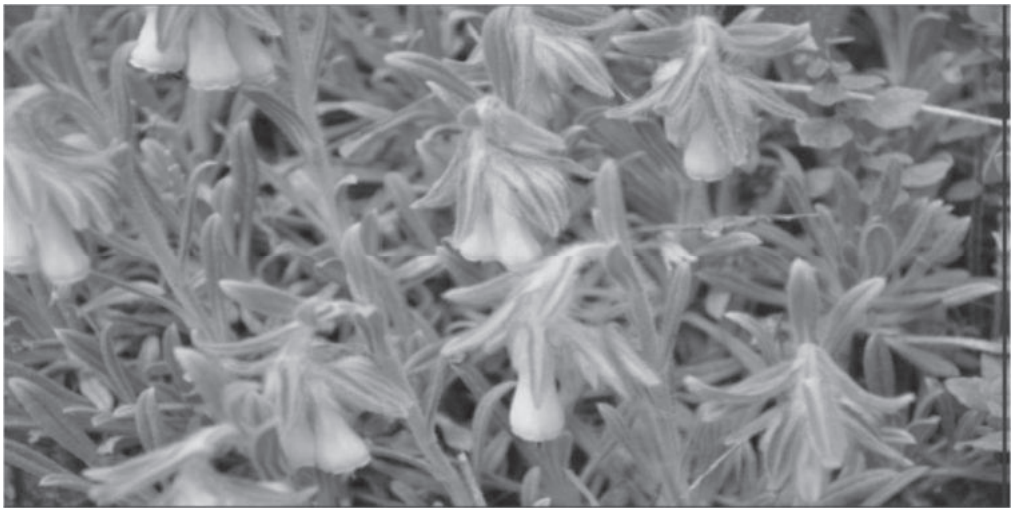


Figure 37 - Onosma isauricum Boiss. & Heldr.

Minuartia anatolica* (Boiss.) Woron var. *Anatolica

Minuartia anatolica (Boiss.) Woron var. *Anatolica* species is a perennial plant. The flowering period is between the months of June – July. As habitat it prefers the rocky areas.In TGurkey it is spread in Anatalya, Balıkesir, Burdur, Bursa, Denizli, Isparta and Izmir. According to the IUCN criteria it is in the LC category and there is no need to take any protective measure for this species before starting the construction. The upper layer of the ground has to be peeled off and preserved according to its method and when the itinerary will be reconstructed, this layer will cover again the ground as the top layer. The seeds and the roots in the soil will germinate again and would expedite reverting to the initial state.

Figure 38 - Minuartia anatolica (Boiss.) Woron var. Anatolica

Evaluation of the Project area from the International Agreements view point

The evaluation of the florisitic list of the Bozüyük WIND Power Energy Plant area leads to the conslusion that in the area there is none of the plant species taken under protection and prohibited to be commercialized pursuant to the CITES Coınvention (Convention concerning the comercializaiton of the endangered animal and plant species) signed at Washington. Moreover, the plant species under protection according to the "Convention for the Conservation of the European Wildlife and Natural Habitats", which Turkey officially approved on January 9th, 1984 by becomng a party of it,are not in the project area.

Conclusions from the Floristic viewpoint

In the project area there were identified 5 endemic endemic plant species. These species are Abies nordmanniana (Stex) Spach subsp. *bornmuelleriana* (Mattf.) Coode & Cullen (LC), *Anthemis aciphylla* Boiss.var. *discoidea* Boiss. (LC), *Onosma isauricum* Boiss. & Heldr. (LC), *Campanula lyrata* L. Subsp. *lyrata* (LC), and *Minuartia anatolica* (Boiss.) Woron var. *anatolica* (LC).

Provided that the measures suggested in the PROTECTIVE MEASURES of the report will be taken, there is no objection from the floristic viewpoint concerning the project subject activity.

Chart 20 – Bozüyük WIND Power Energy Plant Floristic List

Familia	Species	Turkish name	Phyto-geographical region	Habitat	Relative abundence	Endemism	Danger category
PTERIDOPHYTA		---	---				
Hypolepidaceae	*Pteridum aqualinum (L.) Kuhn*	---	---				
SPERMATOPHYTA		Eğrelti (Fern)	---	x	x		LC
GYMNOSPERMAE		---	---				
Cupressaceae	*Juniperus excelsa Bieb. subsp. excelsa*	---	---				
	Juniperus oxycedrus L. subsp. oxycedrus	Ardıç (Juniper)	---	x	x		LC
		---	---	x	x		LC
Pinaceae	*Abies nordmanniana (Stex) Spach subsp. bornmuelleriana (Mattf.) Coode & Cullen*	Göknar(Fir)	Auxin element	x	x	x	LC
	Pinus nigra Arn. subsp. pallasiana (Lamb.) Holmboe	Karaçam (Blackpine)	---	x	x		LC
	Pinus zylvestris L.	Sarı çam (Scotch pine)	---	x	x		LC

ANGIOSPERMAE		---	---																	
DICOTYLEDONES		---	---																	
Aceraceae	*Acer platanoides L.*	Akça ağaç (maple)	European - Siberian element	x								x								LC
Apiaceae	*Daucus carota L.*	Havuç (carrot)	---					x					x							LC
	Eryngium campestre L. var. virens Link.	Çakır dikeni (eryngo)	Iranin- Turan element					x					x							LC
	Scandix aucheri Boiss.	Fesçi tarağı(common teasel)	---					x				x								LC
	Torilis leptophylla (L.) Reichb.	Torilis	---	x				x					x							LC
Araliaceae	*Hedera helix L.*	Orman sarmaşığı (forest ivy)	---	x										x						LC
Aristolochiaceae	*Aristolochia pallida Willd.*	Lohusa out (snakeroot)	---					x				x								LC
Asteraceae	*Achillea millefolium L. subsp. millefolium*	Civan perçemi (nose bleed plant)	European - Siberian element					x						x						LC
	Anthemis aciphylla Boiss. var. discoidea Boiss.	Papatya (daisy)	---					x					x						x	LC
	Anthemis tinctoria L. var. tinctoria	Sarı papatya (camomille)	---					x					x							LC
	Bellis perennis L.	Bellis	European - Si--- berian element	x						x				x						LC
	Carlina oligocephala Boiss. & Kotschy subsp. oligocephala	Karlina (Carlina)						x					x							LC

Centaurea depressa Bieb.	Yanar döner	---				x		x		x						LC
Centaurea urvillei DC. subsp. stepposa Wagenitz	Yanar döner	Iranin- Turan element				x				x						LC
Centaurea virgata Lam.	Yanar döner	Iranin- Turan element						x		x						LC
Chondrilla juncea L. var. juncea	Condrilla	---				x		x		x						LC
Cichorium intybus L.	Hindiba (chicory)	---				x		x			x					LC
Cirsium vulgare (Savi) Ten.	Deve dikeni (Thistle)	---	x								x					LC
Cirsium hypoleucum DC.	Deve dikeni (Thislte)	European - Siberian element	x									x				LC
Crepis foetida L. subsp. foetida	Hindiba (chicory)	---				x					x					LC
Crepis reuterana Boiss. subsp. reuterana	Hindiba (chicory)	Mediterranean Sea element				x					x					LC
Doronicum orientale Hoffm	Doronicum	---	x									x				LC
Echinops ritro L.	Kirpi başı (Globe thistle)	---				x		x			x					LC
Hieracium pannosum Boiss.	---	Mediterranean Sea element	x			x				x						LC
Mycelis muralis (L.) Dum.	---	European - Siberian element	x									x				LC
Leontodon asperrimus (Willd.) J. Ball & May.	Köpek dişi (dog tooth)	Iranin- Turan element	x						x							LC
	Kenger (Acanthus)	European - Siberian element						x		x						LC

	Scorzonera laciniata L. subsp. laciniata	İskorçin (oyster plant)	---			x			x								LC
	Sonchus asper (L.) Hill. Subsp. glaucescens (Jordan) Ball.	Sonchus	---			x				x							LC
	Taraxacum officinale Weber	Hindiba (chicory)	---			x				x							LC
	Xanthium spinosum L.	Pıtrak (Xanthium)	---					x		x							LC
	Xeranthemum annuum L.	Ölmez otu (Immortelle)	---			x				x							LC
Boraginaceae	*Anchusa undulata L. subsp. undulata*	Sığır kulağı	Mediterranean Sea element			x			x								LC
	Cerinthe minör L. subsp. auriculata (Ten.) Domac.	---	---			x			x								LC
	Cynoglossum creticum L.	Cynoglossum	European - Siberian element			x				x							LC
	Echium vulgare L.	Sığır dili (Anchusa)	Mediterranean Sea element			x				x							LC
	Myosotis lithospermifolia Willd.	Unutma beni çiçeği (forget me not)	European - Siberian element			x			x								LC
	Onosma isauricum Boiss. & Heldr.	Emzik otu	Iranin- Turan element			x			x							x	LC
Brassicaceae	*Alyssum minus (L.) var. minus*	---	---			x			x								LC
	Alyssum dezertorum Stapf var. dezertorum	Uyuz out (scabious)	---			x				x							LC
	Lepidium campestre (L.)R. Br.					x				x							LC

	Capsella bursa-pastoris (L.) Medik	Çoban çantası (Sheperd's pouch)	---			x		x			x							LC
	Cardaria draba (L.) Desv. subsp. draba	Kardarya (Cardaria)	---					x			x							LC
	Rorippa sylvestre L.	Rorippa	---					x			x							LC
	Thlaspi perfoliatum L.	Akça çiçeği	---			x				x								LC
	Turritis laxa (Sibth & Sm.) Hayek	---	---	x						x								LC
Campanulaceae	*Campanula lyrata L. subsp. lyrata*	Çan çiçeği (Bellflower)	Mediterranean Sea element			x				x							x	LC
Caprifoliaceae	*Sambucus nigra L.*	Mürver (Sambucus)	European - Siberian element	x		x					x							LC
Caryophyllaceae	*Ceraztium banaticum (Rech) Heuffel*	Boynuzlu ot	---			x					x							LC
	Dianthus micranthus Boiss. & Heldr.	Karanfil (Carnation)	---			x					x							LC
	Dianthus leptopetalus Willd.	Karanfil (Carnation)	---			x					x							LC
	Holosteum umbellulatum L. var. glutinosa (Bieb.) Gay	---	---			x					x							LC
	Minuartia anatolica (Boiss.) Woron var. anatolica	Minuartiya	---			x					x							LC
	Silene vulgaris (Moench) Garcke var. vulgaris	Nakıl (catchfly)	---			x					x						x	LC
		---	---	x						x								LC

	Silene alba (Miller) Krause subsp. divaricata (Reichb.) Walters	Nakıl (catchfly)	---	x						x				x						LC
Cistaceae	*Cistus laurifolius L.*	Laden (Rock rose)	Mediterranean Sea element	x									x							LC
	Helianthemum nummularium (L.) Miller subsp. nummularium	Güneş gülü (Sun rose)	---					x					x							LC
Corylaceae	*Carpinus betulus L.*	Gürgen (Hornbeam)	European - Siberian element	x								x								LC
	Corylus avellana L. var. avellana	Fındık (Hazelnut)	European - Siberian element	x								x								LC
Crassulaceae	*Sedum acre L.*	Dam koruğu (wall pepper)	---	x				x		x				x						LC
Dipsacaceae	*Dipsacus laciniatus L.*	Fesçi tarağı (Common teasel)	---	x				x					x							LC
	Scabiosa argentea L.	Uyuz out (Scabium)	---					x					x							LC
Euphorbiaceae	*Euphorbia apios L.*	Sütleğen (gum- plant)	Mediterranean Sea element					x					x							LC
	Euphorbia helioscopia L.	Sütleğen (gum- plant)	---					x				x								LC
	Euphorbian macroclada Boiss.	Sütleğen (gum- plant)	Iran – Turan element					x					x							LC
Fabaceae	*Argyrolobium biebersteinii Ball*	---	---					x					x							LC
	Astragalus elongatus Willd. subsp. elongatus	Geven (Wild liquorice)	Iran – Turan element					x				x								LC
	Chamaecytisus austriacus (L.) Link	Süpürgelik	European - Siberian element					x					x							LC

	Genista lydia Boiss. var. lydia	Katır tırnağı (dyer's broom)	---					x				x								LC
	Lathyrus digitatus (Bieb.) Fiori & Paol.	Mürdümlük (prune)	---	x								x								LC
	Lathyrus laxiflorus (Desf.) O. Kuntze subsp. laxiflorus	Mürdümlük (prune)	---					x				x								LC
	Lotus corniculatus L. var. corniculatus	Lüfer out (bluefish grass)	---					x					x							LC
	Ononis pubescens L.	Koyun kıran (st john's wort)	Mediterranean Sea element	x				x				x								LC
	Trifolium arvense L. var. arvense	Üç gül (three roses)	---							x		x								LC
	Trifolium campestre Schreb.	Üç gül (three roses)	---					x		x			x							LC
	Trifolium pratense L. var. pratense	Üç gül (three roses)	---					x		x			x							LC
	Trigonella procumbens (Besser) Reichb.	Buy Boy	---					x				x								LC
	Trigonella spruneriana Boiss. var. spruneriana	Buy Boy	---					x				x								LC
	Vicia cracca L. subsp. stenophylla Vel.	Fiğ (Common vetch)	---	x				x					x							LC
Fagacene	*Fagus orientalis Lipsky*	Kayın (Beech)	European - Siberian element	x									x							LC
	Quercus petraea (Mattuschka) Liebl. Subsp. petraea	Meşe (Oak)	---	x								x								LC

	Quercus cerris L. var. cerris	Meşe (Oak)	Mediteranean Sea element	x						x									LC
Geraniacese	*Erodium acaule (L.)Becherer & Thell*	Turna gagası (Cranesbill)	Mediteranean Sea element				x		x		x								LC
	Geranium tuberozum L. subsp. tuberozum	Turna gagası (Cranesbill)	---				x		x		x								LC
	Geranium zylvaticum L.	Turna gagası (Cranesbill)	---	x						x	x								LC
Hypericacese	*Hypericum calycinum L.*	Binbirdelik out (Creepin g st john's wort)	European - Siberian element				x			x									LC
Lamiacese	*Ajuga chamaepitys (L.) Schreber subsp. chia (Schreber) Arcangeli var. chia*	Mayasıl out (pıurple fox glove)	---				x				x								LC
	Clinopodium vulgare L. subsp. arundanum (Boiss.) Nyman.	---	---	x						x									LC
	Lamium purpureum L. var. purpureum	Ballı baba (dead-nettle)	European - Siberian element				x				x								LC
	Lamium maculatum L. var. maculatum	Ballı baba (dead-nettle)	European - Siberian element				x				x								LC
	Mentha peregrinum L.	Nane (peppermint)	---				x			x									LC
	Phlomis longifolia Boiss. & Bal. var. longifolia	Kudus adaçayı (sage)	---				x				x								LC
	Prunella vulgaris L.	---	European - Siberian element				x					x							LC
	Salvia zclarea L.	Adaçayı (Clary sage)	---				x				x								LC

Plumbaginaceae	*Acantholimon acerosum (Willd.) Boiss. var. acerosum*
Polygalaceae	*Polygala pruinosa Boiss. subsp. pruinosa*
Polygonaceae	*Rumex pulcher L.*
	Rumex tuberosus L. subsp. tuberosus
Primulaceae	*Cyclamen coum Miller var. coum*
	Primula vulgaris Huds. Subsp. vulgaris
Ranunculaceae	*Adonis flammea Jacq.*
	Ranunculus arvensis L.
	Ranunculus constantinopolitanus (DC.) d'Urv.
	Ranunculus damascenus Boiss. & Gaill
	Helleborus orientalis Lam.
Resedaceae	*Reseda lutea L. var. lutea*
Rosaceae	*Agrimonia repens L.*

Adaçayı (Clary sage)	---
Karabaş (French lavander)	Mediteranean Sea element
Kısa Mahmut (wall germander)	European - Siberian element
Kekik /thyme)	---
Ökse otu (Mistletoe)	---
Hatmi (Hibiscus)	---
İncir (fig)	---
Yakı otu (hairy willowherb)	---
Yakı otu (fireweed)	European - Siberian element
Şahtere (Fumewort)	---
Boynuzlu kimyon (cumin)	---
Gelincik (corn poppy)	---
Sinir otu (common plantain)	---
Sinir out (broad leaved plantain)	---

				x						x						LC
				x					x							LC
x				x						x						LC
				x				x								LC
x								x								LC
						x		x								LC
				x				x								LC
				x				x								LC
x								x								LC
				x					x							LC
				x					x							LC
				x					x							LC
						x		x								LC
						x		x								LC

	Salvia viridis L.	Kar dikeni (prickly thrift)	---					x						x						LC
	Stachys recta L. subsp. subcrenata (Vis.) Brig.	Süt otu (möik wort)	---					x					x							LC
	Teucrium chamaedrys L. subsp. chamaedrys	Labada (narrow leaved dock)	---	x				x						x						LC
	Thymus longicaulis C. Presl. Subsp. longicaulis var. subisophyllus (Barbas) Jalas	Labada (curled dock)	---					x				x								LC
Loranthacese	*Viscum album L. subsp. album*	Siklamen (Cyclamen)	---	x								x								LC
Malvacese	*Alcea pallida Waldst. & Kit.*	Çuha (primerose)	European - Siberian element							x		x								LC
Moracese	*Ficus carica L. subsp. carica*	Hava civa out (Red root)	---					x				x								LC
Onagracese	*Epilobium hirsutum L.*	Düğün çiçeği (Buttercup)	---					x				x								LC
	Epilobium montanum L.	Düğün çiçeği (wedding flower)	---	x								x								LC
Papaveracese	*Fumaria officinalis L.*	Düğün çiçeği Crow foot)	European - Siberian element					x					x							LC
	Hypecoum imberbe Sibth. & Sm.	Çöpleme (hellebore)	European - Siberian element					x					x							LC
	Papaver rhoeas L.	Reseda	---					x					x							LC
Plantaginacese	*Plantago lanceolata L.*	---	---							x		x								LC
	Plantago majör L. subsp. major									x		x								LC

	Crataegus monogyna Jacq. subsp. monogyna	Akdiken (white thorn)	---	x					x									LC
	Fragaria vesca L.	Dağ çileği (Wşld strawberry)	---	x							x							LC
	Potentilla recta L.	Beş parmak out (mid summer silver)	---				x			x								LC
	Potentilla reptans L.	Beş parmak out (creeping cinquefoil)	---				x			x								LC
	Prunus spinosa L. subsp. dasyphylla (Schur.) Domin	Erik (prune)	---	x						x								LC
	Pyrus elaeagnifolia Pallas subsp. elaeagnifolia	Ahlat (wild pear)	---	x						x								LC
	Rosa canina L.	Gül (rose)	---	x						x								LC
	Rubus canescens DC. var. canescens	Böğürtlen (blackberry)	---	x			x	x			x							LC
	Rubus sanctus Schreb	Böğürtlen (dewberry)	---	x			x			x								LC
	Sanguisorba minor Scop. Subsp. muricata (Spach.) Briq.	Küçük çayır düğmesi (little field job's tears)	---				x				x							LC
Rubiaceae	*Asperula pestalozzae Boiss.*	Asperula	European - Siberian element	x							x							LC
	Galium verum L. subsp. verum	Yoğurt out (goose grass)	European - Siberian elemen	x			x				x							LC
Scrophulariaceae	*Digitalis ferruginea L. subsp. ferruginea*	Yüksük out /thimble flower)	European - Siberian elemen	x						x								LC

	Linaria corifolia Desf.	Nevruz (wild snap dragon)	---					x					x							LC
	Melampyrum arvense L. var. arvense	---	European - Siberian element					x				x								LC
	Verbascum glomeratum L.	Sığır kuyruğu (adam's flannel)	---	x									x							LC
	Veronica chamaedris L.	Yavşanotu (gipsyweed)	European - Siberian element					x					x							LC
	Veronica scutellata L.	Yavşanotu (water pumpernel)	---					x					x							LC
Thymelaeaceae	*Daphne pontica L.*	Yalancı defne (pseudo dafne)	European - Siberian element	x								x								LC
Urticaceae	*Urtica dioica L.*	Isırgan (stingşng netle)	European - Siberian element	x				x		x			x							LC
Valerianaceae	*Valerianella coronata (L.) DC.*	Kedi kuyruğu (cattail)	---					x				x								LC
Violaceae	*Viola kitaibeliana Roem & Schult*	M enekşe (violet)	---	x									x							LC
MONOCOTYLEDONES																				
Amaryllidaceae	*Galanthus garicilis Celak*	Kardelen (snow drops)	Mediterranean element	x									x							LC
Araceae	*Dracunculus vulgaris Schott & Endl.*	Yılan yastığı (snake pillow)	---					x				x								LC
Cyperaceae	*Carex pendula Hudson*	Ekşi out (sourweed)	European - Siberian elemen						x				x							LC
	Carex halleriana L.	Ekşi out (sourgrass)	Mediterranean element						x				x							LC
Juncaceae	*Juncus submodulosus Schrank*	Kofa (narrow leaved reedmace)	---						x	x			x							LC

Liliacese	*Allium paniculatum L. subsp. paniculatum*	Soğan (onion)	Mediterranean element					x				x								LC
	Allium orientale Boiss.	Soğan (onion)	Mediterranean element					x					x							LC
	Asphodeline lutea (L.) Reichb.	Çirişotu (asphodel)	Mediterranean element					x					x							LC
	Colchicum bivonae Guss.	Acı çiğdem (meadow saffron)	Mediterranean element	x									x							LC
	Muscari neglectum Guss.	Misk (mugwort)	---					x						x						LC
	Ornithogalum pyrenaicum L.	Tükürükotu (ornithogalum)	---					x					x							LC
	Ruscus aculeatus L. var. aculeatus	Yılbaşı çiçeği (easter cactus)	---	x									x							LC
	Ruscus hypoglossum L.	Tavşan memesi (butcher's broom)	European - Siberian element	x									x							LC
Poacese	*Brachypodium sylvaticum L.*	---	---					x				x								LC
	Bromus japonicus Thumb. subsp. japonicus	Brom	---					x		x			x							LC
	Bromus sterilis L.	Brom	---						x				x							LC
	Cynodon dactylon (L.) Pers. var. dactylon	Ayrık (Witchgrass)	---					x		x			x							LC
	Cynosurus cristatus L.	---	European - Siberian element					x				x								LC
	Echinaria capitata (L.) Desf.	---	---					x					x							LC

Elymus hispidus (Opiz) Melderis subsp. hispidus	Elym	---							x			x							LC
Festuca callieri (Hackelex st Yves.) F. Markgraf subsp. callieri	Fetük	---					x					x							LC
Lolium perenne L.	Çim (green grass)	European - Siberian element					x		x		x								LC
Phleum montanum C. Koch subsp. montanum	Filöl	---					x				x								LC
Poa bulbosa L.	Çim (green grass)	---						x				x							LC
	Çim (green grass)	---					x	x				x							LC
	---	---					x					x							LC

FAUNA

Land studies were conducted by Prof. Dr. Şakir Önder ÖZKURT in the project area and its surroundings. The land studies consisted of observations of the local vertebrate fauna (excluding birds) components and their ecologic stakeholders and the habitats used by these components and their stakeholders in order to meet their ecologic and biologic needs, of habitat examinations and evaluations. The results of the data collected in the land studies were evaluated along with the available literature and finally there were 88 vertebrate species (frogs, reptiles and mammals) identified in the project implementation area.

Data were collected by the vertebrate expert from the project implementation area, its impact zone and from the land ecosystem it belongs to; in addition, one on one interviews took place with the local people and hunters. Apart from this, data of the studies previously conducted on land vertebrates within the scope of various researches, were also evaluated. The data collected during these studies from the animal hair, footprints and feces, photographs, sounds and skins belonging to the vertebrates in Bozüyük, were used to identify the living species in this area. The Vertebrate Fauna living in the area was identified by evaluating the results of the study along with the available literature. The literature used for identifying the species found in the area is given in the sources part.

After the identification of the land vertebrate species living in the project implementation and impact area cased on the study results and the available literature, the charts defining the national and international danger/ protection status of the identifies species were prepared. The status was evaluated according to the European Red List made by IUCN (International Union for the Conservation of Nature) and submitted in the form of charts using the standard symbols in the lists. Apart from this, the land vertebrate species identified by these studieswere evaluated pursuant to the additional lists (Attachment II and III) compiled by the Bern Convention for fauna and were shown in the group charts. The bird and mammal species identified in the project and impact area we evaluated also according to the 2017 – 2018 decisions of the Central Hunting Commission and were presented in charts.

Current Status

The Bozüyük Power Plant Turbine and Switchyard Project is planned to be located on the hills forming the transit zone from the Anatolian Plateau to the Marmara region, displaying the characteristics of the ecosystem formed by forest glades the vegetation of which consists 90% of not- evergreen and coniferous vegetation found at altitudes ranging from 850 m to 1800 m. From the climate viewpoint, the areas are in the ecosystem area expanding from Middle Anatolia to the Anatolian inlands of the Marmara Region where after the snowy winter and the spring come the hot and dry summer and autumn seasons. The vegetation is formed by very popular perennial trees among which beech, oak and black pine are predominant.

The 88 Vertebrate species (except birds) identified in the project implementation area and its close surroundings can survive as long as they can satisfy their ecologic needs in these habitats, otherwise they join the population existent in the neighbor habitats. The 9 frog species, 26 reptile species and 51 mammal species identified in the implementation area can survive as long as they can satisfy their ecologic needs in these habitats.

The vertebrate species identified in the habitat that is part of the ecosystem in which the implementation is done are in general species with high ecologic tolerance, widely spread and which can migrate to the neighbor habitats when they need.

Amphibians

The 9 amphibian species identified within the borders of the Bozüyük Wind Power Energy Plant Turbine and Switchyard Project area ecologic impact area are living in and at the edge of the small, still and flowing waters, in the damp forest and shrubby areas formed by the non- evergreen vegetation, in the rocks fissures and under the stones, where they can satisfy their biologic needs. Especially, the land species are hiding silently during the day and become active at night in order to feed and reproduce.

According to the evaluation of the protection status of the Amphibian species identified in the Project area and to the list prepared and updated by IUCN European Red List (ERL) it has been concluded that the 9 amphibian species are in the " LC" (lowest danger level) category. According to the BERN Convention 6 amphibian species are in Attachment III, this is in the "List of Species Under Absolute Protection" and 3 amphibian species are in Attachment II, this is in the "List of Species Under Protection. The 3 are Salamanders and the 6 are Frogs.

There is no endemic species among the amphibian species identified in the project implementation and impact area.

Reptiles

The reptile species in the Bozüyük Wind Power Energy Plant Turbine and Switchyard area, were identified in order to be able to make the evaluation of the ecosystem where the planed project activity will be running. The project implementation area and its close neighborhood are habitats under intense anthropogenic pressure and the reptiles in this area are living in rocky pastures, along the field borders and in the bushes. The observations and the interviews made in the area resulted in the identification of 26 species living there. 3 of these are turtles, 2 are agamid lizards, 8 are lizards and 13 are snakes.

According to the evaluation based on the European Red List (ERL) prepared by IUCN, among the 26 reptile species identified in the project area and ecologic impact area, 1 species is in category VU, 1 species is in category NT (almost in danger). Among the species which are not in danger in the moment but are candidates for categories VU, EN or CR, 15 species are in the "LC" category (Least Concern) and 9 species are in the "NE" (No Evaluation) category.

According to the BERN Convention additional lists, in the project area and ecologic impact area there are 15 species in Attachment II and 11 species in Attachment III.

According to the CITES Convention 1 reptile species (*Testudo graeca* = Common turtle) is in Attachment II.

There is no endemic reptile species identified to be living in the Project area and the ecologic impact area.

Mammals

The land observations made for identifying the mammal animals (Insectivores, Bats, Rabbits, Rodents, Predators and Hoofed animals) living in the Bozüyük Wind Energy Power Plant and Switchyard Project Implementation areas and the interviews with the local people were evaluated together with the available literature. When the chart of the mammal animals in the area was compiled, the available fauna was listed along with the ecosystem to which is belongs, because the vertebrate animals, due to their commotion ability, sometimes can come to and go from the areas that acquired anthropogenic characteristics and can even get adapted.

As the result of the area study and literature evaluation and of the interviews held in the project implementation area within the ecologic impact borders, 51 mammal species were identified as living in the project area and environmental impact area. Among these 5 are insectivores, 1 is porcupine, 1 is rabbit, 15 are bats, 14 are rodents, 10 are carnivores and 2 are double hoofed.

According to the evaluation based on the IUCN European Red List (ERL), among the mammal species identified as living in the project area and ecologic impact area, 48 species are in category "LC" category (Least Concern), 3 species are VU (very much endangered wild species), 2 are in category NT (almost in danger). Among the species that are not in danger in the moment but are candidates for categories VU, EN or CR, there is 1 species are in the DD category (Insufficient data) , the category of the species about which there is insufficient information.

According to the BERN Convention additional lists, in the project area and ecologic impact area there are 25 species in Attachment II of the Bern List; 12 mammal species in Attachment III. The other 11 mammal species do not figure in any of the lists attached to Bern Convention.

According to the evaluation based on lists defined in the the 2017 – 2018 decisions of the Central Hunting Commission (MAK): 4 mammal species are in Attachment I and 3 mammal species are in Attachment II.

According to the CITES Convention 4 mammal species are in Attachment II and 1 mammal species is in Attachment III.

***Myotis capacinii* (Long-legged Bat):** IUCN Category: VU- A4bce = Wildlife species under high extinction risk, their population reduced by 80% during the last 10 years. It has big rear legs and is different from the other Myotis species due to its flying skin connected to the upper part of the ankle. It looks furry and woolen. It lives in caverns. It makes hunting flying tours in humid environments. It was registered in Turkey in the Mediterranean, Marmara and Aegean regions and in Nevşehir, Ordu, Ş.Urfa, Bitlis.

***Miniopteris schreibersii* (Long- winged bat)**: IUCN category: NT= (almost endangered), species that is not in danger in the moment but is candidate for categories VU, EN or CR. *Miniopteris schreibersii* (Long-winged bat): the wings are very long and sharp tipped. The mouth and nose are short, the forehead is round. The back fur is brown and the abdomen is is light brown. It lives far from the residential areas, in caves in open lands. During the reproduction period they live in large colonies. In Turkey they were recorded in the Kırklareli, Istanbul, Muğla, Burdur, Karabük, Antalya and Kahramanmaraş provinces and scattered in the other regions.

Bio variety of the Project Implementation Area

The results of the land studies carried in the project area determined that there were 88 Vertebrate species (Amphibians= Frogs, Reptilians= Reptiles and Mammals= Mammary) identifiable in the project area and its impact area. Looking at the habitat using features it has been observed that the vertebrate species living in the area are species with high ecologic tolerance and quite widely spread across the habitat they live in. It has been noticed that the project implementation and impact is temporary for some vertebrate species and permanent for some others. Among the mentioned species, the project implementation area is the permanent habitat of the Lizards, Snakes, Insectivores and Rodents. During the works, these fast moving species will be pushed to leave the area by making noises and by hitting lightly the ground, whereas the other species with restricted moving capacity, will be carried in an appropriate way to the alternative habitats around. The other vertebrate species that use the area according to the seasons and the times when they can find food, will move themselves towards other habitats and, following the restoration to be initiated after completion of the works, they will come back the the habitat will get to its old condition because the territory of these vertebrates is very large.

The protection status of the 88 vertebrate species identified in the project implementation area and its close neighborhood was evaluated as below:

According to IUCN= International Union for the Protection of Nature and Natural Resources

72 species LC : (minimum danger) : widely spread species

4 species VU : (Vulnerable) : Wildlife species under highest threat of extinction,

4 species NT : (almost endangered): species that are not in danger in the moment but are candidates for categories VU, EN or CR.

9 species NE : (no evaluation done) in the category of the species of which the compliance to the above criteria has not been evaluated until now.

1 species DD : (insufficient data) species about which there is not sufficient information available According to BERN : Convention for the Protection of the European Wildlife and Natural Habitats 43 species Attachment II : Absolutely protected species,

29 species Attachment III : Included in the protected species category,

According to CITES: International Agreement regarding the commercialization of the endangered natural fauna and flora :

5 species Attachment II : Absolutely protected species,

1 species Attachment III : Protected species

According to MAK : 2017 – 2018 decisions of the Central Hunting Commission

4 species Attachment I : in the list of Game Animal under the Protection of the Central Hunting Committee
3 species Attachment III: in the list of "Species Permitted to be Hunted during the Announced Periods" of the 2017 – 2018 Hunting season.

The Habitat characteristics of the project implementation area

The project implementation area is located in the ecotone zone of the Middle Anatolian steppe, far to the East of the Marmara region. There are 5 types of habitat in this part of the Marmara region extending geographically from the Anatolian steppes towards Uludağ and which has a Black Sea vegetation structure.

The most widespread is the forest vegetation where the inner glades inside the forest represent the 2nd grade common habitat. The agricultural areas/ settlement areas located in the inner forest glades represent another type of habitat. Although few, rocky areas can be seen in the zone. Apart from this, the riparian vegetation type that grows on the sides of the temporary and permanent streams flowing in the valley beds is another type of habitat.

Among the available habitats, the areas covered with forest vegetation are a permanent occupancy area for most of the 88 vertebrate species identified. The steppe vegetation is the permanent occupancy area for many of the Rodents.

The alternatives of the vertebrate habitats which could be damaged or destroyed by the project implementation are available in the neighbor areas.

Figure 39 – Forest vegetation in the project implementation area

Figure 40 – Inner forest glades and settlement areas in the project implementation area

Figure 41 – View from the planned installation zone of the Bozüyük Wind Power Energy Plant Turbines and Switchyard area

Characteristics of the Vertebrates in the Project Implementation Area

Among the amphibians identified in the project implementation zone the Valley/Water Frog (*Pelophylax bedriagae* and *Pelophylax redribundus*) is a species that needs a water habitat and can survive in the water sources which are close to the project implementation area. The other amphibian species the Night Frog (*Pseudepidalea viridis*) and the Common Toad (*Bufo Bufo*) are active at night and live in the damp areas where they can find food. All these species possess the ability to get away when they feel the danger and their population in the project area is at a rarely seen concentration level.

Among the identified 20 amphibian species, the Common Turtle (*Testudo graeca*) is the only species identified in the Vulnerable (VU) category, VU: Vulnerable):" Wildlife species under highest threat of extinction) is a species easily available and also easy to carry away from threat. The other reptile species are species which, due to their characteristics, can get away successfully as soon as human presence is perceived.

Among the 53 mammal species identified in the project implementation area and in its similar ecologic neighborhood, 5 are insectivores, 1 is porcupine, 19 are bats, 1 is rabbit, 14 are rodents, 10 are carnivores and 2 are double hoofed. Since all of the identified mammals will react to the threat perception by getting away, in case the mammal species would be let perceive the threat during project implementation, they would prefer to get away in order to survive, as they have acquired the appropriate ecologic adaptation. Besides, since the mammals are species that succeed living together with the humans who are their stakeholders, the people in the implementation area should not perceive as threat the mammal species in the same area.

There are no endemic vertebrate species in the project area and implementation area. Moreover, any mammal species, special for the area, or whose population survival depends on the area, weren't identified.

Probable impact of the Bozüyük Power Plant Energy Turbines and Switchyard area on the Vertebrate Fauna identified in the project implementation area and its surroundings.

The ecosystem portion, in which the Bozüyük Wind Power Energy Plant and its close neighborhood are included, possess the habitat characteristics favorable for the identified 88 vertebrates (except birds) to create their niches. These vertebrate species can be found easily in the ecosystem in which the plant implementation area and its neighborhood are included. However, although the areas that will be used during the project implementations are small, this would cause the destruction or transformation of the habitats of these vertebrate species.

Related to the project implementation, the available roads of transportation will be improved or new communication roads will be constructed for providing the access to the project site. In the places where the turbines and switchyard will be located, the vegetation will cleared off to provide a clean area.

Apart from this, the human activity and the noise, which would be heard during the project period, are going to create threat for the vertebrate species in the area by leading to perceptions different from their ecologic acquisitions. During the construction works, especially the habitats of the vertebrate species using the ground will be destroyed.

Since the project activity is the installation of Wind Turbines for generating energy, the mammals group, which would be mostly affected by the activity during the operations, will be the Bats. The bats usually fly during night in order to collect insects to meet their feeding needs. During these movements, their way and direction finding abilities make them perceive any stable structure on their way. However, since the rotor blades of the turbine keep moving, the free way which is perceived when the bat send the signals becomes blocked when the bat reaches the moving rotor blade and they crush into each other. The identified bat species will use the area for feeding purposes. The bats, which nest in the settlement areas around, can fly at night in the area in order to feed themselves.

Necessary Precautionary Measures

General Precautionary Measures

* During the utilization of any area, all the stones that are in the respective area will be lifted up in order to let the vertebrates underneath them get away (the people who would do this work will have to wear gloves).
* Especially when a turtle is noticed it should be allowed the sufficient tine to get away.
* No construction works should be made in the Spring period (this the reproduction period of the vertebrates) .
* In order to protect the insect species that grow under the leaves or in the humus tumulus, from any harm during the excavation works, the ground must be hit before starting the excavation, so that they would get away.
* In case any vertebrate species is noticed during any kind of area utilization, nobody should interfere and it must be left to get away by itself.
* The implementation area should be minimized.
* During the implementation, any kind of water resource (stream, spring, fountain, etc.) available in the area should be preserved as it is.
* The roads available in the area should be used as much as possible.
* The roads which will be used should be limited by marking them in such a way that everybody would understand.
* The roads should be made in such a way that there would be no dust created or water accumulated on them.
* The drivers should be warned about the vertebrates they could see (frogs, porcupines and snakes, especially in the Spring and Summer months) .
* Before cleaning the surface vegetation on the ground in the implementation area, the vertebrate species and their tumulus or eggs should be taken away (if necessary the assistance of an expert may be required for this implementation).
* Cleaning off the vegetation in the implementation area should be done very carefully before the machine activity so that the vertebrate species would be removed from the area without being harmed.

* The surface soil of the implementation area should be peeled off and stored close to the area so that after finishing the works in the area, it could be spread again on the surface ground of the implementation area. In this way, the recovery of the bush formations would speed up.
* During the work noises should be minimized and done during daytime and, if work will continue during night, the light should also be minimized and should not be directed towards the vertebrate habitats around.
* The periphery of the implementation area should be determined and marked very clearly so that everybody working in there would perceive it and should not get out of the area borders in the course of their activities.
* The maintenance of the machinery that will be utilized should not be neglected, the sound and exhaust emissions should be periodically checked.
* The sound emission of all machinery that works loudly should be minimized.
* The trepidations/ vibrations during the activity should be minimized.
* Drivers should not horn while driving and during night should drive with the minimum necessary light.
* After the land utilization will be completed, the vegetation must be left to recover itself.
* The drivers should be trained about the vertebrate species they would frequently see in the area in order to recognize them and to know how to behave when they see these species.
* The emissions (sound, light, exhaust gas, etc.) of all vehicles that will be used have to periodically checked and minimized.
* Especially during night, short- sighted lights will be always in function.
* After the vehicles are loaded the damper will have to be covered in order to prevent the material from spreading around.
* The maximum speed in the area should not exceed 30 km.
* All the waste that comes out in the area will have to be transferred to the waste treatment and storage facilities. During transfer the transfer vehicles will follow the set transfer itinerary and will not eave any wastes around.
* The vertebrate species should be attracted towards the project implementation area by putting smell and food sources around in order to secure the control of any action that would put them in danger, such as food residues or sloughs where mosquitoes, bugs would breed.
* After the area works are finished the surface soiled that had been peeled off and stored will have to spread again on the area ground under the supervision of botanic expert and, if possible, the seeds of the species collected from the area will be spread and the area would be left to its natural succession.

Since the project activity is the installation of Wind Turbines for generating energy, the mammals group that could be mostly affected by the activity during operations will be the Bats. For this reason, a separate evaluation was made concerning Bats.

Installation/ Construction Phase

* The construction will be any time except the spring period (reproduction period of Mammals) and for the implementation area and time except between March – June and always during daytime.
* The permanent roads and building which will be constructed in the project area will be planned and constructed in such a way as to minimize the impact.
* The buildings will be as small as possible,
* Will emanate as little sound and light as possible,
* Will be isolated so that a tunnel for bats will not be created,
* Should not have any feature that would attract and house insects,
* Any noise, trepidation, lighting and other disturbing impacts during the construction works should be minimized.
* Any water resource (stream, fountain, spring, etc.) in the area should be preserved during construction as much as possible in its actual status.
* In order to minimize the risk at the installation phase, the distance between the three points of the wind sweeper and the closest bush, tree, habitat, etc., should be adjusted as minimum 50 m.
* The vegetation in the area where the turbines will be installed, have to be cleared around on a surface of diameter 50 m longer from the end point of the rotor blades.
* The lighting of the buildings will be planned in such a way as to prevent attracting insects.
* At the end of the construction works, in the areas where the vegetation had been harmed during the works, no plants transfer will be made for the recovery of vegetation, the ground will be left to recover itself.

After Installation

* During the operation period observations must be done definitely (weekly controls should be run and data collected).
* After the installation of the turbines, the foundation area cleaned of vegetation should be checked and, if dead bats are seen, they should be counted. If the damage is increasing, an expert's advice should be requested.
* In case any impact occurs, then detailed observations should be done.
* In case the installation a posteriori observation reveal a high risk for bats, the turbine should be stopped and the risk source should be investigated. The installation area might be a migration itinerary during certain periods of the year. Also, other causes, if any, should be investigated.
* During installation, the area cleaned of vegetation must be checked continuously in order to prevent plant growing.
* The enterprise should at minimum 5 km distance from any waste area.
* The heat heat radiation of the turbines should be kept under control

* Within an area of 100 m around the turbines, there should not be in any way any substance attractive (smell, color, etc.) for insects.
* In case any water source (stream, fountain, spring, etc.) available before installation has been damaged, it should be restored to regain its natural state after work completion.

Conclusions about Fauna

The results of the evaluation of the land studies made in the project area together with the available literature reveals the existence of widely spread vertebrate species in the area included in their ecosystem. It was concluded that there is no objection to the actualization of the project as long as, first at the planning stage, the planning is done using the data submitted above; the plan is implemented considering the opinions concerning the installation period; and finally, precautionary measures are developed taking into consideration the facts resulted from the observation – assessment studies to be conducted according to the suggestions made for the operation period, and as long as these measures are implemented.

CHART – 21 Species of the Amphibians found to be living in the implementation zones of the Bozüyük Wind Power Energy Plant Turbines Switchyard Project areas and in its close vicinities and their Protection status

AMPHIBIANS						
		Turkish name	BERN	IUCN	MAK	CITES
GROUP	**URODELA (CAUDATA)**					
Family	**Salamandridae**	**Semendergiller (Salamanders)**				
1.		Küçük semender (Small salamander)	Attachment III	LC	---	---
2.		Şeritli Karadenis semenderi (Striped Black Sea salamander	Attachment III	LC	---	---
3.		Pürtüklü semender (Bristled salamander)	Attachment II	LC	---	---
GROUP	**ANURA**					
Family	**Bufonidae**	**Kara kurbağaları (Land frogs)**				
4.		Siğilli kurbağa (Warty frog)	Attachment III	LC	---	---
5.		Gece kurbağası (Night frog)	Attachment III	LC	---	---
Family	**Hylidae**	**Ağaç kurbağaları (Tree frogs)**				
6.		Ağaç kurbağası (Tree frog)	Attachment II	LC	---	---
Family	**Pelobatidae**	**Sarmısaklı kurbağalar (Pelobatides)**				
7.		Toprak kıurbağası (Land frog)	Attachment II	LC	---	---
Family	Ranidae	Su kurbağaları (Water frogs)				
8.		Levanten kurbağası (Levat frog)	Attachment III	LC	---	---
9.		Ova kurbağası (Valley frog)	Attachment III	LC	---	---

CHART – 22 Species of the Reptiles found to be living in the implementation zones of the Bozüyük Wind Power Energy Plant Turbines Switchyard Project areas and in its close vicinities and their Protection status

REPTILES						
		Turkish name	BERN	IUCN	MAK	CITES
GROUP	**TESTUDINATA**					
Family	**Emydidae**	**Göl kaplumbağaları (Lake turtles)**				
1.		Benekli kaplumbağa (Spotted Turtle)	Attachment II	NT		
Family	**Geomydidae**	**Bataklık kaplumbağaları (Swamp turtles)**				
2.		Balkan çizğili kaplumbağa (Stripped Balcan turtle)	Attachment III	NE		
	Testudinidae	**Kara kaplumbağaları (Land turtles)**				
3.		Tosbağa (Common turtle)	Attachment II	VU		Attachment II
GROUP	**SQUAMATA**					
	SUB- GROUP: LACERTILIA (Lizards)					
Family	**Gekkonidae**	**Gözkapaksız gece kelerleri (**Night agamid w/o eyelid)				
4.		İnce parmaklı keler (Thin finger agamid)	Attachment II	LC		
5.		Genişparmaklı keler (Türk keleri) (Broad finger agamid)	Attachment III	LC		
Family	**Anguidae**	**Yılan kertenkelegiller (Snake Lizards)**				
6.		Yılan kertenkele)Snake lizard)	Attachment III	NE		
7.		Oluklu kertenkele (European legless lizard)	Attachment II	NE		
Family	**Scincidae**	**Parlakkertenkelegiller (Shiny lizards)**				
8.		Ince kertenkele (Ablepharus)	Attachment II	LC		
9.		Tıknaz kertenkele (Mabuya)	Attachment III	LC		
Family	**Lacertidae**	**Eski dünya kertenkeleleri (Lacertid lizards)**				
10.		İri yeşil kertenkele (Bşg green lizard)	Attachment II	LC		
11.		Yeşil kertenkele (Green lizard)	Attachment II	LC		
12.		Tarla kertenkelesi (Field lizard)	Attachment II	NE		
13.		Duvar kertenkelesi (Wall lizard)	Attachment II	LC		
	SUBGROUP: OPHIDAE (Snakes)					
Family	**Boidae**	**Boa yılanları (Boa snakes)**				
14.		Mazmuzlu yılan (Eryx)	Attachment III	NE		Attachment II
Family	**Colubridae**	**Kırbaç yılanları (Colubrid snakes)**				
15.		Hazer yılanı (Caspian snake)	Attachment III	NE		
16.		Uysal yılan (Docile snake)	Attachment III	LC		
17.		Satı yılan (Yellow snake)	Attachment III	NE		
18.		Çukurbaşlı yılan (Malpolon snake)	Attachment III	LC		
19.		Ince yılan (ok yılanı) (Speer snake)	Attachment II	LC		
20.		Kedi gözlu yılan (Cat eye snake)	Attachment II	LC		
21.		Ev yılanı (Domestic snake)	Attachment II	LC		
22.		Yarı sucul yılan (küpeli yılan) (Ear ringed snake)	Attachment III	LC		
23.		Su yılanı (water snake)	Attachment II	NE		

Family	**Typhlopidae**	**Kör yılanlar (**Night agamid w/o eyelid)				
24.		Kör yılan	Attachment III	NE		
Family	**Viperidae**	**Engerekgiller (Vipers)**				
25.		Şeritli engerek (Osmanlı engereği) (Ottoman viper)	Attachment II	LC		
26.		Boznuzlu engerek (Horned viper)	Attachment II	LC		

CHART – 23 Species of the Mammals found to be living in the implementation zones of the Bozüyük Wind Power Energy Plant Turbines Switchyard Project areas and in its close vicinities and their Protection status

MAMMALS						
		Turkish name	BERN	IUCN	MAK	CITES
GROUP	**ERINACEOPORPHA**					
Family	**Erinacaeidae**	**Kirpiler (Porcupines)**				
1.		Kirpi (Porcupine)	---	LC	---	---
GROUP	**SORICOMORPHA**					
Family	**Soricidae**	**Böcekçiller (Insectivores)**				
2.		Kafkas böcekçili (Caucasian insectivore)	Attachment III	LC	---	---
3.		Bataklık böcekçiliğ (Swamp insectivore)	Attachment III	LC	---	---
4.		Beyazdişli küçük böcekçil (White tooth tiny insectivore)	Attachment II	LC	---	---
5.		Beyazdişli böcekçil (White tooth insectivore)	Attachment III	LC	---	---
Family	**Talpidae**	**Köstebekler (Moles)**				
6.		Akdeniz köstebeği (Mediterranean mole)	Attachment III	LC	---	---
GROUP	**CHIROPTERA**					
Family	**Rhinolophidae**	**Nalburunlu yarasalar (Horse soe nose bats)**				
7.		Büyük nalburunlu yarasalar (Big horseshoe nose bats)	Attachment II	LC	---	---
8.		Küçük nalburunlu yarasalar (Small horseshonose bats)	Attachment II	LC	---	---
9.		Akdeniz nalburunlu yarasa (Mediteranean horseshonose bats)	Attachment II	LC	---	---
10.		Blasius nalburunlu yarasa (Blasius horseshoe nose bats)	Attachment II	LC	---	---
Family	**Vesperetillionidae**	**Düzburunlu yarasalar (Flat nose bats)**				
11.		Siyah bıyıklı yarasa (Black moustache bat)	Attachment II	LC	---	---
12.		Büyük fare kulaklı yarasa (Big mouse- eared bat)	Attachment II	LC	---	---
13.		Küçük fare kulaklı yarasa (Small mouse- eared bat)	Attachment II	LC	---	---
14.		Bıyıklı siyah yarasa (Black bat with Moustache)	Attachment II	LC	---	---
15.		Su yarasası (Water bat)	Attachment II	LC	---	---
16.		Uzun ayaklı yarasa (long legged bat)	Attachment II	LC	---	---
17.		Cüce yarasa (Pygmy bat)	Attachment III	LC	---	---

18.		Akdeniz cüce yarasası (Mediterranean pygmy bat)	Attachment II	LC	---	---
19.		Sert derili yarasa (Rough skinned bat)	Attachment II	LC	---	---
20.		Savi'nin cüce yarasası (Savi' pygmy bat)	Attachment II	LC	---	---
21.		Küçük ağaç yarasası (Small tree bat)	Attachment II	LC	---	---
22.		Ağaç yarasası (Tree bat)	Attachment II	LC	---	---
23.		Grniş kanatlı yarasa (Broad winged bat)	Attachment II	LC	---	---
Family	**Miniopteridae**	**Uzun kanatlı yarasalar (Long winged bats)**				
24		Uzaun kanatlı ayarsa (Long winged bat)	Attachment II	NT	---	---
	Molossidae	**Serbest kuyruklu yarasalar (Free tail bats)**				
25.		Serbest kuyryklu yarasa (Free tail bat)	Attachment II	LC	---	---
GROUP	**LAGOMORPHA**					
Family	Leporidae	Tavşanlar (Rabits)				
26.		Yabani tavşan (Wild rabit)	Attachment III	LC	Attachment I	---
GROUP	**RODENTIA**					
Family	**Sciuridae**	**Sincaplar (Squirrels)**				
27.		Anadolu sincabı (Anatolian squirel)	Attachment II	LC	---	---
Family	**Muridae**	**Fareler, sıçanlar (Rats, mice)**				
28.		Akdeniz tarla faresi (Mediterranean harvest mouse)	---	LC	---	---
29.		Tarla faresi (Harvest mouse)	---	LC	---	---
30.		Küçük kazıcı fare (Small digger mouse)	---	LC	---	---
31.		Cüce Avurtlak (Grey dwarf hamster)	---	LC	---	---
32.		Kaya faresi (Rock mouse)	---	LC	---	---
33.		Sarıboyunlu orman faresi) (Yellow neck wood mouse)	---	LC	---	---
34.		Orman faresi (Wood mouse)	---	LC	---	---
35.		Ev faresi (Mus)	---	LC	---	---
36.		Sarı ev faresi (Yellow mus)	---	LC	---	---
37.		Sıçan (Rat)	---	LC	---	---
38.		Göçmen sıçan (emigrant rat)	---	LC	---	---
Family	**Spalacidae**	**Körfareler (Spalax)**				
39		Anadolu körfaresi (Anatolian Spalax)	---	DD	---	---
	Gliridae	**Yediuyurlar (Dormouse)**				
40		Hasancık	Attachment III	LC	---	---
GROUP	**CARNIVORA**					
Family	**Canidae**	**Köpekgiller (Canines)**				
41.		Kurt (wolf)	Attachment II	LC		Attachment II
42.		Çakal (Jackal)	---	LC	Attachment I	---
43.		Tlki (Fox)	---	LC	Attachment I	---

Family	**Ursidae**	**Ayılar (Bears)**				
44.		Bozayı	Attachment II	VU	---	Attachment II
	Mustelidae	**Sansargiller (Polecats)**				
45.		Gelincik (Weasel)	Attachment III	LC	Attachment II	---
46.		Alaca sansar (Marble polecat)	Attachment II	VU	---	---
47.		Kaya sansarı (Beech marten)	Attachment III	LC	Attachment II	---
48.		Porsuk (wolverine)	Attachment III	LC	Attachment I	---
Family	**Felidae**	**Kediler (Felines)**				
49.		Yaban kedisi (Catamountain)	Attachment II	LC	---	Attachment II
50.		Vaşak (Bobcat)	Attachment III	LC	---	Attachment II
GROUP	**ARTIODACTYLA**					
Family	**Suidae**	**Domuzgiller (Swines)**				
51.		Yaban domuzu (wild boar)	---	LC	Attachment II	---
Family	**Cervidae**	**Geyikler (Deers)**				
52.		Karaca (Roedeer)	Attachment III	LC	---	---
53.		Kızıl geyik (Red deer)	Attachment II	LC		Attachment III

CHART – 24 The distribution of the vertebrates known to be living in the implementation zones of the Bozüyük Wind Power Energy Plant Turbines Switchyard Project areas, based on the IUCN, BERNN, MAK and CITES criteria

	Total number of species	IUCN					BERN		MAK		CITES		
		LC	VU	NT	NE	DD	Attachment II	Attachment II	Attachment I	Attachment II	Attachment I	Attachment II	Attachment III
AMPHIBIANS = FROGS	9	9	--	--	--	--	3	6	--	--	--	--	--
REPTILES	26	15	1	1	9	--	15	11	--	--	--	1	--
MAMMALS	53	48	3	2	--	1	25	12	4	3	--	4	1
Total	**88**	**72**	**4**	**3**	**9**	**1**	**43**	**29**	**4**	**3**	**--**	**5**	**1**

CHART – 25 Categories and abbreviations mentioned in the Fauna charts

IUCN	International Union for the Conservation of Nature
EX (extinct)	Species proven to be extinct by presenting undoubted proofs
EW (extinct in its natural habitat)	Species extinct in the wildlife but surviving in other areas (for breeding or exposing purposes)
CR (critical danger)	Species with extremely high risk of extinction in wildlife
EN (Endangered)	Species with the very high risk of extinction in wildlife
VU (Vulnerable)	Species with the very high risk of extinction in wildlife
VU A2	Species the population of which has diminished by 30% during the last 10 years
NT (Almost endangered)	Species not endangered in the moment but future candidates for the VU, EN or CR categories
LS (minimum threat)	Species widely spread
DD (Insufficient data)	Species about which there is not sufficient information
NE (no evaluation)	Species which have not been evaluated according to the above criteria until now
END	Endemic species
NA	Not usable for IUCN
BERN	Criteria for the BERN Convention on the The conservation of the European Wildlife and Natural Habitats
Attachment 2	Species absolutely under protection
Attachment 3	Protected species
2017 – 2018 MAK	**Decisions of the Central Hunting Commission**
Attachment 1	List of animal taken under protection by the Central Hunting Commission
Attachment 2	List of the "Species Permitted for Hunting during Defined Periods" for the 2017 – 2018 Hunting Season
Wild animals taken under protection by the Ministry of Forestry and Water Affairs	
B.K.	List of the wild animals taken under protection by the Republic of Turkey Ministry of Forestry and Water Affairs
CITES	International agreement on the commercialization of the endangered natural flora and fauna
Attachment 1 List	Contains the species which are faced with the extinction danger and for this reason their trade is subject to strict legislation and is possible only under exceptional conditions
Attachment 2 List	Contains species which although are not faced with absolute extinction danger, their trade is subject to certain principles in order to prevent their use contrary to the sustainability of their generations
Attachment 3	Contains all the species which any contracting party country keeps subject to the regulations within its authorization area and in relation to which it feels the need to collaborate with the other contracting countries in order to keep their trade under control for preventing their excessive use or for restricting it.

Ornithology

Methodology

The ornithology studies conducted in order to determine the impact of the Bozüyük Wind Power Energy Plant location, construction and operation upon the wild bird populations and the evaluation of this area from the migratory birds' itineraries viewpoint based on the following principles and methods .

Ornithology study areas

The ornithology site studies were in the following areas.

* The turbine installation areas formerly determined within the project scope
* The areas within the project permit area but outside the turbines installation areas (**impact area**),
* The evaluation of similar- suitable habitats in the close surroundings as "alternative areas" for the bird species that could leave the project and impact areas due to habitat loss and disturbance at the project construction and operation stages we determined and evaluated .

Data collection techniques used in the ornithological studies

The following studies were done for determining the bird species in the areas above defined, their population density and biologic activities.

* "**Direct bird species observations**" were made in the subject areas and records were kept. The birds in the different habitats of this area were observed using the "**spot observation – counting**" technique and in the transit zones between these habitat by using the "**transect observation – counting**" technique, they were observed and their species were identified and recorded (Biby & friends 1985).
* "Surveys with the local people" from these areas and neighbor villages were also conducted. In these surveys guide books with bird photographs were used, information was collected about the birds seen in these areas and more information was collected especially about the existence of the birds species which seen flying in transit during the migration season (April – September).
* Data were collected based on the ornithological observations made and research articles written before about the areas close to this zone and on the "literary works", primarily the scientific reports.

Seasons of the ornithological studies and the conducted ornithological studies

The migration season when the birds' biologic activities are most intensive was the basis for the assessment of the impact exercised by the project construction and operation upon the bird populations and for the evaluation of the area from the migratory birds' itinerary viewpoint and data on the ornithological situation were provided by the active field studies in this area. Consequently, in March 2018 field studies were made in the area and ornithological data were collected and evaluated. In the same context, our bird observation records kept in the past years in this region, especially during the migration periods (April- May- September- October) were reviewed and evaluated concerning the migratory birds and migration itineraries.

Tools and equipment used for the ornithological studies

The **1/25 000 scale geographic maps** where the project area and turbines are shown, were used for the ornithological studies (see Figure 43). Besides this, Garmin **GPS** was used in order to identify the elevations and geographical coordinates while working for the maps.

Nikon (16 x 24 mm) binoculars and a Nikon (20-80 x 80 mm) **monocular telescope** were used during the area study in order to observe the birds and identify their species. Furthermore, Canon (7D-II) **photograph apparatus** and a Canon (100 – 400 mm) tele lenses were used for taking photos of the birds and their habitats. The first thing done was to investigate the project areas with a **4 x 4 land vehicle** and identify the areas important from the ornithological viewpoint.

Methods used in the ornithological studies

During the identification of the bird species in the project areas there was no hunting – collecting (net catching)- killing. During the observation on birds, advanced technology apparatus were used. For the identification of the observed birds, also guidebooks were used (Heinzel % friends 1995).

In all project areas and the surroundings that might be alternative areas, especially in those identified to be important from the ornithological point of view, they walked on foot. The birds in the different habitats of this area were observed using the "**spot observation – counting**" technique and in the transit zones between these habitat by using the "**transect observation – counting**" technique, they were observed and their species were identified and recorded. Bird voices were also used in all these identifications. The field studies started up early in the morning and went on until sunset (Biby & friends 1985). Apart from observing the individual birds, nests, feathers, footprints, reminiscences of dead birds, feces, vomit food and food residues, traces and other signs (Brown & Friends, 2009) were searched, collected and recorded.

The way of recording and evaluating the data obtained in the ornithological studies

The birds identified in the project areas as the result of these studies were listed. The information mentioned below about the bird species listed in these bird species lists was recorded in charts and the data were evaluated separately from the ornithological point view of the area.

* The scientific systematic categories of the birds species,/Group and Family),
* The European Codes of the birds,
* The Latin, Turkish and English names of the birds,
* The way- source of getting data (observation, questionnaire, literature)
* The threat and protection status of the birds species at international scale,
    - according to the International Union for the Conservation of Nature Red List (*IUCN - Red List*),
    - according to the Global Protection Status of the BERN Convention, (*Bern Convention*),
* The threat status and categories of the bird species at national scale,
* Were determined based on the decisions of the Republic of Turkey Ministry of Forestry and Water Affairs, Central Hunting Commission (*M.A.K. 2017 – 2018*).

* The seasonal status (local, migratory) of the bird species was determined according to *Kiziroğlu, 2009*.
* Below are given the abbreviations used for the information about the bird species included in the inventory lists.

Figure 42 – Bird observations in the Bozüyük Wind Power Energy Plant project area

National and International Protection situations

IUCN Risk Categories

The IUCN Red List is a system created for categorizing the species with high risk of extinction. The IUCN Risk categories are explained below in summary.

		Extinct (EX)
		Extinct in nature (EW)
		Critical (CR)
	ENDANGERED	Endangered (EN)
		Vulnerable (VU)
(Evaluated)		Near Threat (NT)
		Low Risk (LC)
	INSUFFICIENT DATA (DD)	
Not Evaluated (NE)		

2017 – 2018 Decision of the Central Hunting Commission (M.A.K.)

The Central Hunting Commission is meeting every year within the authorization frame given pursuant to the Land Hunting Law number 4915, and determines the game to be protected countrywide during that hunting season, the game permitted for hunting and their hunting periods, time and days, amount of hunting, the forbidden hunting tools and apparatus, the forbidden hunting zones, the principles and methods of hunting for defense purposes. The decisions of the Central Hunting Commission and their explanations are given below.

Attachment 1 – Among the game identified by the Ministry of Forestry and Water Affairs, the game taken under protection by the Central Hunting Commission

Attachment 2 – The game permitted for hunting during the periods determined by the Central Hunting Commission

Bern Convention

The Convention for the Conservation of the European Wildlife and Habitats was accepted first at Bern in year 1979. Our country became a contracting party upon undersigning this convention in year 1984.

The target of this convention is to provide protection for the wild flora and fauna, primarily for the endangered and to become endangered species, especially giving priority to the migratory species, and to develop the collaboration of more than one government on this subject.

Each contracting party will will take the necessary and appropriate legal and administrative measures in order to secure especially the protection of the wild flora indicated in the Attachment 1 list. It will be forbidden to tear, collect, cut or root on purpose these plants. Each contracting party will be forbidden to keep or trade these species.

Attachment I	Flora species absolutely under protection
Attachment II	Fauna species absolutely under protection (SPFS – Strictly Protected Fauna Species)
Attachment III	Protected Fauna species (PFS – Protected Fauna Species)

The contents of the Bern Convention Clauses 6 and 7 from the fauns species viewpoint are gişven below.

Bern Convention Provisions of Clause 6:

Each contracting party will take the necessary and appropriate legal and administrative measures in order to secure especially the protection of the wild fauna indicated in the Attachment II list. Especially the following issues will be forbidden for these species:

a) Any kind of premeditated catching and keeping, premeditated killing ways;
b) Damaging and destroying on purpose their reproduction and resting places;
c) To disturb the fauna contradictory to the purpose of this convention, especially during the reproduction, growing and hibernation periods.
d) To collect eggs from the wild environment or to destroy them on purpose or to keep them, even if they are empty;
e) In situations that contribute to the efficiency of the provisions of this clause, to keep and to trade the embalmed animals and any easily recognizable part obtained from the animal or the goods in which it was used, to keep these animals dead or alive.
Attachment II: The list of the animals that must be strictly protected takes place in Attachment II. The contracting parties of the convention will take the necessary legal and administrative measures in order to secure the especial protection of the wild fauna indicated in the Attachment II. Especially the issues mentioned below will be forbidden for these species.
Attachment III: contains the list of the protected fauna species. Each contracting party of the convention will take the necessary legal and administrative measures in order to secure the especial protection of the wild fauna indicated in the Attachment III. The abuse of the wild fauna species listed in Attachment II will be adjusted in order to keep away from threat the populations taking into consideration the conditions stipulated in Article 2.
Attachment IV: The Forbidden Hunting Method and Instruments and the Other Forbidden Operation Ways.

Bern Convention Provisions of Clause 6:

1 – The contracting party will take the appropriate necessary legal and administrative measures in order to secure the protection of the wild fauna indicated in the Attachment III.
2 – Any kind of operating the wild fauna indicated in the list of Attachment III will be arranged taking into consideration the provisions of Article, so that the survival of the population would not be under threat.
3 – Measures to take will include;

a) The other principles that determine the closed hunting seasons and/ or the management;
b) In suitable situations the temporary or permanent interdiction of the management in order to have the wild fauna reach the sufficient population level;
c) The appropriate arrangements concerning the sale of dead or alive wild animals, their availability and transportation for sales purposes or their sale;

All the studies within the project scope will definitely be compliant with the provisions of Articles 6 and 7 of the Bern Convention.

The Aves (birds) species identified in the project area are given in the chart below. The "Family, Turkish name, IUCN, CITES, MAK category for each species in the charts was mentioned according o the attachments of the Bern Convention.

The species which are not in the List of Attachment 2 and Attachment 3 of the Bern Convention were marked by the sign (-). Besides, the fauna studies were evaluated based on the lists attached to the "2017 – 2018 Decision of the Central Hunting Commission".

Habitat Directive (92/43/EEC)

The Habitat Directive 92/43/EEC was enacted in year 1992. The main purpose of the directive is to preserve the biodiversity considering the economic, social, cultural and regional requirements. Although the directive contributes to the general target of the sustainable development, it targets the conservation of almost 450 animal species and 5000 plant species that are rare, under threat and endemic. About 200 rare and special habitat types were included in the conservation target in view of the characteristics (European Commission, 2014a). The Habitat Directive together with the Birds Directive constitutes the basis of the nature protection policy of Europe. The directive has two supports: the Natura 2000 net of the protected areas and the severe system for the protection of species. More than 1000 plant and animal species and more than 200 habitat types important in Europe (for example special forest types, meadows, wetlands, etc.) are under protection within the directive scope. Attachment I and Attachment II of the Directives cover the habitat types and the species that need the allocation of special areas in order to get protected. Some of these are described as "priority" habitats or species (under the threat of extinction).

Attachment	Explanation
I	Natural types of habitat in the interest area of the community that needs the announcement of private are for protection
II	The plant and animal species in the interest area of the community that needs the announcement of private are for protection
III	The selection criteria of areas suitable to announce as private area for protection important for the community.
IV	Plant and animal species in the interest area of the community that needs strict protection measures.
V	The plant and animal species in the işnterst area of the community that needs management measures for being taken from the nature and being used.

Ornithological Findings and Evaluations

In this part, the findings of the ornithological studies are submitted under topics. The evaluations of the findings are written in "Italic" style.

The identifies bird species and their systematic categories

The systematic categories (Group and Family), European codes, scientific (Latin), Turkish and English names of the bird species identified in the project areas according to the data obtained from the field observations, questionnaires and literature records, are shown in the chart below. According to this, there were 113 bird species belonging to 13 bird groups, 32 bird families identified in the project areas. Among the bird species seen in the chart, 43 are birds in the non-passerines (Nonpasseres) group and the other 70 species are birds in the passerines (Passeres)group. All of the identified 113 bird species were assigned as the result of the observations made in the field studies, of the literature and the habitat suitability and they were confirmed partially b y the questionnaires completed with the local people.

There are 468 bird species in total in ornithological fauna of Turkey. Taking this number into consideration, it means that the project areas that house almost one quarter (113 species) of the birds fauna of Turkey, posses a medium density ornithological fauna. Taking into consideration that the project areas are characterized by medium density bird species and low bird population density, and they posses appropriate habitats for the birds due to their various vegetation layers, the project areas were evaluated as medium level importance areas from the ornithological point of view. The bird species that might be found in the project areas are birds with different ecological needs since they live in different habitats. Although among the observed species there are some rare ones, the species seen there are generally seen and widely spread species.

The observation areas and data collection sources for the identified bird species

The bird species observed and identified in the Bozüyük Wind Power Energy Plant project areas and outside it according to the data obtained from the field observations, questionnaires and literature records, are shown in the chart below. Accordingly, it is supposed that there are 113 bird species in the areas where the wind turbines (48 pieces) will be installed and, since the project impact areas without turbines and the areas outside the project area have similar habitats, there might live populations of these bird species. The data about these bid species were collected through direct observations, literature, habitat suitability and other observations made by ourselves close to the area.

Along with this, the questionnaires completed with the local people were helpful. The information compiled from the interviews held with them reveals that during the migration period (April- May- September- October) they saw flying birds with large wings, big predator birds but the migratory birds with long neck (black storks, storks and other waterfowl) flying in flocks were not seen very frequently. In this context, the project areas functions as a good air corridor suitable for the migratory birds. However, they do not function as suitable accommodation for the migratory bird species.

The habitats where the identified bird species were observed, the biological activities of the birds and the availability of suitable areas outside the project area (close surroundings)

Considering the topography of the region, the project areas, especially the peaks where the turbines will be installed, are areas of quite high altitude. These peaks which in our country, especially in the Marmara region, are not very many, have a specific vegetation structure and are characteristic for the transit zone between Marmara and the Central Anatolia. The vegetation in these areas, especially where the turbine poles will be fixed, consists of forest glades, pastures and agricultural fields. The vegetation in these areas does not have a habitat favorable for the waterfowl. The vegetation in these areas is characteristic for itself and does not have habitats suitable for many bird species or high population bird species. The bird species that might live in the turbine location spots are more ground passerines. For this reason, it was concluded that the bird fauna especially in the peak zones would be relatively weak and would be represented b y fewer species – individuals. Consequently, the project areas would not cover accommodation habitats for the wildlife, especially from the birds' point of view.

This situation was evaluated as the reason why the identified number of bird species (113 bird species) and their population density at the points where the turbines will be installed is low. Furthermore, in the project area there are no still and/ or flowing wetlands (streams, lakes, muddy flat places, etc.). The data resulting from the studies show that the project areas and the areas outside them but with similar vegetation , do not possess the ecological carrying capacity necessary for them to be preferred by the birds as blind reproduction area and as accommodation area during migration. However, the Karasu Stream valley and its close surroundings were evaluated as the main migration itinerary for some bird species.

The categories of the identified bird species according to the international agreements and red lists

Among the bird species identified in the project area, according to IUCN (International Union for the conservation of Nature, Neophron percnopterus (Little Vulture) species is in the EN Category, which means that its population in is danger. Also Streptopelia Turtur (Turtledove) that uses the project areas for reproduction and feeding is in the VU category: vulnerable which means that this species is in the category close to danger. Circus macrourus (Palid harrier), Falco vespertinus (Red footed falcon), and Anthus pratensis (Meadow pipit) are in the NT category, near threatened, which means that their population is in the category close to threat.

The other 108 bird species probably seen in the project area are in the LC: Least Concern category, with the lowest risk and getting least interest. Within this scope, according to our previous studies (in the Söğut sub-province and similar habitats in its surroundings) and the experts' opinion, Neophron percnopterus (Little Vulture) that is in the threat categories (CR, EN and VU) would probably use the project areas in transit, etc. As for the other species, there is no global threat for their populations. These separately recorded species are widely spread species in the Western Pale arctic zoogeographical zone (in which Turkey is situated). The evaluation made considering these circumstances points out to the fact that during the project construction and operation stages the birds in the IUCN protection categories will not suffer any negative impact.

According to the Bern Convention (Convention for the Preservation of the European Wildlife and Natural Habitats), 81 bird species identified in the project area are in Attachment 2 (must be absolutely protected), 24 bird species are in Attachment 3 (should be protected). The other 8 species do not figure in of the categories within the scope of the Bern Convention. As noted in the chart, among the bird species identified in the area (113 species), the number of species that figure in the Bern Convention attaches lists is quite high (105 species). However, 95% of the 468 bird species identified until now in the ornithological fauna of Turkey are within the scope of Attachment 2 and Attachment 3 according to the Bern Convention. The reason of this is the fact that bird species and population densities in Europe are facing the danger of reducing. Whereas a great majority of our country's bird species is not facing, at least in the moment, problems as serious as those faced in Europe because our country is rich in ecosystems, important bird migration itineraries cross our country, due to its various climatic characteristics it has many different habitats especially for birds and, moreover, it accommodates a great part of the bird varieties and population density of the Western pale arctic zone. Within this context, taking into consideration the fact that the bird species identified in the project area are widely spread species, no negative impact is expected.

The Bird Directive is Directive number 2009/147/EC (the amended form of directive number 79/409/EEC) of the European Parliament and Commission enacted on November 30th, 2009 for the protection of the wild birds. The directive foresees the protection of 194 bird species and their subspecies identified as being under threat and needing special protective measures. According to this, none of the bird species identified in the project area are not endemic either for Turkey or for the region. Among the identified species there are only 34 which can be classified as "species that should survive again in their expansion zone and whose habitats should be subject to special protection measures" pursuant to Bird Directive Attachment I. 13 of the identified bird species are in the Bird Directive Attachment II lists. The other species do not figure in the Bird Directive lists.

According to CITES, the species Ciconia nigra (Black Stork) is in Attachment II, Falco peregrinus (Peregrine falcon)species is in Attachment I lists. The other probably available species do not figure in thye CITES attachment lists.

Categories of the identified bird species according to the decisions of the Central Hunting Commission

According to the evaluations based on the 2017 – 2018 hunting season decisions of the General Directorate of National Parks and Game Wildlife Central Hunting Commission (MAK), 18 bird species are in Attachment 1 (game protected by the Central Hunting Commission) and 13 bird species are in Attachment 2 (game whose hunting is permitted by the Central Hunting Commission during certain periods). In this connection, since the project area is not suitable for hunting and no legal hunting is practiced in the area, no negative impact is expected from the birds' point of view.

The seasonal status of the identified bird species

The seasonal status of the bird species identified in the project areas was evaluated and among these 113 bird species, 29 were found migratory species. 2 species used the area for wintering. All the other species were found to be "local bird species" that are in the area all year. Taking into consideration that the bird species are widely spread species and the majority of the birds in the area are local species, no negative impact is expected. Birds' characteristics such as the density of migratory birds, the duration of their stay in the area, their species, their flight altitudes, etc., should be observed, determined and reported by expert ornithologists during each migration season.

Probable impacts of the project on birds and precautionary measures

Among the technologies generating renewable energy "wind power energy" is increasing its contribution to the universal and national energy production due to its expansion, first in the coastal regions and then in the areas far from coasts. Although the energy production is supplied from renewable energy sources, it might create results potentially harmful for the biodiversity. The negative environmental impact should be minimized by balancing the risks and benefits. For this reason, Bonn Convention Partners' Conference (*Bonn Convention*) approved Solution 7-5 for the Wind Turbines and Migratory Birds (the 7th meeting, Bonn, September 18th- 24th, 2002). The European Council gave to the World Birds' Protection Institute (*Birdlife International 2005- 2018*) the duty to prepare the report (*Langston and Pullan 2003*) for the acceptance of draft proposals in name of the Bern Convention. An important part of the impacts and measures in this report were prepared according to the Republic of Turkey Ministry of Forestry and Water Affairs DKMP General Directorate and *Birdlife International*.

Probable Impacts of the Turbines

The scientific studies made until now and the acquired experiences, the main potentially harmful impacts (Hotker and Friends, 2004) of the wind power energy plants upon birds are described below in paragraphs (plain writing). In this part the impacts were written in plain style and *the evaluations from the project area and identified birds viewpoint, as well as the impact diminishing measures were written in "italic" style.*

Birds' collision with the moving turbine blades, structures such as turbine tower, high tension lines or the wind orientation control between the blades, are causing accidents that lead to death. *The bird species identified in the project areas, except four, are at medium level as number, are widely spread and do not figure in any threat category. The population density of these likely probable bird species is high due to the vegetation status in the project areas but in the turbine installation areas is low due to the extreme weather conditions in these places. Furthermore, the birds likely to be found in the turbine installation areas of the Bozüyük Wind Power Energy Plant project area were identified in majority as birds feeding on the ground in which do not make high altitude long flights.*

Looking from this point of view, the project areas are not an important bird zone for their feeding, resting and reproduction and since most of these birds feed on the ground and do not make high altitude long flight, the risk probability of their collision with the turbine blades quite low. This situation shows that such negative impacts on the birds in the project area at a rather low level.

* Observations show that the birds changed location due to the disturbance caused by the turbines to the areas around them, or left completely the region where the turbines function. *Birds leaving the region due to the disturbance caused in the surrounding areas by the wind turbines at the project construction and operation stages might in question. However, since the birds in this project area are mainly ground birds and native (resident) bird species this impact (leaving the region) is expected to be reversible. In fact, it was observed that, despite the current stockbreeding, pasturing, agricultural activities and the disturbing impact resulting from the human activities related to this, the birds do not leave this region. Besides, in the close surrounding there are similar and suitable alternatives with sufficient ecological capacity for the birds that would leave the area due to the impacts that might be caused by the project activities. Under these circumstances, since the birds that would leave the region, are living creatures, the negative impacts in the close surroundings and in these similar and suitable regions should be eliminated. Especially after the construction is finished and the turbines start to function, many birds are expected to return to the project area.*

* In case the birds which are forced to leave their preferred habitat cannot find an alternative habitat suitable for them, their fertility rate and drive for survival might diminish. *In the close surrounding there are similar and suitable alternatives with sufficient ecological capacity for the birds that would leave the area due to the impacts that might be caused by the project activities. For these reasons a decrease in the fertility and/or drive for survival of the birds is not expected.*

* The cause of disturbance might be the presence of turbines, and/or maintenance apparatus and humans but it may also be the construction process of the wind turbines. *In this connection, in order to reduce the impacts on the birds' fertility and drive for survival, the construction activities should be performed progressively so that the birds would be allowed the time and energy necessary o get away to suitable alternative areas. Apart from this, the construction personnel should be trained and acknowledged about these species.*

* Wind power energy plants could affect the ecological relations among the birds' feeding, wintering, reproduction and exuviations areas and would restrict birds' movements by restraining the long flights around the wind farms. This situation would increase the birds' need for energy and would impact negatively their health. (The most important concern is about the total impact of big wind power energy plans or of more than one energy plants). *The area there the wind power turbines will be installed within the scope of this project is not an ecosystem in the birds' feeding, wintering, reproduction and exuviations areas. Since most of the birds in the project areas feed on the ground and do not make high altitude long flights, the wind power turbines are not expected to restrain the birds' long flights around them and to restrict the birds' movements.*

* The habitats may undergo changes or might even disappear due to the wind power turbines and their infrastructure. *Within this project scope, the habitat change and / or disappearance is limited to the areas where the turbines will be installed and the switchyard buildings will be located. Apart from this, the fact that the area covered with annual vegetation is a characteristic that supports the potential of the area to recover quickly its vegetation. Consequently, any habitat changes and or destruction apart from the turbine and switchyard areas is not expected. In the close neighborhood there are sufficient similar and suitable alternative areas for the birds that would leave the region due to habitat changes or losses.*

Precautionary measures to take regarding the Wind Power Energy Plants

Although the project areas are evaluated as areas of little importance from the avian fauna and habitats viewpoint, the fact that the birds have the ability to fly and, taking into consideration the stringent factors that would occur in the feeding shelter areas due to strong winds and different ecologic effects, taking precautionary measures becomes a requirement. The opinion is that, should these measures be taken, then the impact and/ or the impact risk probability of the project elements on the native birds and/ or birds in transit would be minimized.

**** Painting the turbine poles and blades**: in order to reduce to minimum the impact of the wind power turbines on the wildlife and primarily on birds, the turbines must get visible – noticeable –premonitory characteristics relative to birds. In this context the turbine poles and blades must be painted white. This measure widely implemented all over the world, makes it easy for the birds in the habitats where the turbines are installed, to distinguish the turbine poles and blades during the day. In order to increase the possibility of distinguishing better the blades on the poles (to prevent the birds from approaching and colliding with the blades) the ends of the blades should be painted in color contrasting white. The color that will be chosen for the blade ends should be "orange- red" which can be easily and more distinguished even in foggy weather.*

* The studies conducted until now show that the birds can distinguish more the blades with end painted in orange.

* ***Lighting****: most of the migratory birds (primarily the waterfowl) are birds that migrate at night. For this reason, it is very important to make the turbines distinguishable especially for the migratory birds that fly at night. It is impossible to provide the visibility of the turbine poles and blades only by painting them in white. Therefore, lighting of the turbines is quite important for minimizing the probable impacts on the wildlife. Instead of lighting the whole turbine it would be better to put a strong light source at the top of the turbine and make it on and off (flash light) at certain time intervals.*

The distance between turbines*: in case there are critical transit regions for the migratory birds, the distance between turbines should be minimum 500 meters. In the Bozüyük Wind Power Energy Plant project the distance between turbines T343 and T35 located on the Muratdere trajectory is 1400 m. The distance between the turbines located in peak areas should be minimum 300 m. Consequently, the distance between the turbines located in the valley of main migration was evaluated as appropriate.*

Conclusions from the Ornithological viewpoint

In the Bozüyük Wind Power Energy Plant project zone there are no habitats of national and international importance level for the bird species. However, when assessing from the habitat destruction viewpoint, considering the short construction period and the fact that the available roads will be used for transporting the turbines to their planned location, no irreversible impact is expected on the habitats existent during the construction period. During the operation stage of the project, permanent habitat loss will occur in the areas with permanent buildings and strong winds. There will be severe turbulence with permanent impact on the land ecosystem and the noise it would create. Once the facilities are ready, there will be habitat losses at very low level. However, these habitats consist of dense trees and there are similar habitats around. In the project areas where there are not buildings/ units, as well as in close areas around the project area, there are similar alternative areas with ecological carrying capacity. This situation gives the idea that the probable impacts especially on the native birds would be low and reversible.

As the result of the studies- literature and questionnaires conducted in the Bozüyük Wind Power Energy Plant project zone, 113 bird species were identified. The identified bird species are species seen in this region and in Anatolia, which means that there are no rare or endemic bird species. In the IUCN Thrteat categories (CR- EN- VU) there are the Little vulture and Turtledove. It is known that the Little vulture does not reproduce in the area bat it would probably come to feed and circulate around. On the other side, the Turtledove population is almost extinct due to exaggerated hunting pressure. The Wind Power Energy Plant management can prevent poaching and there would be more suitable reproduction areas for the species.

In the Project area there are no Special Protection Areas, Nature Conservation Areas and the other areas defined important for birds in Europe (Important Avian Zones) and the project area is located far from the mentioned ones.

Although the project areas are evaluated as areas of little importance from the avian fauna and habitats viewpoint, the fact that the birds have the ability to fly and, taking into consideration the stringent factors that would occur in the feeding shelter areas due to strong winds and different ecologic effects, some precautionary measures should be taken . In case these measures will be taken, then the impact and/ or the impact risk probability of the project elements on the native birds and/ or birds in transit would be minimized. In this context, in order to make the turbines more visible – noticeable –premonitory for the birds, the turbines and turbine blades must be painted in white and the ends of the turbine blades in orange – red. Lighting should be provided, especially to help the migratory birds flying at night notice the turbines. In the same context, instead of lighting the whole turbine it would be better to put a strong light source at the top of the turbine and make it on and off (flash light) at certain time intervals.

Some turbines (T34 and T35) in the Bozüyük Wind Power Energy Plant project zone, seem to be close to the valley that is the main migration itinerary of some species (especially the Little forest eagle). Consequently, considering the data to be collected in the studies that will be conducted, the measure taken should be slowing down the turbines in certain periods. These measures should be taken after the evaluating the results of the observations made by expert ornithologists in the operation periods.

The opinion is that, in case these measures will be taken, then the impact and/ or the impact risk probability of the project elements on the native birds and/ or birds in transit would be minimized. Besides, the bird collisions and deaths that might be seen should be recorded (including information such as date – place – species – number of individuals) and reported and the probable bird collision incident reports should be immediately submitted to the Regional Directorate of Forestry and Water Affairs. The personnel of the enterprise should get information and acknowledgements on this subject.

In conclusion, the planned project area is not a bird area but is situated on the possible avian migration itineraries. In case above summarized precautionary measures will be taken, the it can be expected that the negative impacts that might be for the birds, would be low or at a level that might be eliminated. Within this context, the Fall and Spring migrations in the project area and its close surroundings should be observed. The project area should be actualized in minimum 3 different areas and with minimum 2 ornithology expert observers. The Spring observation should run for total 15 days in the months of March, April and May as 5 days per month and the Fall observation should run for total 15 days in the months of August, September and October as 5 days per month.

CHART – 26 The scientific names of the birds identified in the Bozüyük WIND Power Energy Plant zone and the national and international protective measures

ORDO	Family	Scientific name	Turkish name	IUCN	BERN	CITES	EU Bird Directive	Status	MAK (2017 – 2018)
Ciconiiformes	Ciconiide	*Ciconia nigra*	Kara leylek – Black stork	LC	Attachment II	Attachment II	Attachment I	GY	
Ciconiiformes	Ciconiide	*Ciconia ciconia*	Leylek – Stork	LC	Attachment II		Attachment I	GY	
Accipitriformes	Accipitridae	*Pernis apivorus*	Arı şahini – Bee hawk	LC	Attachment II	---	Attachment I	GY	
Accipitriformes	Accipitridae	*Milvus migrans*	Kara çaylak – Black kite	LC	Attachment II	---	Attachment I	Y	
Accipitriformes	Accipitridae	*Neophron percnopterus*	Küçük akbaba – Egyptian vulture	**NT**	Attachment II	---	Attachment I	Y	
Accipitriformes	Accipitridae	*Circaetus gallicus*	Yılan kartalı – Short toed eagle	LC	Attachment II	---	Attachment I	Y	
Accipitriformes	Accipitridae	*Circus cyaneus*	Gökçe delice – Northern harrier	LC	Attachment II	---	Attachment I	Y	
Accipitriformes	Accipitridae	*Circus macrourus*	Bozkır delicesi- Pallidharrier	**NT**	Attachment II	---	Attachment I	Y	
Accipitriformes	Accipitridae	*Accipiter gentilis*	Çakırkuşu - Goshawk	LC	Attachment II	---	Attachment I	Y	
Accipitriformes	Accipitridae	*Accipiter nisus*	Atmaca – Soarrow hawk	LC	Attachment II	---	Attachment I	Y	
Accipitriformes	Accipitridae	*Buteo buteo*	Şahin - Hawk	LC	Attachment II	---		Y	
Accipitriformes	Accipitridae	*Buteo rufinus*	Kızıl şahin – Red hawk	LC	Attachment II	---	Attachment I	Y	
Accipitriformes	Accipitridae	*Clanga pomarina*	Küçük orman kartalı – Lesser spotted eagle	LC	Attachment II	---	Attachment I	GT	
Accipitriformes	Accipitridae	*Aquila chrysaetos*	Kaya kartalı – Rock eagle	LC	Attachment II	---	Attachment I	Y	
Accipitriformes	Accipitridae	*Hieraaetus pennatus*	Küçük Kartal – Little eagle	LC	Attachment II	---	Attachment I	Y	
Falconiformes	Falconidae	*Falco tinnunculus*	Kerkenez – Sparrow hawk	LC	Attachment II	---		Y	
Falconiformes	Falconidae	*Falco vespertinus*	Ala doğan – Peregrine falcon	**NT**	Attachment II	---	Attachment I	T	
Falconiformes	Falconidae	*Falco columbarius*	Boz doğan - Merlin	LC	Attachment II	---	Attachment I	K	
Falconiformes	Falconidae	*Falco subbuteo*	Delice doğan – Eurasian hobby	LC	Attachment II			Y	
Falconiformes	Falconidae	*Falco peregrinus*	Gök doğan - Goshawk	LC	Attachment II	Attachment I	Attachment I	Y	
Galliformes	Phasianidae	*Alectoris chukar*	Kınalı keklik – Red legged partridge	LC	Attachment III		Attachment IIB	Y	Attachment II
Galliformes	Phasianidae	*Coturnix coturnix*	Bıldırcın - Quail	LC	Attachment III		Attachment IIB	Y	Attachment II
Gruiformes	Gruidae	*Grus grus*	Turna – Common crane	LC	Attachment II		Attachment I	YT	
Columbiformes	Columbidae	*Columba livia*	Kaya güvercini – Rock dove	LC	Attachment III		Attachment IIA	Y	Attachment II
Columbiformes	Columbidae	*Columba oenas*	Gökçe güvercin – Stock dove	LC	Attachment III		Attachment IIB	Y	Attachment I
Columbiformes	Columbidae	*Columba palumbus*	Tahtalı – Wood pigeon	LC	---		Attach. IIA -IIIA	Y	Attachment II
Columbiformes	Columbidae	*Streptopelia decaocto*	Kumru - Turtledove	LC	Attachment III		Attachment IIB	Y	Attachment I
Columbiformes	Columbidae	*Streptopelia turtur*	Üveyik – Eurasian turtledove	**VU**	Attachment III		Attachment IIB	G	Attachment II
Cuculiformes	Cuculidae	*Cuculus canorus*	Guguk - Cuckoo	LC	Attachment III			G	
Strigiformes	Strigidae	*Athene noctua*	Kukumav – Little owl	LC	Attachment II			Y	

ORDO	Family	Scientific name	Turkish name	IUCN	BERN	CITES	EU Bird Directive	Status	MAK (2017 – 2018)
Strigiformes	Strigidae	*Strix aluco*	Alaca baykuş – Wood owl	LC	Attachment II	---		Y	
Strigiformes	Strigidae	*Asio otus*	Kulaklı orman baykuşu – Northern long eared owl	LC	Attachment II	---		Y	
Caprimulgiformes	Caprimulgidae	*Caprimulgus europaeus*	Çoban aldatan – European nightjar	LC	Attachment II		Attachment I	G	
Caprimulgiformes	Apodidae	*Apus apus*	Ebabil – Common swift	LC	Attachment III			G	
Coraciiformes	Meropidae	*Merops apiaster*	Arıkuşu – European bee- eater	LC	Attachment II			G	
Coraciiformes	Coraciidae	*Coracias garrulus*	Gökkuzgun- Roller	LC	Attachment II			G	
Bucerotiformes	Upupidae	*Upupa epops*	İbibik – Eurasian hoopoe	LC	Attachment II			Y	
Piciformes	Picidae	*Picus viridis*	Yeşil ağaçkakan – Green woodpecker	LC	Attachment II			Y	
Piciformes	Picidae	*Dendrocopos major*	Orman ağaçkakanı – Great spotted woodpecker	LC	Attachment II		Attachment I	Y	
Piciformes	Picidae	*Dendrocopos syriacus*	Alaca ağaçkakan – Syrian woodpecker	LC	Attachment II		Attachment I	Y	
Piciformes	Picidae	*Dendrocopos medius*	Ortanca ağaçkakan – Middle spotted woodpecker	LC	Attachment II		Attachment I	Y	
Piciformes	Picidae	*Dendrocopos leucotos*	Aksırtlı ağaçkakan – White backed woodpecker	LC	Attachment II		Attachment I	Y	
Piciformes	Picidae	*Dendrocopos minor*	Küçük ağaçkakan – Lesser spotted woodpecker	LC	Attachment III			Y	
Passeriformes	Alaudidae	*Galerida cristata*	Tepeli toygar – Crested lark	LC	Attachment III				Attachment I
Passeriformes	Alaudidae	*Lullula arborea*	Orman toygarı - Woodlark	LC	Attachment III		Attachment I	Y	Attachment I
Passeriformes	Alaudidae	*Alauda arvensis*	Tarla kuşu - Skylark	LC	Attachment II		Attachment IIB	Y	Attachment I
Passeriformes	Alaudidae	*Eremophila alpestris*	Kulaklı toygar – Horned lark	LC	Attachment II			Y	
Passeriformes	Hirundinidae	*Ptyonoprogne rupestris*	Kaya kırlangıcı – Crag martin	LC	Attachment II			G	
Passeriformes	Hirundinidae	*Hirundo rustica*	Kır kırlangıcı – Barn sparrow	LC	Attachment II			G	
Passeriformes	Motacilidae	*Anthus campestris*	Kır incirkuşu – Tawny pipit	LC	Attachment II		Attachment I	G	
Passeriformes	Motacilidae	*Anthus pratensis*	Çayır incirkuşu – Meadow pipit	LC	Attachment II			G	
Passeriformes	Motacilidae	*Anthus spinoletta*	Dağ incirkuşu – Water pipit	LC	Attachment II			Y	
Passeriformes	Motacilidae	*Motacilla alba*	Ak kuyruksallayan – White wagtail	LC	Attachment II			Y	
Passeriformes	Troglodytidae	*Troglodytes troglodytes*	Çıtkuşu - Wren	LC	Attachment II		Attachment I	Y	
Passeriformes	Muscipidae	*Erithacus rubecula*	Kızılgerdan – Red breast Robin	LC	Attachment II			Y	
Passeriformes	Muscipidae	*Luscinia megarhynchos*	Bülbül - Nightingale	LC	Attachment II			G	
Passeriformes	Muscipidae	*Luscinia svecica*	Mavigerdan – Blue throat	LC	Attachment II		Attachment I	G,Y	
Passeriformes	Muscipidae	*Phoenicurus ochruros*	Kara kızılkuyruk – Black redstart	LC	Attachment II			R	
Passeriformes	Muscipidae	*Phoenicurus phoenicurus*	Kızılkuyruyk - Redstart	LC	Attachment II			Y	
Passeriformes	Muscipidae	*Saxicola rubetra*	Çayır Taşkuşu	LC	Attachment II			YY	

ORDO	Family	Scientific name	Turkish name	IUCN	BERN	CITES	EU Bird Directive	Status	MAK (2017 – 2018)
Passeriformes	Muscipidae	*Saxicola torquata*	Taşkuşu – uropean stonechat	LC	Attachment II			Y	
Passeriformes	Muscipidae	*Oenanthe oenanthe*	Kuyruk kakan - Wheater	LC	Attachment II	---		G	
Passeriformes	Muscipidae		Kara kulaklı kuyruk kakan – Black eared wheater	LC	Attachment II			G	
Passeriformes	Muscipidae	*Oenanthe hispanica*	Taşkızıl – Rock thrush	LC	Attachment III			G	
Passeriformes	Muscipidae	*Monticola saxatilis*	Gökardıç – Blue rock- thrush	LC	Attachment II			Y	
Passeriformes	Muscipidae	*Monticola solitarius*	Benekli sinek kapan- Spotted fly catcher	LC	Attachment II			G	
Passeriformes	Turtidae	*Muscicapa striata*	Karatavuk - Blackbird	LC	Attachment II		Attachment II	Y	Attachment II
Passeriformes	Turtidae	*Turdus merula*	Tarla ardıcı - Fieldfare	LC	Attachment II		Attachment II	K	Attachment I
Passeriformes	Turtidae	*Turdus pilaris*	Öter ardıç – song thrush	LC	Attachment II		Attachment II	Y	Attachment II
Passeriformes	Turtidae	*Turdus philomelos*	Ökse ardıcı – Mistle thrush	LC	Attachment II		Attachment II	Y	Attachment I
Passeriformes	Silviidae	*Turdus viscivorus*	Ak mukallit – Eastern olivaceus warbler	LC	Attachment II			G	
Passeriformes	Silviidae	*Hippolais pallida*	Maskeli ötleğen – Sardinian warbler	LC	Attachment II			Y	
Passeriformes	Silviidae	*Sylvia melanocephala*	Ak gerdanlı ötleğen – White throat	LC	Attachment III			G	
Passeriformes	Silviidae	*Sylvia communis*	Çıvgın – Leaf warbler	LC	Attachment III			Y	
Passeriformes	Silviidae	*Phylloscopus collybita*	Söğüt bülbülü – Leaf warbler	LC	Attachment III			G	
Passeriformes	Regulidae	*Phylloscopus trochilus*	Çalıkuşu - Goldcrest	LC	Attachment II			Y	
Passeriformes	Regulidae	*Regulus regulus*	Sürmeli çalıkuşu - Firecrest	LC	Attachment II			Y	
Passeriformes	Aegithalidae	*Regulus ignicapillus*	Uzun kuyruklu baştankara – Long tailed tit	LC	Attachment III			Y	Attachment I
Passeriformes	Paridae	*Aegithalos caudatus*	Kayın baştankarası – Marsh tit	LC	Attachment II			Y	
Passeriformes	Paridae	*Parus palustris*	Ak yanaklı baştankara – Sombre tit	LC	Attachment II			Y	
Passeriformes	Paridae	*Parus lugubris*	Çam baştankarası – Coal Tit	LC	Attachment II		Attachment I	Y	
Passeriformes	Paridae	*Parus ater*	Mavi başitankara – Eurasian blue tit	LC	Attachment II			Y	
Passeriformes	Paridae	*Parus caeruleus*	Büyük baştankara – Blue tit	LC	Attachment II			Y	
Passeriformes	Sittidae	*Parus major*	Anadolu sıvacısı – Krüper's nuthatch	LC	Attachment II			Y	
Passeriformes	Sittidae	*Sitta krueperi*	Sıvacı - Nuthatch	LC	Attachment II			Y	
Passeriformes	Sittidae	*Sitta europaea*	Kaya sıvacısı – Rock nuthedge	LC	Attachment II			Y	
Passeriformes	Certiidae	*Sitta neumayer*	Orman Tırmaşıkkuşu – Eurasian tree creeper	LC	Attachment II			YU	
Passeriformes	Laniidae	*Certhia familiaris*	Kızıl sırtlı örümcek kuşu – Red backed shrike	LC	Attachment II		Attachment I	G	Attachment I
Passeriformes	Laniidae	*Lanius collurio*	Büyük örümcekkuşu – Great grey shrike	LC	Attachment II			G.K.	
		Lanius excubitor							

ORDO	Family	Scientific name	Turkish name	IUCN	BERN	CITES	EU Bird Directive	Status	MAK (2017 – 2018)
Passeriformes	Laniide	*Lanius nubicus*	Maskeli örümcek kuşu – Masked shrike	LC	Attachment II		Attachment I	G	
Passeriformes	Corvidae	*Garrulus glandarius*	Alakarga – Grey jay	LC	---		Attachment IIB	Y	Attachment II
Passeriformes	Corvidae	*Pica pica*	Saksağan - Magpie	LC	---		Attachment IIB	Y	Attachment II
Passeriformes	Corvidae	*Pyrrhocorax pyrrhocorax*	Kırmızı gagalı dağ kargası – red beak red legged crow	LC	Attachment II		Attachment I	Y	
Passeriformes	Corvidae	*Corvus monedula*	Küçük karga - Jackdaw	LC	---		Attachment IIB	Y	Attachment II
Passeriformes	Corvidae	*Corvus frugilegus*	Ekin kargası - Rook	LC	---		Attachment IIB	Y	Attachment II
Passeriformes	Corvidae	*Corvus cornix*	Leş kargası – Hooded crow	LC	---		Attachment II	Y	Attachment II
Passeriformes	Corvidae	*Corvus corax*	Kuzgun – Common raven	LC	Attachment III			Y	Attachment I
Passeriformes	Sturnidae	*Sturnus vulgaris*	Sığırcık – Common starling	LC	--		Attachment IIB	Y	Attachment I
Passeriformes	Passeridae	*Passer domesticus*	Serçe - Sparrow	LC	---			Y	Attachment II
Passeriformes	Passeridae	*Passer hispaniolensis*	Söğüt serçesi - Spanish sparrow	LC	Attachment III			Y	Attachment I
Passeriformes	Passeridae	*Passer montanus*	Ağaç serçesi – Eurasian tree sparrow	LC	Attachment III			Y	Attachment I
Passeriformes	Fringillidae	*Fringilla coelebs*	İspinoz - Chaffinch	LC	Attachment III		Attachment I	Y	Attachment I
Passeriformes	Fringillidae	*Fringilla montifringilla*	Dağ ispinozu - Brambling	LC	Attachment III			Y	Attachment I
Passeriformes	Fringillidae	*Serinus serinus*	Küçük iskete – European serin	LC	Attachment II			G	
Passeriformes	Fringillidae	*Carduelis chloris*	Florya – European green finch	LC	Attachment II			Y	
Passeriformes	Fringillidae	*Carduelis carduelis*	Saka – European goldfinch	LC	Attachment II			Y	
Passeriformes	Fringillidae	*Carduelis cannabina*	Keten kuşu – Common linnet	LC	Attachment II			Y	
Passeriformes	Fringillidae	*Carpodacus erythrinus*	Çütre – Common rose finch	LC	Attachment II			Y	
Passeriformes	Fringillidae	*Coccothraustes coccothraustes*	Kocabaş – Haw finch	LC	Attachment II			Y	
Passeriformes	Emberizidae	*Emberiza cirlus*	Bahçe kiraz kuşu –Cirl bunting	LC	Attachment II			Y	
Passeriformes	Emberizidae	*Emberiza hortulana*	Kiraz kuşu - Bunting	LC	Attachment III		Attachment I	G	Attachment I
Passeriformes	Emberizidae	*Emberiza melanocephala*	Karabaşlı kiraz kuşu – Black headed bunting	LC	Attachment II			G	
Passeriformes	Emberizidae	*Miliaria calandra*	Tarla kirazkuşu - Corn bunting	LC	Attachment III			Y	Attachment I

If species under protection will be seen in the activity area, they will not be harmed. Compliance with the decisions of the Hunting Season Decisions of the Central Hunting Commission published every year by the Ministry of Forestry and Water Affairs must be strictly complied to in order to protect the game in that region. Furthermore, compliance is required also to the provisions of the articles concerning the "Preservation of Species" of the Convention for the Preservation of the European Wildlife and natural Habitats published in then Official Gazette Issue number 18313, dated February 20th, 1984 and to the Land Hunting Law number 4915. In the same way compliance to the issues mentioned in the reports prepared within the project scope is also required.

Within the scope of the project studies, opinion number 134564 dated June 7th, 2018 of the Republic of Turkey Ministry of Forestry and Water Affaires is submitted in **Attachment 5.1** and the actions taken should be compliant with the opinion. The warranties defined in the mentioned opinion are given below and the Notary attested Letter of Commitment is submitted also in **Attachment 5.1**.

During the Spring(March 1st – May 30th) and Fall (August 10th – November 15th) there will be made at least 15 days of ornithological observations and the results will be reported to the General Directorate of Nature Preservation and National Parks at 6 months intervals.

During the observation period 6 months reports will be prepared, the days, hours and places of observation will be indicated in the reports. These reports will specify the bird species using the area and their threat categories, the purpose for which the birds identified are using this area and also the migratory birds in the area will be distinguished from the area resident birds which stay there for a long period of time. In these reports there will be information also about the identified birds' flight altitudes relative to turbines, the distance of the flight corridors from the turbines, the thermal air currents in the region, the regional climatic data and the gathering points of the birds, the populations of the birds in the region and the changes determined at the end of the observations. The observation reports will contain information on subjects such as the identified birds' purpose of using the area, their population size, reproduction status, reproduction areas and features, reproducing couples, etc. the bio ecology of the species. When the observation results will be interpreted, the other Wind Power Energy Plants around the Wind Power Energy Plant area will also be taken into consideration and a cumulative interpretation would be done.

In the observation reports, the observed species, predator birds, migratory birds gliding in the air, native, visitor or in transit species will be grouped and counted separately. The number of transits and individuals transiting the area will be in the reports, the risk status will be defined, an evaluation based on details and statistics of the target species and including quantitative analysis will be made, the curriculum vitae of each expert who contributed to the report will also be included in the report. Target species such as King eagle, Black woodpecker, Krüper's nuthatch will be interpreted under the same topic, it will be determined whether or not the project area and its neighborhood serve as reproduction an shelter place, the aea will be checked to see if there are any nests and eggs, the birds under observation in the area will take place in the charts grouped as native species, migratory species, predator birds, the transits and number of individuals in transit, their Turkish – Latin names, the target species will be give in detail (transits and number of individuals in transit, purpose of using the region, risk levels, flight altitudes, distance of approaching the turbines horizontally)under separate groups. Since the number of bat deaths is increasing during July – September, the availability status of bats during this period will be investigated.

The prepared reports will be presented also electronically. The observations during the migration season will be done with the participation of technical personnel from the Province Directorate and/or the General Directorate of Nature Protection and National Parks and the results will be reported at each 6 month to the General Directorate of Nature Protection and National Parks.

The Bats surveys will be made by analyzing sounds using analysis programs internationally approved and the analysis will be made by Bat experts with minimum license degree education (experienced in Bats) during the April – September period for minimum 5 nights. The construction works during the reproduction season of the vertebrates (April – July) will be executed under biologists' control and during the vegetation, pollen formation and flowering periods of the plants, measures such as spraying, etc. will be implemented in order to prevent the dust formation due to construction works.

Regarding the transportation and connection roads which will be constructed within the project scope, in the cut trees and around them, rodent (marble polecat, dormouse, squirrel, etc.) and bird species nests, eggs, cubs and nestlings will be checked and the found ones will be carried to the closest tree without direct hand contact, suitable transit corridors will be made available on these communication roads in order to prevent the destruction of these species. The ground peeling works will be done during November – April. After the operation start up of the power plant, changes in the vital components of the wildlife and in the habitats in this zone will be observed.

The preservation of the fertile layer containing plant seeds that has been peeled off the ground during the construction period and spreading this soil on the ground after finishing the construction will make the preserved seeds germinate and provide the continuity of the species. The region will be reforested with the suitable tree species in order to improve or restore the project areas requiring reparation.

The widths of the roads (except slide slopes, bends, excavation and filling end, sidewalk shares) that will be constructed will not exceed 6 m.

In case of capacity increase, relocation of turbines or area changes, opinion will be requested from the General Directorate of Nature Protection and National Parks.

The precautionary measures described in this Environmental Assessment Report will be implemented, the personnel and authorized staff of the power plant will be informed in order to prevent any probable damage to the flora and fauna species identified in the project area and around it and especially to the endangered species.

In case any turbines will be identified as threat for birds according to the data collected through the observation done, these turbines will stop functioning during the migration period and, if the observation results require, the turbines creating threat might be dislocated.

IV.2.8. Lands under the jurisdiction of the state authorized bodies (Prohibited military zones, areas allocated for certain purposes to the public institutions and enterprises, areas confined by the Decree Number 7/16349 of the Council of Ministers, published in the official Gazette Number 16415 dated September 25th, 1978, etc

Within the power plant borders there are no lands under the jurisdiction of the state authorized bodies (Prohibited military zones, areas allocated for certain purposes to the public institutions and enterprises, areas confined by the Decree Number 7/16349 of the Council of Ministers, published in the official Gazette Number 16415 dated September 25th, 1978, etc.

IV.2.9. General Climatic Conditions of the Region, Counted days, Temperature, Distribution of Precipitations and Winds, Tops (the 1960 – 2013 Bulletins of the closest Meteorology Station)

1-a) Climatic conditions of the region

The climate displays transitory characteristics. In the Southern and Eastern regions, the Central Anatolian temperate climate is predominant. Summer is hot and dry, winter is cold and wet, whereas in the other regions winter is mild.

The data of the Bozüyük Meteorological Station between years 1960 and 2017 were used. **The Meteorological Bulletin is submitted attached (see Attachment 3.7).**

b) Atmospheric pressure distribution

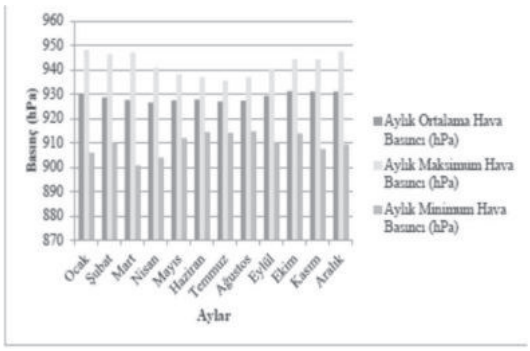
According to the observations records of the Bozüyük Meteorological Station over a long time (1960 - 2017), in this region the annual average atmospheric pressure is 928,8 hPa, the annual maximum atmospheric pressure is 948 hPa, the annual minimum atmospheric pressure is 900,8 hPa.

Chart 27 Bozüyük Meteorological Station atmospheric pressure values in years 1960 – 2017

MONTHS	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Average atmospheric pressure (hPa)	930,1	928,7	927,6	926,6	927,5	927,7	927	927,4	929,2	931,2	931	931	928,8
Maximum atmospheric pressure (hPa)	948	946,4	946,9	940,9	938	937	937	937	940,3	944,2	944,3	947,5	948
Minimum atmospheric pressure (hPa)	906	910,1	900,8	904	912	914,5	914, 5	914,7	910,2	913,8	907,4	909,2	900,8

Station name: 17702 Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30

Pressure (hPa)



Monthly Average Atmospheric pressure (hPa)

Monthly Maximum Atmospheric pressure (hPa)

Monthly Minimum Atmospheric pressure (hPa)

January –February – March – April – May – June – July – August – September – October – November – December

Months

Figure 43 – Atmospheric pressure distribution Chart (1960 – 2017)

c) Temperature distribution

According to the observations records of the Bozüyük Meteorological Station over a long time (1960 - 2017), in this region the annual average temperature is 10,6ºC. The annual maximum temperature measured is 42ºC in July, the annual minimum temperature measured is -25,7ºC in January.

Chart 28 Bozüyük Meteorological Station temperature values in years 1960 – 2017

MONTHS	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Average temperature (ºC)	0,2	1,6	5,1	9,9	14,3	17,9	20,4	20,2	16,4	11,8	6,7	2,5	10,6
Maximum temperature (ºC)	20,6	22,7	29	32,5	34,3	38	42	41	38	35	27,8	23,8	42
Minimum temperature (ºC)	-25,7	-23,8	-19,2	-12,6	-3,2	0,8	3	2,5	-3,3	-8	-14,6	-25,4	-25,7

Station name: 17702Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30

Temperature (ºC)

Monthly Average Temperature (ºC)

Monthly Maximum Temperature (ºC)

Monthly Minimum Temperature (ºC)

January –February – March – April – May – June – July – August – September – October – November – December

Months

Figure 44– Temperature distribution Chart (1960 – 2017)

ç) Precipitation distribution

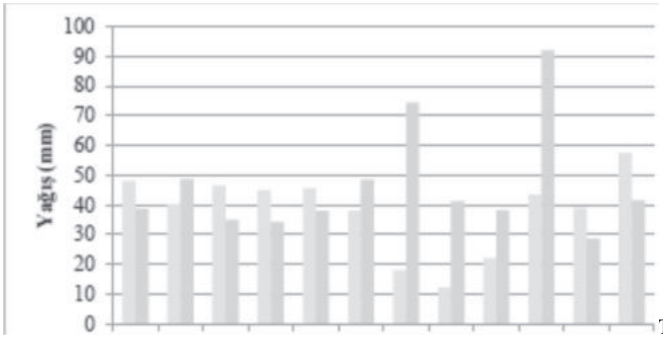
According to the observations records of the Bozüyük Meteorological Station over a long time (1960 - 2017), in this region the total annual average precipitation is 491,2 mm. The annual maximum precipitation measured is 116 mm.

Chart 29 Bozüyük Meteorological Station precipitation values in years 1960 – 2017

MONTHS	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Average total precipitation quantity (mm)	53,4	47,1	51,7	48,3	50,2	37,4	17,8	13,2	21,3	42,2	44,2	64,4	491,2
Maximum monthly precipitation quantity (mm)	45,2	42,2	56	37,1	116,6	54,5	60	38,4	28,1	43,9	40,6	45,5	116,6

Station name :17702 Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30

Precipitations (mm)



Total Precipitation Average (mm)

Maximum Precipitation (Mmm)

January –February – March – April – May – June – July – August – September – October – November – December

Months

Figure 45– Precipitation distribution Chart (1960 – 2017)

The maximum prcipitation level measured at standard times, the repeat graphics are attached (see Attachment 3.7)

d) Average Relative Humidity

According to the observations records of the Bozüyük Meteorological Station over a long time (1960 - 2017), in this region the annual average relative humidity is 70,8%. The annual maximum relative humidity measured is 96,4%, the annual minimum relative humidity measured is 24,3%.

Chart 30 Bozüyük Meteorological Station relative humidity values in years 1960 – 2017

MONTHS	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Average monthly relative humidity (%)	80,5	76,9	72,1	67,8	67,4	65,2	62,2	43,8	66	71,9	75,3	80,6	70,8
Maximum monthly relative humidity (%)	96,6	96,6	96,9	97	96,6	95,9	94,1	94,7	96,5	97,3	97,4	97	96,4
Minimum monthly relative humidity (%)	42,8	33,4	19,9	17,9	19,6	20,3	17,8	17,5	16,5	17,8	28,5	40,1	24,3

Station name: 17702 Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30

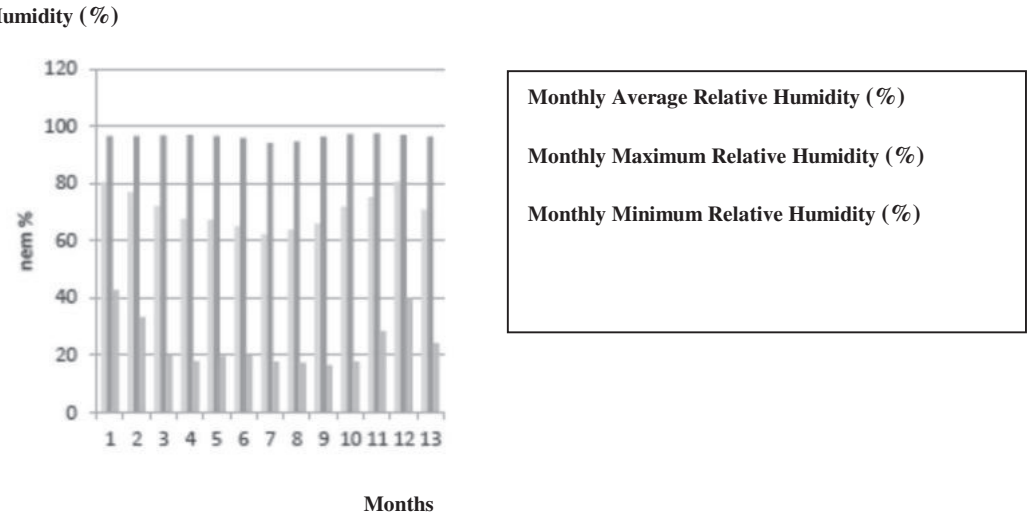


Figure 46– Relative Humidity distribution Chart (1960 – 2017)

e) Counted Days

According to the observations records of the Bozüyük Meteorological Station over a long time (1960 - 2017), in this region the monthly average number of wet days is 104,8; the monthly average number of rainy days is 87,39; the monthly average number of haily days is 1,49; the monthly average number of foggy days is 28,72; the monthly average number of white frost days is 23,03; the monthly average number of dew days is 27,36; the monthly average number of thunderstorm days is 1,42 and the monthly average number of snowy days is 19,9.

Chart 31 Bozüyük Meteorological Station – the distribution of the counted days in years 1960 – 2017

MONTHS	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Monthly average number of wet days	11,59	10,88	10,86	11,22	10,21	7,43	3,84	3,47	5,12	8,19	9,47	12,47	104,8
Monthly average number of rainy days	6,91	6,34	8,24	10,57	10,02	7,29	3,74	3,29	4,98	8,12	8,48	9,41	87,39
Monthly average number of hail days	0,05	0,03	0,22	0,28	0,33	0,28	0,07	0,05	0,05	0,03	0,03	0,07	1,49
Monthly average number of foggy days	3,9	2,66	3,03	1,78	1,33	0,48	0,21	0,52	1,84	5,02	4,12	3,83	28,72
Monthly average number of white frost days	3,5	3,55	4,24	1,74	0,07			0,02	0,19	1,52	4,72	3,48	23,03
Monthly average number of dew days	0,17	0,31	0,67	2,14	3,67	3,34	2,29	2,95	5,17	4,22	2,09	0,34	27,36
Monthly average number of Thunderstorm days		0,02		0,05	0,28	0,48	0,28	0,19	0,05	0,05	0,02		1,42
Monthly average number of snowy days	5,59	5,24	3,38	0,62			0,02			0,05	1,33	3,67	19,9

Station name: 17702 Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30

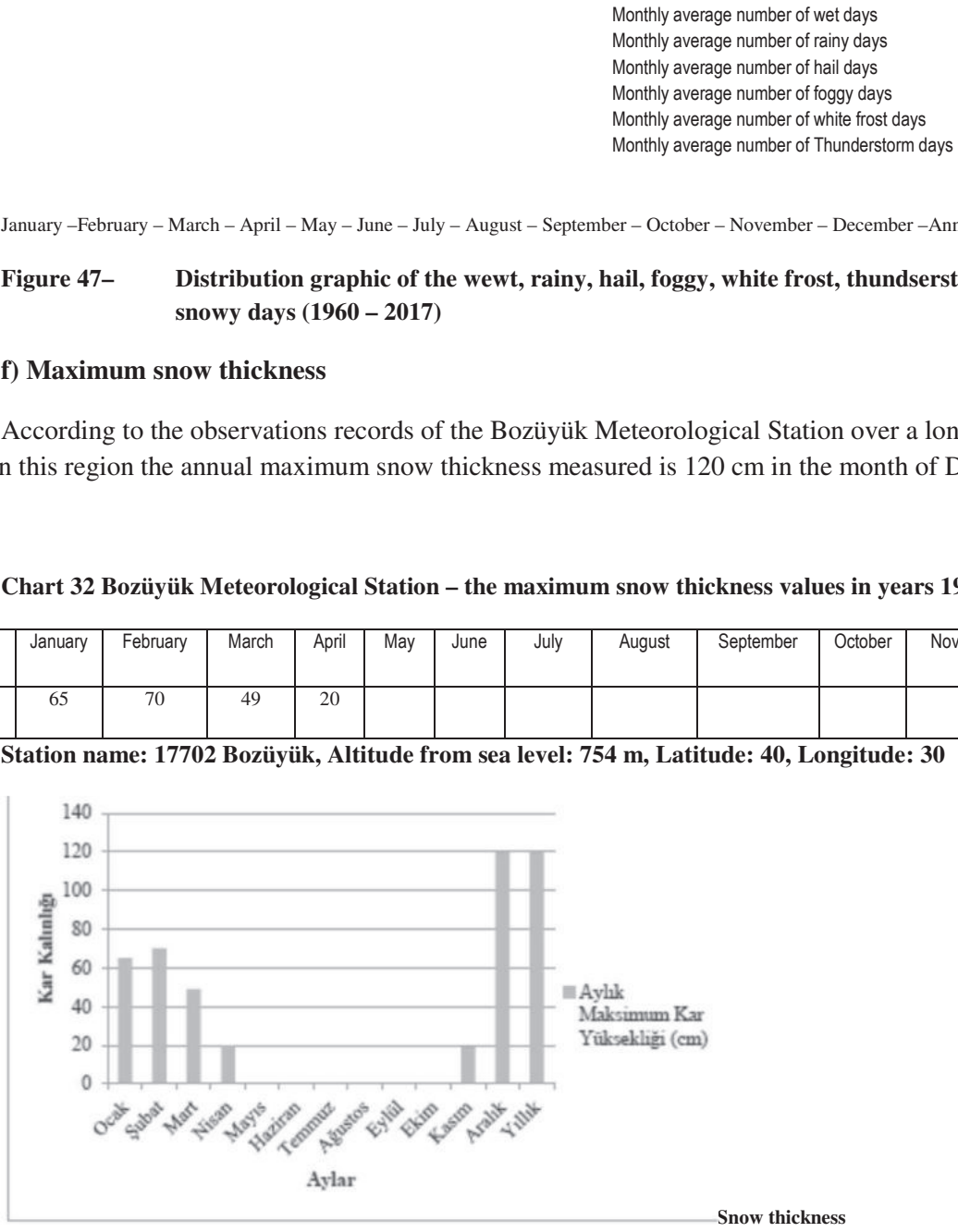


Figure 47– Distribution graphic of the wewt, rainy, hail, foggy, white frost, thundserstorm and snowy days (1960 – 2017)

f) Maximum snow thickness

According to the observations records of the Bozüyük Meteorological Station over a long time (1960 - 2017), in this region the annual maximum snow thickness measured is 120 cm in the month of December.

Chart 32 Bozüyük Meteorological Station – the maximum snow thickness values in years 1960 – 2017

MONTHS	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Maximum snow thickness (cm)	65	70	49	20							19	120	120

Station name: 17702 Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30

Figure 48– Maximum snow thickness distribution in years 1960 – 2017

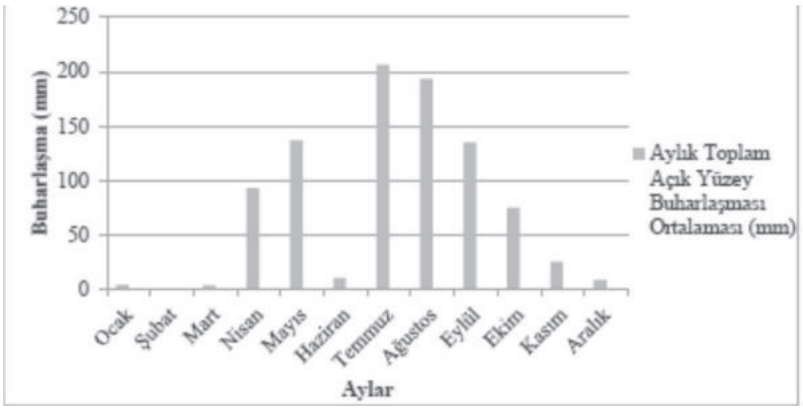
g) Evaporation status

According to the observations records of the Bozüyük Meteorological Station over a long time (1960 - 2017), in this region the total monthly average free surface evaporation is 10,6 mm; the monthly maximum free surface evaporation is 5,9 mm. The evaporation data were obtained from the measurements done at the Bozüyük Meteorological Station in JUne, the data of the other months were obtained from the Bilecik Meteorological Station.

Chart 33 Bozüyük Meteorological Station Evaporation values in years 1960 – 2017

MONTHS	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Total monthly average free surface evaporation (mm)	4,2		4,0	93,3	137,0	10,6	206,2	193,3	135,0	75,3	25,6	9,1	893,6
Monthly maximum free surface evaporation (mm)	1,40			24,0	13,5	5,9	15,6	14,5	10,5	7,5	6,0	4,8	24,0

Station name: 17702 Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30



Evaporation (mm)

Total monthly average free surface evaporation (mm)

January –February – March – April – May – June – July – August – September – October – November – December

Months

Figure 49– Evaporation graphic (1960 – 2017)

g) Wind

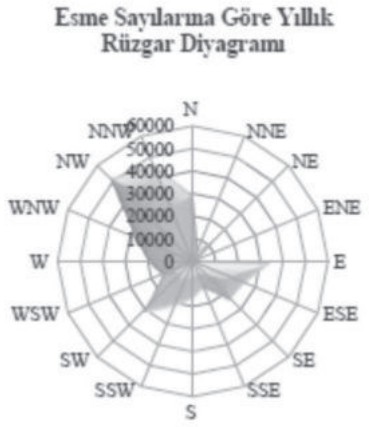
Yearly, Seasonal, Monthly Wind direction

According to the observations records of the Bozüyük Meteorological Station over a long time (1960 - 2017), in this region wind blowing was identified as 1st Level predominant wind direction (NW) North West, 2nd Level predominant wind direction (NNW) North- North West, 3rd Level predominant wind direction (SW) South West.

Chart 34. Bozüyük Meteorological Station Total number of wind blows in years 1960 – 2017

MONTHS	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Total number of wind blows in direction N	1669	1497	2435	2543	2830	3063	4278	3660	3052	2166	1110	1207	29510
Total number of wind blows in direction NNE	322	313	472	544	621	654	576	652	687	658	521	626	6646
Total number of wind blows in direction NE	1173	989	1218	1149	878	887	689	906	1147	1235	1587	1215	13073
Total number of wind blows in direction ENE	2217	2217	2217	2217	2217	2217	2217	2217	2217	2217	2217	2217	2217
Total number of wind blows in direction E	5587	4172	3462	2629	1690	923	703	858	1279	2276	4767	6138	34484
Total number of wind blows in direction ESE	4353	3233	2120	1467	1232	729	586	558	896	1356	2949	4787	24266
Total number of wind blows in direction SE	3802	2610	2316	1777	1667	925	608	599	968	1454	2584	3707	23017
Total number of wind blows in direction SSE	1283	1024	1204	1102	1025	691	525	562	834	992	1244	1409	11895
Total number of wind blows in direction S	1422	1533	1458	1768	1422	1034	772	777	1176	1541	1589	1523	16015
Total number of wind blows in direction SSW	1167	1423	1949	2315	2070	1591	1317	1519	1875	2056	1863	1502	20647
Total number of wind blows in direction SW	1440	1708	2489	2770	3086	2856	3016	3244	3364	3430	2289	1978	31670
Total number of wind blows in direction WSW	614	625	987	1129	1355	1416	1486	1731	1639	1572	1065	814	14433
Total number of wind blows in direction W	1064	1030	1714	1662	1544	1612	2093	2134	1913	1838	1392	1313	19309
Total number of wind blows in direction WNW	1767	1782	1976	2021	2182	2879	3404	3234	2431	2425	1599	1678	27378
Total number of wind blows in direction NW	3067	3408	4308	4426	4872	5288	6840	5836	4486	3746	2412	3086	51775
Total number of wind blows in direction NNW	2019	2637	3739	3638	4484	4907	6385	6108	4526	3777	2330	1932	46482

Station name: 17702 Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30



Yearly wind diagram according to the number of blows

Figure 50. Diagram of the number of yearly blows (1960 – 2017)

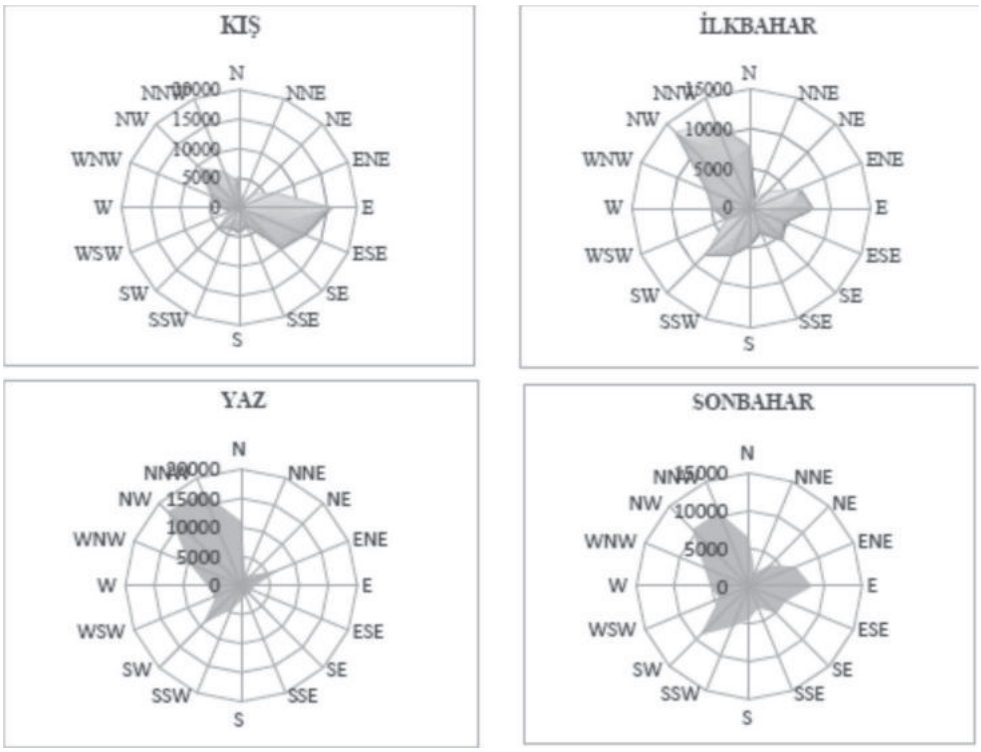
The number of blows was calculated seasonally according to the observation records of the Bozüyük Meteorological Station in years 1960 -2017 and was submitted in the chart below.

Chart 35. Bozüyük Meteorological Station Total number of seasonal wind blows in years 1960 – 2017

MONTHS	WINTER	SPRING	SUMMER	AUTUMN
Total number of wind blows in direction N	4373	7808	11001	6328
Total number of wind blows in direction NNE	1261	1637	1882	1866
Total number of wind blows in direction NE	3377	3245	2482	3969
Total number of wind blows in direction ENE	6651	6651	6651	6651
Total number of wind blows in direction E	15897	7781	2484	8322
Total number of wind blows in direction ESE	12373	4819	1873	5201
Total number of wind blows in direction SE	10119	5760	2132	5006
Total number of wind blows in direction SSE	3716	3331	1778	3070
Total number of wind blows in direction S	4478	4648	2583	4306
Total number of wind blows in direction SSW	4092	6334	4427	5794
Total number of wind blows in direction SW	5126	8345	9116	9083
Total number of wind blows in direction WSW	2053	3471	4633	4276
Total number of wind blows in direction W	3407	4920	5839	5143
Total number of wind blows in direction WNW	5227	6179	9517	6455
Total number of wind blows in direction NW	9561	13606	17964	10644
Total number of wind blows in direction NNW	6588	11861	17400	10633

Station name: 17702 Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30

WINTER **SPRING**



SUMMER **AUTUMN**

Figure 51. Diagram of the number of seasonal blows (1960 – 2017)

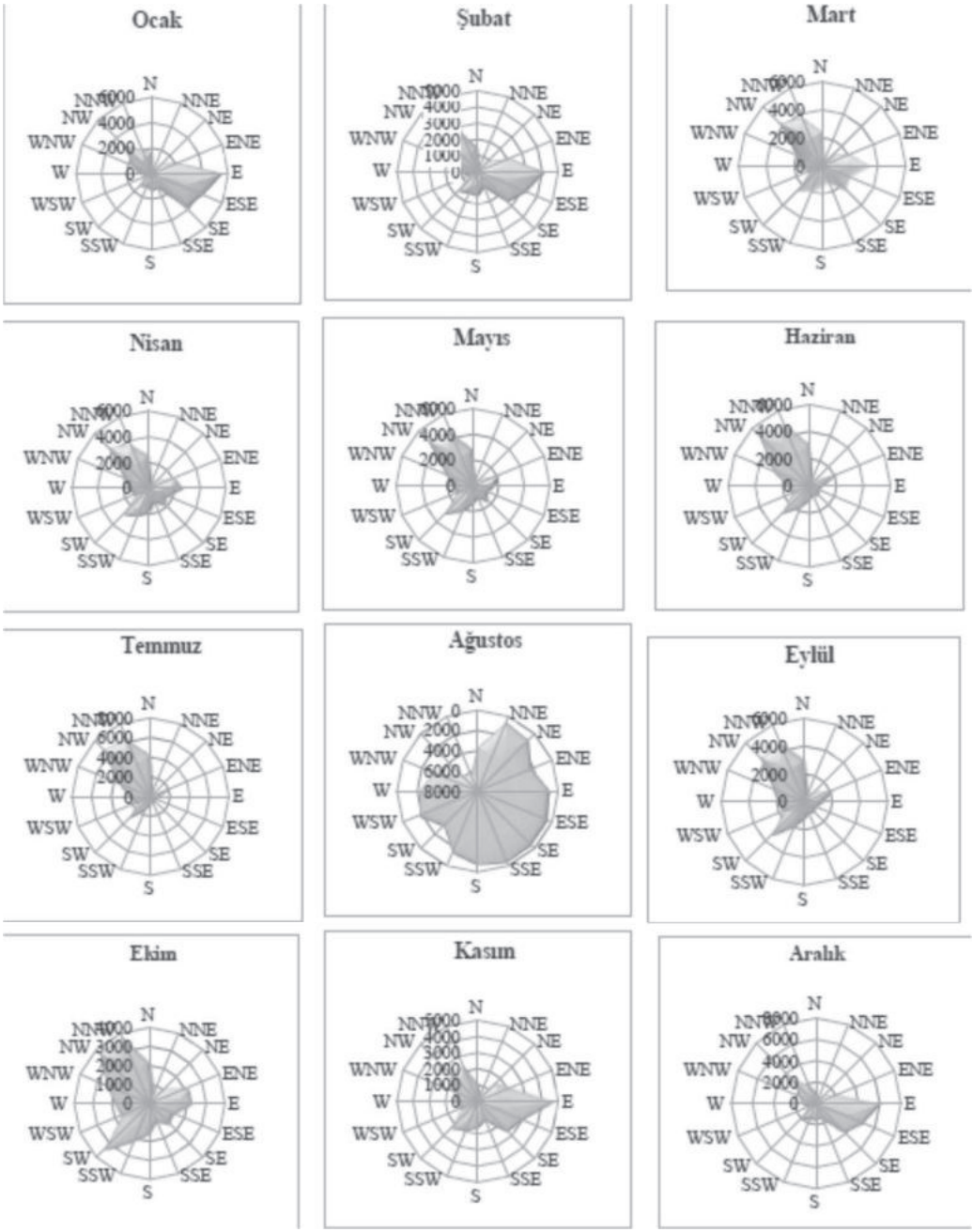


Figure 52. Diagram of the number of monthly blows (1960 – 2017)

Average wind speed according to directions

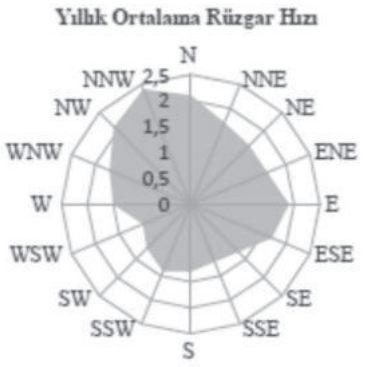
The wind speed values, according to the observation records of the Bozüyük Meteorological Station in years 1960 -2017, are presented in the chart below.

Chart 36. Bozüyük Meteorological Station average wind speed values in years 1960 – 2017

MONTHS	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Average wind speed in direction N (m/sec)	1,8	1,8	2	2,2	2,2	2,4	2,6	2,7	2,3	2	1,9	1,7	2,1
Average wind speed in direction NNE (m/sec)	1,3	1,5	1,6	1,7	1,9	1,9	2,2	2,2	1,8	1,6	1,4	1,3	1,7
Average wind speed in direction NE (m/sec)	1,6	1,5	1,5	1,5	1,4	1,5	1,9	1,9	1,7	1,5	1,5	1,7	1,6
Average wind speed in direction ENE (m/sec)	1,8	1,7	1,7	1,6	1,4	1,4	1,4	1,4	1,6	1,5	1,6	1,8	1,6
Average wind speed in direction E (m/sec)	2,2	2,2	2,1	1,9	1,7	1,4	1,6	1,7	1,8	1,9	2,2	2,4	1,9
Average wind speed in direction ESE (m/sec)	2,3	2,2	1,9	1,6	1,4	1,2	1,2	1,2	1,3	1,5	2	2,3	1,7
Average wind speed in direction SE (m/sec)	1,8	1,7	1,5	1,4	1,1	0,9	0,8	0,8	0,9	1,1	1,5	1,8	1,3
Average wind speed in direction SSE (m/sec)	1,7	1,6	1,6	1,4	1	0,9	0,7	0,8	0,8	1	1,4	1,7	1,2
Average wind speed in direction S (m/sec)	1,8	1,9	1,6	1,5	1,1	0,9	0,8	0,7	0,9	1	1,4	1,8	1,3
Average wind speed in direction SSW (m/sec)	1,8	1,8	1,9	1,8	1,3	1	0,8	0,8	1	1,2	1,5	1,7	1,4
Average wind speed in direction SW (m/sec)	1,3	1,4	1,5	1,4	1,2	0,9	1	1	1	1,1	1,2	1,5	1,2
Average wind speed in direction WSW (m/sec)	1,1	1,1	1,2	1,2	1,1	1	1	1	0,9	0,9	0,9	1	1
Average wind speed in direction W (m/sec)	1,4	1,5	1,5	1,7	1,3	1,3	1,6	1,5	1,4	1,4	1,4	1,5	1,5
Average wind speed in direction WNW (m/sec)	1,6	1,6	1,7	1,8	1,8	1,8	2	1,9	1,6	1,4	1,4	1,5	1,7
Average wind speed in direction NW(m/sec)	1,9	2	2,1	2,1	2,2	2,1	2,4	2,3	2,1	1,9	1,8	2	2,1
Average wind speed in direction NNW (m/sec)	2,1	2,3	2,4	2,4	2,5	2,6	2,9	2,9	2,5	2,3	2,1	2	2,4

Station name: 17702 Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30

Below is given the average wind blow diagram over long years. In this connection, the directions with the highest blowing speed are (NNW) North - North West and (NW) North West and (N) North.



Yearly average wind speed

Figure 53. Yearly wind diagram according to the blow speeds (1960 – 2017)

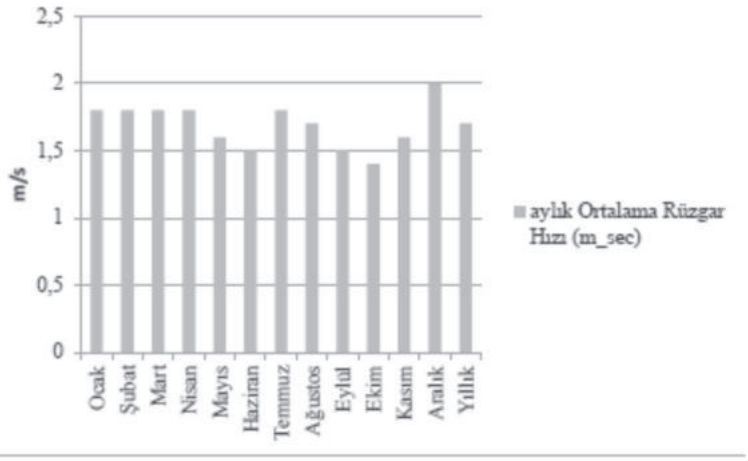
Average wind speed

The average wind speed according to the observation records of the Bozüyük Meteorological Station in years 1960 -2017 is 1,7m/sec.

Chart 37. Monthly average wind speed in years 1960 – 2017

MONTHS	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Average wind speed (m/sec)	1,8	1,8	1,8	1,8	1,6	1,5	1,8	1,7	1,5	1,4	1,6	2	1,7

Station name: 17702 Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30



m/sec **Monthly average wind speed (m/sec)**

January –February – March – April – May – June – July – August – September – October – November – December

Months

Figure 54– Monthly wind speed diagram (1960 – 2017)

Maximum wind speed and its direction

Below are given the maximum wind speeds according to their blowing direction. According to this the highest wind speed is 26,5 m/sec in the South (S) direction.

Chart 38. Maximum wind speed and its direction

	MONTHS												
Maximum wind speed (m/sec)	January	February	March	April	May	June	July	August	September	October	November	December	Annual
	SSW 23,6	S 26,3	SSE 26,0	SW 23,6	SW 18,7	WNW 20,0	N 16,1	SW 17,6	N 18,3	S 20,0	SSE 25,2	SSW 20,9	S 26,3

Station name: 17702 Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30

Figure 55– Monthly maximum wind speed (1960 – 2017)

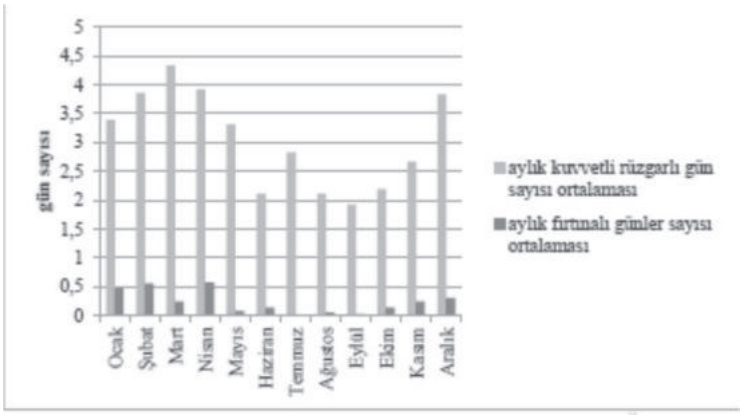
Average number of thunderstorm days, Average number of strong wind days

According to the observation records of the Bozüyük Meteorological Station in years 1960 -2017, the average number of thunderstorm days is 9,3 and the average number of strong wind days is 63,5.

Chart 39. The number of thunderstorm days and Strong wind days in years 1960 - 2017

MONTHS	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Average number of thunderstorm days	3,39	3,86	4,33	3,92	3,31	2,11	2,83	2,11	1,92	2,19	2,67	3,83	36,47
Average number of strong wind days	0,47	0,56	0,25	0,58	0,08	0,14		0,06	0,03	0,14	0,25	0,31	2,87

Station name: 17702 Bozüyük, Altitude from sea level: 754 m, Latitude: 40, Longitude: 30



Number of days

Average number of thunderstorms days

Average number of strong wind days

January –February – March – April – May – June – July – August – September – October – November – December

Figure 56– Graphic of the number of thunderstorm days and number of strong wind days (1960 – 2017)

The meteorological data were provided from the Bozüyük Meteorological Station code number 17702, which is the station located closest to the region where the enterprise is situated. The data obtained from this station are the 2013 meteorological data such as temperature, atmospheric pressure, wind speed, cloudiness level, the distance of the clouds from the ground.

The atmospheric rise data of the region where the enterprise is situated were obtained from the station located in Istanbul. The data provided from these two stations were loaded to the ARMET program and were transformed into the format to be used in the AERMOD program.

In the modeling study, the wind profile of the region was created using the Bulletins of the Bozüyük Meteorological Station edited in years 1960 -2017 which contained all the data obtained in that period. The wind profiles of the last 10 years were studies and the data of year 2013, which would represent many years, were used.

According to the modeling results, the values at 533 points (9,97 micro g/m$^{3)}$ remain under the UVS value (40 micro g/m^3 – limit value for year 2024). The 24 hour YSK value, did not exceed the short terms SKHKKY border value (value expected for year 2024 is KVS=50 micro g/m^3) among the 533 pieces receiver media network.

Air Quality Modeling Report is submitted attached (see Attachment 5.3)

IV.2.10. Other characteristics

There is no other issue to be evaluated under this heading.

IV.3. Characteristics of the Social Economic Environment

IV.3.1. Social infrastructure Facilities in the territory (Education, Health, Cultural Services and the rate of utilization of these facilities

Education

The literacy rate in Region TR 41 is higher than the country average. Besides, the women's literacy ratio in Region TR 41, is lower than men's literacy rate, just as it is in the whole country.

Chart 40 – Institutions connected to Bilecik Provincial Directorate of Family and Social Policies

Type of Institution	Number	Capacity	Registered persons	Actually cared persons
Institution for the Care of Boys	1	50	51	46
Institution for the Care of Girls	1	75	29	23
Center for the Care and Rehabilitation of Old People	1	80	79	79

Source: Bilecik Provincial Directorate of Family and Social Policies, 2013

It can be observed that the pre- schooling rate in Region TR 41 is above the country average, is at a high level. At the same time it is obvious that such a high pre- schooling rate needs also classroom and teacher support.

Chart 41 – 2012 Literacy rates in the Region and Country

	WOMEN	MEN	TOTAL
BURSA	98,25	98,86	96,56
ESKIŞEHIR	95,7	99,25	97,47
BILECIK	95,2	99,03	97,18
TR 41	94,64	98,95	96,79
TURKEY	**93**	**98,56**	**95,78**

Source: Turkey Institute of Statistics (TÜIK), 2012

The professional and technical schooling rate in Region TR 41 is at a very good level, above the average level of Turkey. The result of evaluating these schooling data together with the number of teachers and students per classroom shows that the professional and technical education services capacity in this region needs to be increased.

Chart 42 – 2012-2013 Pre-school and Elementary school Net and Gross Schooling rates (%)

	Men	Women	Men	Women	Men	Women	Men	Women
BURSA	41,54	49,30	62,52	60,27	108,23	109,49	99,34	99,16
ESKIŞEHIR	52,69	50,84	78,01	77,03	107,33	107,50	98,99	98,89
BILECIK	52,52	52,76	78,40	79,95	106,15	107,07	98,52	98,89
TR 41	48,92	50,97	72,98	72,42	107,24	108,02	98,95	98,81
TURKEY	44,56	43,50	66,20	65,16	108,21	108,65	98,77	98,56

Source: Turkey Institute of Statistics (TÜIK), 2012

Chart 43 – 2012-2013 Secondary school Schooling rates (%)

	Men	Women	Men	Women	Men	Women	Men	Women
BURSA	42,09	47,85	28,85	34,31	61,68	50,06	48,26	40,96	77,11	75,27
ESKIŞEHIR	47,74	62,26	36,47	50,15	60,95	43,32	50,80	34,75	87,27	84,91
BILECIK	43,47	50,17	30,47	38,97	68,51	56,93	60,88	51,17	91,35	90,14
TR 41	44,43	53,43	31,93	41,14	63,71	50,10	53,31	42,29	85,24	83,44
TURKEY	52,08	51,67	33,80	36,54	43,60	37,59	34,73	29,60	68,53	66,14

Source: Turkey Institute of Statistics (TÜIK), 2012

The region there are in total six universities of which three are in Bursa, two in Eskişehir and one in Bilecik. Among these, The Bursa Orhangazi University is a foundation university and the others are state universities. Bilecik Şeyh Edibali University founded in year 2007 and Bursa Technical University founded in year 2011 are targeting a top level technical education infrastructure parallel to the economic development of the region. On the other side, Anadolu University with its model of attendance- free education is an institution that meets the need for attendance- free education at country level.

Chart 44 – Universities in the region and their sub- units

	Faculty	Institute	High school	Professional high school	Center
ULUDAĞ UNIVERSITY	11	4	3	15	19
BURSA TECHNICAL UNIVERSITY	6	2	1	--	--
ORHANGAZI UNIVERSITY	3	2	1	--	1
ANADOLU UNIVERSITY	16	8	4	4	32
ESKIŞEHİR ORHANGAZİ UNIVERSITY	9	5	2	4	24
BILECIK ŞEYH EDIBALI UNIVERSITY	3	2	--	7	1
TR 41	48	23	11	30	77

Source: ÖSYM (Student Selection and Placement Center) High Education Statistics (TÜIK), 2012

Parallel to the national policies, the private education infrastructure is becoming stonger in Region TR 41. The increase in the number of private education institutions from 32 in year 2010 to 75 in year 2013 points out to an important development. As a service infrastructure for the individuals who need special education, Anadolu University assumes an important function. Within the structure of the university, there are special departments that provide education for the handicapped and wunderkinds.

Chart 45 – Institutions providing Special education, Guidance and Counseling services

	Bursa	Eskişehir	Bilecik	TR 41
Special education practice school Level 1	7	3	1	11
Special education practice school Level 2	6	2	1	9
Special education job practice school	7	2	1	10
Special education professional training center	10	2	2	14
Elementary school for the hearing- impaired	2	1	--	3
Secondary school for the hearing- impaired	2	1	--	3
Special education elementary school	3	1	2	6
Special education secondary school	3	1	2	6
BILSEM (Science and Art Centers)	5	1	1	4
RAM (Guidance Research Centers)	5	2	2	9
TOTAL	**47**	**16**	**12**	**75**

Source: Ministry of Education General Directorate of Special Education and Guidance Services, April 2013

Health

Chart 46 – Institutions providing Special education, Guidance and Counseling services

	Bursa	Eskişehir	Bilecik	TR 41
Number of Hospitals (State + University)	23	13	4	40
Number of Hospitals (Private)	18	6	0	24
Family Health Center (Health care center before 2008)	178	67	24	269
Number of Sanitariums	140	21	32	193
Number of Mother Child Health/ Family Planning Centers	2	1	1	4
Number of Dispensaries	7	1	1	9
Total number of Beds (actual)	25	45	15	29
Number of beds per each 10.000 people	6644	3545	305	10494
Bed occupancy rate (%)	25	45	15	29
Number of Pharmacies	68	67	39	58
Community Health care Centers	17	14	8	39
Family Physician Unit	738	223	60	1021
Oral and Dental Health Care Centers	4	0	1	5

Source: Ministry of Education General Directorate of Special Education and Guidance Services, April 2013

From the point of view of accessing the health personnel Eskişehir is the most favored. Although the population of Bilecik is much smaller when compared with the other two provinces, the number of health care

personnel is insufficient. Bursa and Bilecik provinces are under the Turkey average especially as the number of physicians, whereas Eskişehir human resources are above the average in all categories.

Chart 47 – Number of health care personnel per each 10.000 people

	Number of physicians (total)	Dentists	Nurses and Midwives	Pharmacists
Bursa	151	28	248	34
Eskişehir	201	33	339	45
Bilecik	110	18	251	3
TR 41	159	27	193	34
Turkey*	169	28	237	35

Source: Health Provincial Directorates, 2013 April, * One Oral and Dental Care Hospital in Eskişehir was added to the number of hospitals.

Chart 48 - Province Directorate of Youth Services and Sports Number of Sports Facilities

Bursa	68
Eskişehir	31
Bilecik	28
TR 41	127

Source: General Directorate of Sports 2012

Cultural Services and the rate of benefitting from these services [20]

In the Bilecik province, there are 4 highlands that could be valued within the tourism context. The highlands are located in the South- West of the province. In the region there are also several ponds that could be used for sports and fishing.

Highlands

The highlands located in the Bilecik Province are :

Kömürsu Highland: at 28 km distance from the Bozüyük Sub- province, covered with fir trees, black pines, beech trees, junipers and various flowers. It is an important highland for winter tourism.

Çiçekli Highland: this highland located at 1906 m altitude in the Üçtepeler zone enjoys the clean and fresh air of the Bozüyük sub- province, its clear waters and is covered with green grass, multicolored flowers, forests and the thyme smelling endemic plant called “Çimtein”.

Sofular Highland : this highland at 28 km from the sub- province center is at 1600 m altitude and covered with pine trees and fire trees. It is important for highland tourism.

Uzunçam Highland : the highland covered by beech trees, pine trees and other various trees, is located at 143 km from the center of Pazaryeri sub- province.

Although within the borders of the Bilecik province there is one pond or lake in each sub province, there are in total only 4 ponds that would be of value from the tourism point of view.

[20] BilecikProvince Tourism Inventory, 2017, Ass.Dr. Ahmet VATAN Istanbul Civilization University, Faculty of Tourism

* Küçükelmalı Pond : located near the Küçükelmalı Village at 10 km distance from the Pazaryeri sub- province center, is a recreation ground covered by pine trees. The surroundings of the pond

situated at 950 m altitude are suitable for the youth and boy scouts camps and are qualified as nature sports and cultural park.

* Bozcaarmut Pond : located near the Bozcaarmut Village at 15 km distance from the sub-province center, is a recreation area covered by fir trees and pine trees, suitable for camping and resting. The altitude of the Bozcaarmut Pond is 1051 m.

* Pelitözü Pond : the pond located at 7 km distance from the province center and surrounded by pine trees, is very popular especially on weekends due to its large area and transportation easiness.

* Dodurga Dam : the dam and its surroundings close to the Bozüyük Dodurga town, are a place preferred for resting and hand- line fishing.

Mineral springs and hot springs

The hot springs and mineral springs in Bilecik are the following:

* Osmaneli Selçük Mineral Springs: located at 9 km from Osmaneli, the temperature of the spring rich in Sodium Chloride, Sodium Bicarbonate, Sodium Sulfate, is 15 – 20 degrees. It is good for stomach, liver, gall bladder, intestines and urinary system diseases and facilitates the elimination of kidney calculi and bladder stones.

* Söğüt Çaltı Hot Springs: located at 10 km distance from Söğüt Province center, 40 from Bilecik Province center and 5 km from the Çaltı Village, on banks of Sakarya River, the spring water can be used for bathing and drinking. It is healing disturbances such furuncles, itchy and inflammatory skin diseases, stomach disorders, rheumatism, nephrites, poly nephrites, gall bladder and gynecological diseases.

Water Falls

The waterfalls that are a point of touristic attraction of many touristic destinations are not very many in the Bilecik Province. There 3 waterfalls in 2 different locations within the province borders. The waterfalls that are valuable for tourism and attract the visitors are the following (Arıkan, 2012:176):

* Kınık Waterfalls : the water that springs from the rocks at the Alamandere Location of the Kınık Village Center offers an interesting view. Its distance from the province center is 25 km.

* Suuçtu Waterfalls : is one of the rare beauties of the Yenipazar sub- province. It is close to the Yukarıçaylı Village. Its distance from the sub- province is 10 km. The water falling from a height of 30 m creates a marvelous view.

* Inhisar Waterfalls : The waterfalls that preserves completely its natural structure is located near the Çalkara Village at 9 km distance from the province.

Caves, canyons

There is one cave, one canyon among the other natural environment resources of the province. The Yediler Forest (Atatürk Forest) located at 2 km from the city center, at the Eskişehir exit of the town, suitable for excursions and walks, is evaluated as one of the other natural environmental resources of the province (Vatan, 2015: 81)

Inhisar Cave : this is the biggest of the numerous caves that named the region and the view of its stalactites and stalagmites is enchanting the visitors. It is located in the South of the Inhisar sub-province center, on the Northern slope of the Inkaya Peak overlooking the Sakarya River.

Canyon : is located towards the Karahasanlar Village of the Yenipazar sub- province. The canyon that has a 538 m high entry, ends after 3 km at 385 m height at the Harmanköy borders of I Inhisar sub- province.

Historical values

Bilecik is a province in which the traces of tumulus settlement have lasted intensively until our days. The tumulus consists of reminiscences belonging to settlement places that had been established and destroyed at different times. However, what makes Bilecik unmatchable is its role in the foundation of the Ottomans and of the Republic of Turkey. The Ottoman Empire was founded on these lands and many historical masterpieces from those times carry the names of the important founder personalities (Turkay, 2008:97).

37 masterpieces belonging to different periods that were evaluated within the scope of historical values are in the Bilecik Province. 9 of these are mosques, 8 are tombs,4 are martyrdoms, 4 are inns, caravanserais, almshouses. The other 12 are churches, Turkish baths, monuments, towers, rock tombs and historical buildings.

Mosques

There are 9 mosques in the Bilecik Province from the Ottoman period (Orhangazi Mosque, Kasımpaşa Mosque, Çelebi Sultan Mehmet Mosque, Rüstem Paşa Mosque, Köprülü Mehmet Paşa Mosque, Hamidiye Mosque, Ertuğrul Gazi Masjid (Kuyulu Masjid), Mihal Gazi Mosque).

Tombs

Within the Bilecik Province borders there are more than one tombs. They belong to the fathers of opinion of the Ottoman State, namely Şeyh Edebali, Dursun Fakih and Ertğrul Gazi. Apart from these, the other tombs in the province belong to Abdukllah Mihalgazi, Savcı Bey, Kamuran Gazi, Mehmet Nuri Efendi and Has Mehmet Bey.

Inns, caravanserais, almshouses

It is well known that there were a lot of inns and caravanserais in Bilecik that is located on the Istanbul – Ankara road. Those that have survived until our days, the Kasım Paşa almshouse – Bozüyük, Mihal Bey Inn – Gölpazarı and Köprülü Megmet Paşa Caravanserais, are at Vezirhan (Arıkan & Tünel, 2013: 68)

Museums

There are 2 museums in the Bilecik Province. One is in the city center and the other in the Soğüt sub-province. Along with these, the Bilecik City Museum works are running on. The Ertuğrul Gazi Museum in the Söğüt sub- province that used to be a bandage house, is attracting the attention of the visitors by its interesting architecture.

The other historical buildings in the Bilecik Province are various. Churches, Towers and rock tombs are only some of these. There another 12 masterpieces identified as historical values: Hacios Georgios Church, Emirler Turkish Bath, Governor's Fountain, Orphanage, Gordios Rock Tombs, Selçuk Observatory Towers, Hamidiye High school, Atatürk Mansion, Ottoman Junior High School, Clock Tower, Rock Tomb, Staircase Rock.

Cultural values

In the Bilecik Province the following handicrafts are practiced:

Wood carving, marble objects workmanship, hand knitting, hand weaving with shuttle, ceramics, Hand weaving (velour), pocket knife and knife making, tatting, wood carving (Dereköy village), Pottery, Pleaching, Silk carpet weaving (Nazif Paşa Village, Bahçe Sultan Village), Hand weaving (various cotton and woolen woven things), Wadmal making, Lace making with the needle, Hand embroidery, Hand knitting (socks, gloves, etc.).

In the Kınık Vilage of the Pazaryeri sub- province, pottery has been practiced since 120 years. Pottery started 120 years ago in Kınık when the Bulgarian emigrant Şakir Usta discovered the soil suitable for pottery.

According to the data of the Ministry of Culture and Tourism, there are 6 accommodation facilities with tourism operation permit in the Bilecik Province. The accommodation facilities with Municipality permit are 12. Among the accommodation facilities with tourism operation permit in the Bilecik Province, Hotel Eronour and Grand Belekoma Hotel are in the province center and the other 4 accommodation facilities with tourism operation permit ate in the Bozüyükl sub- province.

IV.3.2. The Project Area and the Utilization of the Urban and Rural lands in its close vicinity (Distribution of the settlement areas, the Present and Planned Utilization Areas, in this context the Industrial Zones, Ports, Residences, Touristic areas, etc.)

The urbanization rate of the Region TR 41, except for the Bilecik Province, is considerably higher than the country average. Since the year 2012 Eskişehir has been the province with the highest urbanization rate of 90,01% among the provinces of the Region TR 41. Bursa with an urbanization rate of 89,35% is the second and Bilecik has the lowest urbanization rate of 75,91%.

The urban settlements are quite concentrated in the province centers and the rural settlements have low concentrations and arte expanding in the sub- provinces. In Bilecik there are 8 sub- provinces including the sub-province center, 7 towns and 243 villages. 75.91% of the population lives in the province and sub-provinces centers, whereas 24,09% lives in the towns and villages.

The population of the TR 41 region is 3.682.037 people and represents 4,87% of the total population of Turkey. Although the the population in this region has been increasing continuously, during the last years the population of Bilecik has been decreasing.

Chart 49. The Regional Demographic Indicators

	Year	Bursa	Eskişehir	Bilecik	TR 41	Turkey
Total population (persons)	**2012**	2668171	789750	204116	3682037	75627384
Urbanization rate (%)	**2012**	89,85	90	75,91	88,75	77,28
Population density (persons/ km^2)	**2012**	258	57	47	129	98,
Yearly population increase (per thousand)	**2012**	13,50	10,83	1,31	12,25	12,01
Fertility speed (pieces)	**2012**	1,83	1,44	1,74	1,74	2,08
Average age	**2012**	31,87	39,90	32,51		29,70

Source: Turkey Institute of Statistics (TÜIK), 2012

In the TR 41 region the largest city as surface, is Eskişehir, them comes Bursa and Bilecik comes next. Although Bilecik is one of the small sub- provinces of Turkey, in its province Bilecik is the sub-province center with the largest surface.

The TR 41 region with its 22 industrial zones is the first in the country. The industrial zones of the TR 41 region are 13 in Bursa, 3 in Eskişehir and 6 in Bilecik, making a total of 22 specialized and normal industrial zones.

In Bilecik there has been noted an increase in the artificial zones due to the development of mining. Apart from this, the increase in the number of constructions is an important reason of the change in the land utilization.

According to the study conducted by BEBKA in year 2012 by using 24 indicators, the study of the Region TR 41 revealed that the 1st degree develop provinces in Bilecik are the Province center and Bozüyük. [21]

IV. 3.3 Other Characteristics

There are no issues to be evaluated under this topic.

[21] Bursa – Eskişehir – Bilecik Regional Plan, 2014 - 2023

PART V: THE IMPACT OF THE PROJECT ON THE AREAS DEFINED IN PART IV AND THE PRECAUTIONARY MEASURES TO BE TAKEN

(This part describes the impacts of the project on the physical and biological environment and explains the legal, administrative and technical measures which will be taken to prevent, minimize and improver these impacts under the topics V.1 and V.2)

V.1. Preparation of the land, the activities at the construction and installation stages, the impacts on the physical and biological environment and the precautionary measures to take

V.1.1. Within the scope of the jobs concerning the preparation of land, the location and size of the excavation area, among the materials to be used for excavation, the transportation, storage, etc. of those materials that are flammable, explosive, harmful and toxic and their utilization

Within the foundation of the 48 turbines project scope, there will be an excess of vegetal soil and excavation material .

Construction of turbine foundation: 24 m x 24 m x 4 m = 2.304 m^2 (1 piece turbine)

From 48 turbines there will be excess material from almost 110.592 m^3.

There will come out about 126.432 m^3 excess excavation material from the communication roads between the turbines. It is foreseen that 10% of this material will be vegetal soil.

Since the excess excavation material that will come out at the construction of each turbine will be used as filling material, its storage is not an issue.

The excavation work will last for 15 months, 26 days per month, 10 hours per day. The foundation work of each turbine takes about 26 days.

The excavation calculations are given below:

The excavation material amount:

Working periods	: 15 months, 26 days per month, 10 hours per day
Excavation specific weight	: 1,6 tons/m^3
Vehicle capacity	: 30 tons
Total excavation amount	: 126.432 m^3 x 1,6 ton/m^3 = 202.291 ton
Excavation amount per hour	: 51,87 ton/hour

The utilization of flammable, explosive, harmful and toxic materials within the project scope is out of question.

V.1.2. The places where excavation material residues such as soil, stones, sand, etc. will be transported and for which purposes they would be used

The 126.432 m^3 excavation material excess will be utilized according to the provisions of Article 26 of the Regulations on Excavation Waste Control *"The excavation soil, except for the vegetal soil will be primarily used in the filling, recreation, solid residue storage areas as daily cover layer and similar purposes, in case the re-utilization is not possible, it will be stored and destroyed. "*Within this scope, it is planned to use the excavation material that will come out will be primarily in the filling, recreation, solid residue storage areas as daily cover layer and similar purposes; in case the re-utilization is not possible, it will used pursuant to the protocol that will be concluded with the Concerned Authority, in the road construction works or in the zone deemed appropriate by the Concerned Authority for environmental arrangements and in this case, it will be taken from the area and transported pursuant to the provisions of SKHKKYin order to restore the area. For these reasons, there is no intention to store it in the construction zone.

As mentioned, it is supposed that about 5% of the excavated material (6.322 m^3) will be vegetal soil. There is no intention to store vegetal soil in the construction zone. The vegetal soil that would come out in the area of each turbine will be used for creating green zones within the scope of landscape works made for environmental arrangements.

The project works will be compliant with the **"Regulations on Excavation, Construction and Ruin Waste Control"** number 25406, dated March 18th, 2004.

V.1.3. Proceedings regarding the construction of the activity units

There will be installed 48 turbines within the project scope. During the land preparation and excavation for foundation, there will be excavation material coming out. For the land preparation and excavation for foundation different work machines will be used such as excavators, rollers, graders, rubber connection loaders, trucks, cranes, water trucks. The work machines that will be utilized during the construction period are given in Chart 50. For the foundation of each turbine an excavation of 24 m x 24 m (576 m^2) and 4 m deep will be made and when the steel and concrete foundation is ready the installation of the towers will be done using the cranes.

Chart 50 - The work machines that will be utilized during the construction period

Noise source	Pieces
Excavator	4
Roller	1
Grader	1
Rubber connection loader	1
Truck	4
Crane	3
Water truck	1

V.1.4. Dust spreading operations such as breaking, grinding and storage during the p

During the excavation of the turbine foundations in the construction period, there will be dust emissions due to the earth dislocation, loading and unloading operations.

The dust emissions were estimated taking into consideration the "Industrial Air Pollution Regulations" number 27277 dated July 3rd, 2009 (as amended by number 29211 dated December 20th, 2014) Attachment 12, Chart 12.6.

Chart 51 – Dust emission factors for calculating the dust emmisions

Sources	Emission factors		Unit
	Uncontrolled	Controlled	
Dislocation	0,025	0,0125	
Loading	0,010	0,005	kg/ ton
Transportation (two way total distance)	0,7	0,35	(kg/km – ton)
Unloading	0,010	0,005	Kg/ton
Storage	5,8	2,9	kgdust/ha.day

Source: Industrial Air Pollution Regulations Attachment 12, Chart 12.6

Working periods : 15 months,
26 days per month,
10 hours per day

Excavation specific weight : 1,6 tons/m^3

Vehicle capacity : 30 tons

Total excavation amount : 126.432 m^3 x 1,6 ton/m^3 = 202.291 ton

Excavation amount per hour : 202.291 ton s/year/15 months/1 month/26 days/1 day/10 hours:
51,87 ton/hour

Since one truck has a transportation capacity of 30 tons, one truck make in average (518,7 tons/day)(30 tons/trip)= 18 trips per day .

Chart 52 – Dust emission factors and emission debits

Dust factors	**Emission values**	**Emission debits**
Dislocation	0,025 kg/ton	51,87 tons x 0,025 kg/ton = 1,30 kg/hour
Loading	0,01 kg/ton	51,87 tons x 0,01 kg/ton = 0,51 kg/hour
Transportation	0,7 kg/km- vehicle	(18 vehicles x 0,7 kg/km.vehicle x 5km)/10 hours = 6,3 kg/ hour
Unloading	0,01 kg/ton	51,87 tons x 0,025 kg/ton = 1,30 kg/hour
Total emission amount		**9,41 kg/hour**

It is planned to use the excavation material that will come out after the foundation excavation in the project area, primarily in the filling, recreation, solid residue storage areas as daily cover layer and similar purposes; in case the re-utilization is not possible, it will used pursuant to the protocol that will be concluded with the Concerned Authority, in the road construction works or in the zone deemed appropriate by the Concerned Authority for environmental arrangements and in this case, it will be taken from the area and transported pursuant to the provisions of the Industrial Air Pollution Control Regulations in order to restore the area. For these reasons, there is no intention to store it in the construction zone.

According to this, the dust emission resulting from the turbine foundation excavation works was calculated as 9,41 kg/hour. Since the expected total dust emission of 9,41 kg/hour exceeds the limit value of 1 kg/hour given in **Chart 2.1. of the Industrial Air Pollution Regulations** in force, an emission distribution model was prepared **(see Attachment 5.3.)**.

Measures for preventing dust spreading

Evaluation within the scope of Attachment 1 of the Industrial Air Pollution Control Regulations

1. Attachment 1 List, paragraph **c** – bulk material stored in open says:

"Bulk material, scrap material, dusting material or raw material stored in open is permitted to be stored in open as long as the air quality standards are provided. For this purpose, precautionary measures such as the ones in the examples below are taken.

- In the area wind breaker large plates are fixed, walls are built or wind breaker trees are planted,

- The conveyors and other carriers and the connections between then which unload materials to and from each other must be covered,

- Loading and unloading is done without spreading the material around,

- The material is covered with nylon backer or other material type made of pieces the size of which is not bigger than 10 mm.

- The upper layers should be kept at 10% humidity. The installation necessary for this is provided."

The excavation excess material resulted during the construction period will be entirely used as filling material for the construction works of the units; in case it not be used, then it must be taken out of the area within the scope of the Industrial Air Pollution Regulations. For this reason, there will be no storage of excess solid material in the area.

However, during the transportation of the excess solid material loading and unloading will be done without spreading the material around, the material will be covered with nylon backer or other material type made of pieces the size of which is not bigger than 10 mm. The upper layers should be kept at 10% humidity.

1. Attachment 1 List, paragraph **e** – status of the facility intern al roads

"The internal roads of the facilities should be regularly cleaned, all anti- dusting measures should be implemented (watering, aspirating, treating with antistatic dust collecting substances, etc.) and the roads must be paved with bituminous coating materials (asphalt, etc.) and/or concrete materials. "

The internal roads of the facilities will be covered with concrete and will be regularly cleaned in order to prevent any potential negative impact upon the air quality.

Within the project scope compliance will be provided with the provisions of the "Regulations for the Assessment and Management of Air Quality" number 26898 dated June 8th, 2008 (as amended with number 27219 dated May 5th, 2009) and of the" Industrial Air Pollution Control Regulations" number 27277 dated July 3rd , 2009 (as amended with number 29211 dated December 20th, 2014).

V.1.5. Amount and specifications of the waste material created within the scope of the project and its method of disposal

It is planned to build 1 central prefabricated site within the borders of the power plant area in order to provide the conditions necessary to meet the social needs of the personnel who will work there during the construction period of the project. In the central prefabricated site within the borders of the power plant area there will be buildings such as kitchen, dormitories, toilets, bathrooms. The personnel who will work there during the construction period of the project will meet all their needs here and will also be able to accommodate here.

a. Domestic solid waste

The plan is to have about 40 people work during the construction period within the scope of the project. The domestic solid waste to come from the working personnel was calculated as follows, based on the quantity of 1,17 kg assumed [22] to be the daily domestic solid waste produced per person:

Chart 53 – Domestic solid waste amount (Construction period)

Prospective number of workers	= 40 persons
Solid material to be consumed	= 1.17 kg/ day
Solid waste to be created	**= 1.17 kg/ day X 40 people = 46,8 kg/day- person**

The domestic solid waste amount created at the stage of construction within the project scope was calculated as 46,8 kg/day- person and this waste will be treated in compliance with the provisions of the "**Waste Management Regulations**" number 29314 dated April 2nd, 2015 (as amended with number 30016 dated March 28th, 2017).

These domestic solid wastes will be kept closed in order to prevent any threat for the human health, will be accumulated and made ready for collection in the way defined within the scope of **Article 9** and of the concerned legislation by the authorized institutions and authorities appointed to collect, transport and dispose of them and the necessary measures will be taken.

The domestic solid waste collected within the scope of Article 5 will be transported by the project owner in special closed container vehicles, in such a way that the environment will not get polluted by view, odor, dust, leakages and similar factors, to the place deemed suitable by the Dodurga Municipality after getting the required permits. **The institutional opinion of the Dodurga Municipality is submitted attached (see Attachment 4.6).**

The codes of the domestic solid wastes are below

Chart 54 – Domestic solid waste codes

Waste Code according to Attachment IV list	Description of the waste code
20	MUNICIPALITY WASTES INCLUDING THE SEPARATELY COLLECTED FRACTIONS (DOMESTIC WASTES AND SIMILAR COMMERCIAL, INDUSTRIAL AND CORPORATE WASTES)
20 03 01	Mixed Municipality Wastes

Source: Waste Management Regulations

[22] www.tuik.gov.tr-belediye katı atık istatistikleri, 2016

Packaging Waste

Accumulation in the site of recyclable wastes such paper, cardboard, metallic, glass, etc. packaging materials is expected.

Waste Code according to Attachment IV list	Description of the waste code
15	**PACKAGING WASTE: ABSORBERS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHES NOT DEFINED OTHERWISE**
15 01	**Packaging (Including the Packaging wastes collected separately by the Municipality)**
15 01 01	Paper and cardboard packaging
15 01 02	Plastic packaging
15 01 04	Metallic packaging
15 01 07	Glass packaging

Source: Waste Management Regulations

Vegetal Waste Oil

The cafeteria services offered at the site will create the vegetal oil wasted code 20 01 26 (except solid and fluid waste oils code 20 01 25) in Attachment IV of the **Waste Management Regulations**" number 29314 dated April 2nd, 2015 (as amended with number 30016 dated March 28th, 2017). The vegetal waste oils will be collected in bins/ tanks/ barrels labeled "Vegetal waste oils" and will be sent in licenses vehicles to environmentally licensed disposal/ recycling facilities.

Medical Waste

There will be no infirmary on the site. However, there will be a first aid room for the initial interventions in case of emergency. The medical wastes expected to accumulate are below in Chart 56.

Chart 56 - Medical waste

Waste Code according to Attachment IV list	Name of the waste in the Hazardous Waste List
18 01 01	Cutters (except 1801 03)
18 01 03*	Wastes subject to special collection and disposal procedures in order to prevent infections
18 01 04	Wastes subject to special collection and disposal procedures in order to prevent infections (for example bandages, body casts, single use clothes, diapers)
18 01 09	Medicaments except 18 01 08

Source: Waste Management Regulations

The medical wastes that would accumulate during the project will be collected separately from the other wastes compliant to the "Regulations for the Medical Wastes Control" number 29959 dated January 25th, 2017 , in red plastic bags labeled "Caution! Medical waste" and, based on the medical waste contract, will be collected by the licensed company and sent to the medical waste treatment facilities for disposal.

Waste oil

Any oil change of the work machines and transportation means during the construction phase of the project will be executed at the licensed fuel oil stations with maintenance and repair permit. For this reason, the oil waste at site is out of question.

Hazardous waste, expired tires, waste storage batterys, waste batteries

Any oil change of the work machines and transportation means during the construction phase of the project will be executed at the fuel oil stations with maintenance and repair license. For this reason, the accumulation of hazardous wastes, expired tires, waste storage batteries, waste batteries at site is out of question.

The Operation Phase

1. Domestic Solid Waste

The plan is to have about 20 people, experts in their field, work at the facilities. There is expected to have mixed municipality wastes code 200301 as in Attachment IV of "**Waste Management Regulations**" number 29314 dated April 2nd, 2015 created by the working personnel.

Chart 57 – Domestic solid waste amount from the Administrative and Social Facilities

Prospective number of workers	= 20 persons
Solid material to be consumed	= 1.17 kg/ day
Solid waste to be created	**= 1.17 kg/ day X 20 people = 23,4 kg/day- person**

The domestic solid waste amount created during the operation phase within the project scope was calculated as 23,4 kg/day- person and this waste will be treated in compliance with the provisions of the "**Waste Management Regulations**" number 29314 dated April 2nd, 2015 (as amended with number 30016 dated March 28th, 2017).

2. Packaging waste

At site there will accumulate wastes code 150101, 150102, 150104, 150107 (paper packages, cardboard boxes, glass bottles, beverage containers, drink metallic containers, etc.) as in Attachment IV of "**Waste Management Regulations**" number 29314 dated April 2nd, 2015 due to personnel consumption.

In order to provide recycling and retrieval of the paper wastes among the domestic solid wastes, the paper wastes will be collected separately at source, accumulated within the scope of the **"Regulations for the Packaging Waste Control"** number 30283 dated December 27th, 2017 and then will be sent to the municipalities responsible of their collection and/or to the environmentally licensed recycling companies which have contracts with the municipality.

3. Waste Oils

In case maintenance- repair will be done in the facility area, then other motor, transmission box and greasing oils, other hydraulic oils, residue isolation and heat transmission oils residues will be accumulated. The waste code of the motor, transmission box and greasing oils in the Waste Management Regulations Attachment IV is 13.02.08; of the hydraulic oils in the Waste Management Regulations Attachment IV is 13.02.13; of the residue isolation and heat transmission oils residues in the Waste Management Regulations Attachment IV is 13.02.10.

Since the turbines need maintenance once per year, this will create some oil waste. The quantity of waste oil resulting from the maintenance of one turbine is 60 lt. Consequently, there will be a total of 2880 lt waste oil due to the annual maintenance of 40 turbines. These oils coming from the turbine maintenance will be collected temporarily in closed non- leaking barrels that will be taken by the licensed recycling/ disposal facilities.

4. Vegetal waste oils

During the operation phase, the food needs of the working personnel will be outsourced. For this reason, in the project area the vegetal oil waste with the code 20 01 26 in Attachment IV of the "**Waste Management Regulations**", will not be created (except liquid oil waste code 20 01 25).

However, in case meals will be cooked in the cafeteria of the administrative building, the waste vegetal oil resulting from the cafeteria services will be kept, pursuant to the "**Regulations for the Waste Vegetal Oils Control"** number 29378 dated June 6th, 2015, in closed non- leaking barrels, on the concrete ground of a closed area not affected by the weather conditions, and will be transported by licensed companies to the environmentally licensed recycling/ retrieval facilities.

5. Hazardous Waste

Due to the fluorescent lights, photocopiers – printers, facsimiles working in the offices located in the administrative building within the borders of the power plant area, there will be residues such as cartridges, toner, etc.

Changing the fluorescent lamps in the units and offices will create hazardous wastes. The waste fluorescent bulbs will be collected in boxes so that they will not break, after having been stored temporarily in the waste area, the collected fluorescent bulbs will be transported by licensed transport companies to the environmentally licensed recycling/ retrieval facilities.

The printers in the company will also create waste. The waste cartridges and toners are classified as printer toners containing hazardous substances code 08 03 17 in Attachment IV of the Waste Management Regulations and will be regularly collected and stored temporarily in the waste area. The accumulated and temporarily stored wastes will be sent with licensed transport companies to the environmentally licensed recycling/ retrieval facilities.

In the facilities area there might also be packaging materials, used oil barrels , chemical substance barrels containing or contaminated with Hazardous Substances code 15 01 10 in the attachment IV of the Waste Management Regulations. The contaminated packaging materials will be collected regularly and kept temporarily in their section of the waste area. The temporarily stored wastes will be sent with licensed transport companies to the environmentally licensed recycling/ retrieval facilities.

In order to minimize the risk of any kind of materials contaminated by oils, fuel oil, etc. for the human health and environment, the hazardous wastes created pursuant to **Waste Management Regulations**" number 29314 dated April 2nd, 2015 (as amended with number 30016 dated March 28th, 2017), will be collected separately from the other wastes, will be stored temporarily in their section of the waste area and wastes will be sent with licensed transport companies to the environmentally licensed recycling/ retrieval facilities.

6. Medical Waste

There will be no infirmary on the site. However, there will be a first aid room for the initial interventions in case of emergency. The medical wastes expected to accumulate are below in Chart 56.

In case medical wastes would accumulate during the project, they will be collected separately from the other wastes compliant to the "Regulations for the Medical Wastes Control" number 29959 dated January 25th, 2017 , in red plastic bags labeled "Caution! Medical waste" and, based on the medical waste contract, will be collected by the licensed company and sent to the medical waste treatment facilities for disposal.

7. Waste Batteries – Waste storage battery

Should the maintenance repair of the work machines and vehicles functioning in the facilities will be done in the project area, there will be waste storage batteries and waste batteries from the electronic devices used in offices. The waste storage batteries will be stored temporarily in their section in the waste area and the waste batteries will be collected in the TAP waste battery collection box.

The temporarily stored waste batteries and waste storage batteries will be delivered to the licensed collection points pursuant to the "**Regulations for the Control of Waste Batteries and Waste Storage Batteries"** number 25569 dated August 31st, 2004 (amended by number 25744 on March 3rd, 2005, by number 27305 on July 3rd , 2009, by number 27537 on March 3rd, 2010, by number 28812 on November 5th, 2013, by number 29214 on December 23rd, 2014) published in the Official Gazette.

In case hazardous wastes will accumulate during the operation phase, the project owner engages to take the preventive measure below.

Within the project scope, they will prepare the Waste Management Plan within the scope of Article 9 of the "Regulations for Waste Management" number 20314 of April 2nd, 2015 (as amended by number 30016 on March 3rd, 2017)

The waste declaration will be made through the Environmental Information System (http://online.cevre.gov.tr) within the frame of the provisions stipulated in the Regulations for Waste Management.

The hazardous wastes will be sent with licensed transport companies to the environmentally licensed recycling/ retrieval facilities and the National Waste Transportation forms used for transport will be submitted to the Environment and Urbanization Province Directorate.

The temporary storage of the wastes created during the construction and operation phases will be in a temporary storage area within the project area borders , deemed suitable by the Environment and Urbanization Province Directorate, compliant with the provisions of the **Waste Management Regulations**" number 29314 dated April 2nd, 2015 (as amended with number 30016 dated March 28th, 2017).

The subject temporary storage area will have to be covered, surrounded by a wire fence, etc. to protect from rain, snow and street/ wild animals, should have a leak proof base, where the waste oils, etc. resulting from the daily activities would be collected in strong, leak proof, secure, tanks and/ or containers suitable to international standards.

Within the project scope compliance will be provided with the provisions of the "Regulations for the Control of Earth Pollution and Areas Polluted from Spot Sources" number 27605 dated June 8th, 2010, enacted by publication in the Official Gazette. In order to minimize the risk of any kind of materials contaminated by oils, fuel oil, etc. for the human health and environment, compliance will be provided with the provisions of the "**Waste Management Regulations**" number 29314 dated April 2nd, 2015 (as amended with number 30016 dated March 28th, 2017).

V.1.6. The amount of water to be used within the scope of the project, where from and how it will be supplied, which is the process that the sewer water resulting from the utilization of the water will pass through and how it will be released to the receiver environment and the specification of this water

Water supply

There will be potable – industrial water consumption during the construction phase in order to meet the needs of the personnel on duty and to prevent dust spreading. The potable- industrial water for the personnel's needs and the potable- industrial water for other utilizations (dusting prevention, washing of equipments, etc.)will be provided against charge by rented tankers, from the source point indicated by the Dodurga Municipality. **The institutional opinion of the Dodurga Municipality on the matter is submitted attached (see Attachment 4.6.)**.

If necessary, the potable water for the personnel on duty is planned to be supplied by the water sold on the market in plastic bottles or demijohns that are licensed and have permits.

Within the project scope, compliance will be provided with the provisions of **the "Regulations for the Water for Human Consumption"** enacted by its publication in the Official Gazette Issue number 25730 dated February 17th, 2005 and of the Regulations for Amending the Regulations for the Water for Human Consumption published in the Official Gazette Issue number 25305 dated July 31st, 2009.

Compliance will also be provided with the provisions of the **"Regulations for Amending the Regulations for the Management of the Surface Waters"** (Surface Water Quality Management) number 29327 of April 15th, 2015 (as amended with number 29797 on August 10th, 2016) .

Water Consumption

Watering the Roads

In order to prevent the deposition of dust on the roads during the preparation of the power plant area and the installation of turbines, sprayer tanks will do the watering. During the excavation of the turbine foundation the sprinkler trucks will be watering the roads in the power plant area three times per day. Under these circumstances, there will be a consumption of 15 m^3 of water.

Personnel consumption

According to the plan, there will be 40 persons working at the power plant during the construction period of the project. During the construction period, one prefabricated site is planned to be established within the project area borders. In the site, one leak proof septic fosse with a capacity of 80 m3 is planned to be constructed.

Assuming the water quantity needed per person is 150 L /day [23], the water needs of the personnel working at the thermal power plant and at the regular ash storage facility, are calculated below.

Chart 58 – Personnel's Water Consumption and Disposal of Sewer water (construction phase)

		Sewer water disposal method	Regulations
Number of workers for the power plant construction	= 40 persons		
Quantity of water to be consumed	= 150 L/person- day = 0.15 m^3/person- day		
Total quantity of water needed	**= 0,15m^3/person- day x 40 persons = 6m^3/ day**	**Will be eliminated by the sewage trucks of the private companies against charge**	**Water Pollution and Control Regulations**

The domestic type sewer water will come from the consumption of the utilization water by the personnel working on site. Assuming that all of the water consumed by the personnel will become sewer water, there will be approximately 6m^3/ day domestic sewer water during the construction stage.

Chart 59 – Typical sewer water polluters and their average concentrations

PARAMETER	CONCENTRATION
pH	6- 9
AKM	200 mg/L
BOI5	200 mg/L
KOI	500 mg/L
Total Nitrogen	40 mgL
Total Phosphorous	10 mg/L

Source: Benefield, L. and Randall, C., 1980

According to the above chart, the polluter weights in the domestic sewer water resulting from 40 people who will work at the construction stage within the project scope, will be as follows.

Chart 60 - Polluter weights in the domestic sewer water

AKM	1,2 kg/ day	(6 m^3/day x 200 mg/L/1000)
BOI5	1,2 kg/ day	(6 m^3/day x 200 mg/L/1000)
KOI	3 kg/ day	(6 m^3/day x 500 mg/L/1000)
Total Nitrogen	0,24 kg/ day	(6 m^3/day x 40 mg/L/1000)
Total Phosphorous	0,06 kg/ day	(6 m^3/day x 10 mg/L/1000)

Chart 61– Personnel's Water Consumption and Disposal of Sewer water at the construction phase

		Sewer water disposal method	Regulations
Roads	15 m^3/ day	Evaporation and absorption by the ground	
Personnel needs	6 m^3/ day	On site will be collected in the septic faucet and then eliminated by the sewage trucks	Water Pollution and Control Regulations
Total	21 m^3/ day		

[23] Water supply and sewer water elimination practices Istanbul Technical University – 1998 Prod. Dr. Dinçer TOPACIK, Prof.Dr. Veysel EROĞLU

The domestic sewer water will be collected in the 80 m^3 leak proof septic faucet **(see Attachment 3.5.)** that will be built pursuant to the **"Regulations for the faucet construction in the places where the construction of sewage system is not possible"** enacted by its publication in the Official Gazette Issue number 13783 dated March 19th, 1971 and will be eliminated against charge by the concerned municipality with the sewage trucks. The leak proof septic faucet plan was designed with 4 compartments. Attached is given the **Leak proof septic faucet plan** (**see Attachment 3.5**)

Within the project scope, compliance will be provided with the provisions of the **" Water Pollution Regulations"** enacted by its publication in the Official Gazette Issue number 25687 dated December 12th, 2004 (Regulations for Amending the Water Pollution Regulations number 26786 dated February 13th, 2008 enacted by its publication in the Official Gazette Issue number 275375 dated March 30th , 2010.

V.1.7. Proceedings regarding the grounding in the Wind Power Energy Plant and the installation of the lightening conductor

The integration of the grounding system, equipotential system, internal lightening conductor and external lightening conductor systems is very important for providing the protection of the turbines and power plant against lightening and excessive voltage. These systems should be perfectly designed, integrated together and should get maintenance services periodically, at least once per year. Grounding is important for protecting the turbines against lightening, for preventing excessive stress and potential sudden changes and, consequently, for protecting in general the wind turbines and everything around them.

The installed wind turbines will be equipped with lightening protection systems in order to prevent electrical shocks, physical damages, effects of voltage fluctuations upon the electrical or mechanical equipments. Each rotor blade will have fixed internally the lightening protection equipment.

All the electrical lines within the wind power energy plant will be earthed according to the respective standards. Moreover, all the towers made of steel parts will be equipped with lightening conductor equipment to prevent any effects of lightening and other electricity releases. The towers will not be earthed only from one point but from several points separately. The facility grounding, in other words of the neuter points of the transformer, will be done completely separate from each other. The grounding details will be set according to the concerned standards and regulate and the soil resistance of the area. Production will take start only after the project details are approved by the respective institution.

The grounding resistance in the poles with grid foundation should be measured before any grounding element is fixed. In case the grounding resistance is under 20Ω, there is no need for ay additional grounding. When the grounding resistance is above 20Ω, an grounding pole or plate will be fixed in the central point of the pillar feet, this pole or plate will be connected to the grounding by a conductive and the two feet on the polygon. In case the grounding resistance drops under 20Ω after this operation , other grounding will not be applied. If the grounding resistance is still above 20Ω after this operation, then counterweights will be added. This operation will repeat until a grounding resistance of 20Ω will be reached or until all feet will get counterweights attached.

During the resistance measurements surrounding environment will be treated with sensitivity, chlorides or conductive salts will not be used. The measurements will be made using a grounding conductor separated from the pole or resistance by a junction.

Compliance will be provided with the provisions of the Regulations for Grounding at the Electrical Facilities enacted by their publication in the Official Gazette Issue number 24500 date August 21st, 2001.

V.1.8. The sources and level of the sound that will be created due to the jobs which will be executed related to the preparation of land and during the construction of the facilities.

Article 38, sub-paragraph **c** of the **"Regulations for the Assessment and Management of the Environmental Noise"** (ÇGDYY) enacted by their publication in the Official Gazette Issue number 27601, dated June 4th, 2010 says that :"the enterprises indicated in Attachment 1 of the Regulations for the Assessment of the Environmental Impact and in Attachment 1 and Attachment 2 of the Regulations about the Permissions and Licenses Required pursuant to the Environmental Law and those enterprises that are planned for environmental impact assessment and which will prepare acoustic reports, are obliged to fulfill the requirements defined in sub- paragraph (c) of the first paragraph of Article 36 and in sub- paragraph (c) of the first paragraph of Article 37.

The project subject activity takes place in the Attachment 1 List of the Environmental Impact Assessment (ÇED) Regulations enacted by their publication in the Official Gazette Issue Number 29186 dated November 25th, 2014. The project subject activity is not in the scope of Attachment 1 List and Attachment 2 List of the Regulations for the Environmental Permissions and Licenses enacted by their publication in the Official Gazette Issue Number 29115 dated September 9th, 2014. For this reason, no "*Acoustic Report*" has been prepared pursuant to the Regulations for the Assessment of the Environmental Impact. However, noise calculations were computed including the measurements, calculations and evaluations necessary for the construction and operation periods and taking into consideration the related clause/ clauses of the Regulations.

Construction

During the construction phase there will be noise starting from the preparation of the ground until the construction is completed, due to the work machines.

According to Article 5 of the "Regulations for the Protection of the Workers from the Risks Related to Noise" enacted by their publication in the Official Gazette Issue number 28721 dated July 28th, 2013, 85 dBA was accepted as the highest exposure level .

Within the scope of the mentioned regulations, when the lowest level of exposure is exceeded, pursuant to the provisions of the **"Regulations about the Utilization of the Personal Protection Devices in the Work places"** published in the Official Gazette Issue number 28695 dated July 2nd , 2013 and of the **"Personal Protection Equipment Regulations**" published in the Official Gazette Issue number 26361 dated November 29th, 2006, the workers should have available for use the suitable ear protection devices, when the highest exposure level is reached or this level is exceeded, the use of the mentioned devices has to be provided and inspected.

Within the project scope compliance will be provided with the provisions of the **"Labor Law"** number 4857, of the **"Work Health and Safety Law"** number 6331 and of the **"Regulations the Protection of the Workers from the Risks Related to Noise"** enacted by their publication in the Official Gazette Issue number 28721 dated July 28th, 2013.

In order to minimize the noise level the maintenance and repair of the work machines will be done periodically and in time, the defective parts will be replaced.

Regarding the noise level of the equipments that will be used at the ground preparation and construction level within the project scope, compliance will be provided with the provisions of the **"Regulations Concerning the Environmental Noise Emission resulting from the Operation of the Equipment in Open Space"**.

Within the project scope, the preventive measures required by the **Labor Law number 4857** and the related regulations for the protection of workers during works, will have to be taken by the company and suitable protective devices or apparatus such as helmets, ear flaps or ear buds will be given to the workers to prevent the noise impact on them. The maintenance and repair of the work machines will be done periodically and in time, the defective parts will be replaced.

All these environmental impact described above will continue during the construction phase and will end once it is completed.

The closest residence is locate in the West direction of the T35 turbine at a distance of about 340 m in the Delielmacık Village.

The list of the equipments to be used in the activity area and their equipment engine power values are given in Chart 54.

The level of the noise created by the equipments operated in the project area is related to their engine powers and the noise level of the equipments will be calculated based on formulas given in Chart 54.

Chart 62. Machines and Equipment operated in the Project Area and their Engine Powers

Noise source	Pieces	Engine Power **
Excavator	2	105 Hp = 78 kw
Truck	10	120 Hp = 90 kw
Loader	7	198,56 Hp = 146 kw
Trans- mixer (with pump)	2	147 Hp = 110 kw
Roller	2	130 Hp = 97 kw
Crane	1	160 Hp = 120 kw
Water truck	1	120 Hp = 89 kw

* 1Hp = 0.746 kw

Chart 63. Probable noise sources in the project area and their noise levels

Noise source	Noise (sound power) level
Excavator	104
Truck	105
Loader	107
Trans- mixer (with pump)	104
Roller	104
Crane	105
Water truck	103

The level of the noise probably created in the area, of the probable noise sources are estimated using the formulas given accordşng to the engine power levels defined in the chart of Article 5 of the **"Regulations Concerning the Environmental Noise Emission resulting from the Operation of the Equipment in Open Space"** prepared by the Ministry of Industry and Trade and enacted by their publication in the Official Gazette Issue number 26392 dated December 30th, 2006. Among the machinery – equipment mentioned in the list of Article 5, the Equipment types tu be used in this area and the formulas defined according to their engine powers are given in Chart 64.

Chart 64. Equipment Type and Noise Levels Defined According to their Net Power Level

Type of Equipment	Net installed power P (kW). Electrical power P_{el}(1)(kW), Implementation mass m (kg), Breaking width L (cm)	Allowed sound power level dB/1 pW	
		1st Phase as of July 3rd, 2004	2nd phase as of January 3rd, 2006
Compaction machinery (vibrating rollers, vibrating plates, vibrating hammers)	P≤8	108	105
	8< P≤70	109	106
	P>70	89 + 11 log P	86 + 11 log P
Caterpillar bulldozers, crawler loaders, crawler excavator loaders	P≤55	106	103
	P>55	87 + 11 log P	84 + 11 log P
All-wheel dozers, all-wheel loaders, wheel excavators- loaders, damper trucks, graders, loader type earth filling compaction machines, trucks with inner combustion engine stimulation counter weight hydraulic lifting machines (rollers without vibration),	P≤55	104	101
	P>55	85 + 11 log P	82 + 11 log P

Calculation of the Machines Sound Power Level

The sound power level of each machine is calculated below based on the formulas given in Chart 64.

Excavator : P = 105 Hp = 78 W*
In case P > 55 the allowed sound power level (L_w) = 84 + 11 log P
Since 78 Kw > 55 Kw, then L_w= 84 + 11 log 78 = **104 dB**

Source: http://autoclubturley.com/forum/archive/index.php/t-76793.html

Truck : P = 120 Hp = 90 W*
In case P > 55 the allowed sound power level (L_w) = 82 + 11 log P
Since 90 Kw > 55 Kw, then L_w= 82 + 11 log 90 = **105 dBA**
http://www.temsa.com.tr/ismakinalari/urunler.aspx?u=Kaya%20Kamyonu

Wheel loader : P = 198,56 Hp = 146 W*
In case P > 55 the allowed sound power level (L_w) = 82 + 11 log P
Since 198,56 Kw > 55 Kw, then L_w= 82 + 11 log 198,56 = **107 dBA**
http://www.cat.com/tr_TR/products/new/equipment/wheel-loaders.html

Trans- mixer : P= 110 KW
In case P > 110 the allowed sound power level (L_w) = 82 + 11 log P
Since 110 Kw > 55 Kw, then L_w= 82 + 11 log 110 = 104 dB
www.semix.com.tr

Roller : P= 97 kW
In case P > 55 the allowed sound power level (L_w) = 82 + 11 log P
Since 97 Kw > 55 Kw, then L_w= 82 + 11 log 97 = 104 dB
(www.ozmakine.com)

WaterTruck : P = 120 Hp = 89 W*
In case P > 55 the allowed sound power level (L_w) = 82 + 11 log P
Since 89 Kw > 55 Kw, then L_w= 82 + 11 log 89 = 103 dB
http://www.ili.gov.tr/bilgiler/makina_park_kira.htm
* 1 Hp = 0,746 kw

Chart 65. **Number of work machines during the construction phase and their noise levels**

Noise source	Number of equipments	Noise (sound power) level
Excavator	2	104
Truck	10	105
Loader	7	107
Trans- mixer (with pump)	2	104
Roller	2	104
Crane	1	105
Water truck	1	103

All construction work will be done only during daytime (07:00 – 19:00). The calculations of the noise caused by the equipments used for the ground preparation are below.

The distribution of sound level of each noise source in the 4-octave band between 500 – 4000 Hz, the sound power in each octave band is calculated and given in chart 66.

Lw(I) = 10*log (10(Lw/10)/4)
Lw = sound level (dB) of the sound source

In Chart 66, the sound power of each equipment level in the 4-octave band was calculated without considering the number of equipments according to the equipment sound level, in compliance with the provisions of the Regulations for the assessment and Management of the Environmental Noise. In the calculation, the number of equipment was assumed as 1. In Chart 71, the calculation were based on the total sound level, the number of equipments was considered and distribution of all equipments in the activity area according to distance was calculated.

Chart 66. The distribution of the sound power of each equipment level in the 4- octave band

Noise sources	Total	Sound power level (dB)			
		500 Hz	1000 Hz	2000 Hz	4000 Hz
Excavator	104	98	98	98	98
Truck	105	99	99	99	99
Loader	107	101	101	101	101
Trans- mixer (with pump)	104	98	98	98	98
Roller	104	98	98	98	98
Crane	105	99	99	99	99
Water truck	103	97	97	97	97

It is assumed that the total sound power is distributed equally in the 4-octave band.
Lp = Lw + 10*log Q / 4*π*r2
Lpi = The noise emission levels (dB) of the sources in the area at **r** distance
Lw = Sound power level of the source (dB)
Q = orientation coefficient (assumed = 1)
r = distance from source (meter)

Chart 67. Sound Pressure Levels of the Noise Sources in the Project area

Noise sources	Distance (m)	Sound power level (dB)			
		500 Hz	1000 Hz	2000 Hz	4000 Hz
Excavator	10	76,01	76,01	76,01	76,01
	50	62,03	62,03	62,03	62,03
	100	56,01	56,01	56,01	56,01
	250	48,05	48,05	48,05	48,05
	500	42,03	42,03	42,03	42,03
	1000	36,01	36,01	36,01	36,01
	1500	32,49	32,49	32,49	32,49
Truck	10	73,01	73,01	73,01	73,01
	50	59,03	59,03	59,03	59,03
	100	53,01	53,01	53,01	53,01
	250	45,05	45,05	45,05	45,05
	500	39,03	39,03	39,03	39,03
	1000	33,01	33,01	33,01	33,01
	1500	29,49	29,49	29,49	29,49

	10	72,01	72,01	72,01	72,01
	50	58,03	58,03	58,03	58,03

Excavator	100	52,01	52,01	52,01	52,01
	250	44,05	44,05	44,05	44,05
	500	38,03	38,03	38,03	38,03
	1000	32,01	32,01	32,01	32,01
	1500	28,49	28,49	28,49	28,49
Truck	10	72,01	72,01	72,01	72,01
	50	58,03	58,03	58,03	58,03
	100	52,01	52,01	52,01	52,01
	250	44,05	44,05	44,05	44,05
	500	38,03	38,03	38,03	38,03
	1000	32,01	32,01	32,01	32,01
	1500	28,49	28,49	28,49	28,49
Trans-mixer	10	73,01	73,01	73,01	73,01
	50	59,03	59,03	59,03	59,03
	100	53,01	53,01	53,01	53,01
	250	45,05	45,05	45,05	45,05
	500	39,03	39,03	39,03	39,03
	1000	33,01	33,01	33,01	33,01
	1500	29,49	29,49	29,49	29,49
Crane	10	74,01	74,01	74,01	74,01
	50	60,03	60,03	60,03	60,03
	100	54,01	54,01	54,01	54,01
	250	46,05	46,05	46,05	46,05
	500	40,03	40,03	40,03	40,03
	1000	34,01	34,01	34,01	34,01
	1500	30,49	30,49	30,49	30,49
Water truck	10	73,01	73,01	73,01	73,01
	50	59,03	59,03	59,03	59,03
	100	53,01	53,01	53,01	53,01
	250	45,05	45,05	45,05	45,05
	500	39,03	39,03	39,03	39,03
	1000	33,01	33,01	33,01	33,01
	1500	29,49	29,49	29,49	29,49

The pressure levels absorbed by atmosphere at certain distances were calculated and the results as dB are below:

Aatm = (atmospheric absorption) = 7.4* 10-8 (f2 *r / ϕ) dB
f = frequency of the noise source (or the central frequency of the subject frequency band) (Hz) (assumed 2500)
r = distance from the noise source (m)
ϕ = relative humidity (%) (assumed 70,8%)

Chart 68. Atmospheric absorption values calculated according to distance

Frequency (Hz)	Distance (m)	Atmospheric absorption

500	10	0,003
500	50	0,014
500	100	0,028
500	250	0,069
500	500	0,138
500	1000	0,275
500	1500	0,413
1000	10	0,013
1000	50	0,064
1000	100	0,128
1000	250	0,319
1000	500	0,638
1000	1000	1,276
1000	1500	1,914
2000	10	0,051
2000	50	0,255
2000	100	0,510
2000	250	1,276
2000	500	2,552
2000	1000	5,103
2000	1500	7,655
4000	10	0,204
4000	50	1,021
4000	100	2,041
4000	250	5,103
4000	500	10,207
4000	1000	20,414
4000	1500	30,621

The sound pressure level of each noise source in the 4- octave band, after deducting the atmospheric absorption values, calculated according to the formula below is in Chart 69.

At the first 100 meters $L_p \simeq L_{Port}$

After 100 meters $L_p = L_{Port} - A_{At\ m}$

Chart 69. The sound pressure level of each noise source in the activity area related to distance

Noise sources	Distance (m)	Sound power level (dB)			
		500 Hz	1000 Hz	2000 Hz	4000 Hz
Excavator	10	76,01	76,00	75,96	75,81
	50	62,02	61,97	61,78	61,01
	100	55,98	55,88	55,50	53,97
	250	47,98	47,73	46,78	42,95
	500	41,89	41,39	39,48	31,82
	1000	35,73	34,73	30,91	15,60
	1500	32,08	30,57	24,83	1,87
Truck	10	73,01	73,00	72,96	72,81
	50	59,02	58,97	58,78	58,01
	100	52,98	52,88	52,50	50,97
	250	44,98	44,73	43,78	39,95
	500	38,89	38,39	36,48	28,82
	1000	32,73	31,73	27,91	12,60
	1500	29,08	27,57	21,83	- 1,13
Loader	10	72,01	72,00	71,96	71,81
	50	58,02	57,97	57,78	57,01
	100	51,98	51,88	51,50	49,97
	250	43,98	43,73	42,78	38,95
	500	37,89	37,39	35,48	27,82
	1000	31,73	30,73	26,91	11,60
	1500	28,08	26,57	20,83	- 2,13
Trans- mixer	10	72,01	72,00	71,96	71,81
	50	58,02	57,97	57,78	57,01
	100	51,98	51,88	51,50	49,97
	250	43,98	43,73	42,78	38,95
	500	37,89	37,39	35,48	27,82
	1000	31,73	30,73	26,91	11,60
	1500	28,08	26,57	20,83	- 2,13
Roller	10	73,01	73,00	72,96	72,81
	50	59,02	58,97	58,78	58,01
	100	52,98	52,88	52,50	50,97
	250	44,98	44,73	43,78	39,95
	500	38,89	38,39	36,48	28,82
	1000	32,73	31,73	27,91	12,60
	1500	29,08	27,57	21,83	- 1,13
Crane	10	74,00	74,00	73,96	73,81
	50	59,97	59,97	59,78	59,01
	100	53,88	53,88	53,50	51,97
	250	45,73	45,73	44,78	10,95
	500	39,39	39,39	37,48	29,82
	1000	32,73	32,73	28,91	13,60
	1500	28,57	28,57	22,83	- 0,13

Water truck	10	72,96	73,00	72,96	72,81
	50	58,78	58,97	58,78	58,01
	100	52,50	52,88	52,50	50,97
	250	43,78	44,73	43,78	39,95

	500	36,48	38,39	36,48	28,82
	1000	27,91	31,73	27,91	12,60
	1500	21,83	27,57	21,83	- 1,13

The adjustment factors in Chart 70 were used in the calculation of the net sound pressure levels of the noise sources in the activity area.

Chart 70. Adjustment factors according to frequencies

Central frequency (Hz)	Adjustment factor
500	- 3,2
1000	0
2000	1,2
4000	1

The total sound level in the 4- octave band of each noise source calculated according to the results of the calculations based on the adjustment factors in Chart 70, are in Chart 71.

Chart 71. Total sound levels of each noise source in the activity area according to distance

Noise sources	Distance (m)	Sound power level (dB)				
		500 Hz	1000 Hz	2000 Hz	4000 Hz	Total sound level (dBA)
Excavator	10	72,81	76,00	77,16	76,81	82,008
	50	58,82	61,97	62,98	62,01	67,714
	100	52,78	55,88	56,70	54,97	61,332
	250	44,78	47,73	47,98	43,95	52,479
	500	38,69	41,39	40,68	32,82	45,415
	1000	32,53	34,73	32,11	16,60	38,087
	1500	28,88	30,57	26,03	2,87	33,648
Truck	10	69,81	73,00	74,16	73,81	79,008
	50	55,82	58,97	59,98	59,01	64,714
	100	49,78	52,88	53,70	51,97	58,332
	250	41,78	44,73	44,98	10,95	49,479
	500	35,69	38,39	37,68	29,82	42,415
	1000	29,53	31,73	29,11	13,60	35,087
	1500	25,88	27,57	23,03	- 0,13	30,648
Loader	10	68,81	72,00	73,16	72,81	78,008
	50	54,82	57,97	58,98	58,01	63,714
	100	48,78	51,88	52,70	50,97	57,332
	250	40,78	43,73	43,98	39,95	48,479
	500	34,69	37,39	36,68	28,82	41,415
	1000	28,53	30,73	28,11	12,60	34,087
	1500	24,88	26,57	22,03	- 1,13	29,648

Trans- mixer	10	68,81	72,00	73,16	72,81	78,008
	50	54,82	57,97	58,98	58,01	63,714
	100	48,78	51,88	52,70	50,97	57,332
	250	40,78	43,73	43,98	39,95	48,479

	500	34,69	37,39	36,68	28,82	41,415
	1000	28,53	30,73	28,11	12,60	34,087
	1500	24,88	26,57	22,03	- 1,13	29,648
Roller	10	69,81	73,00	74,16	73,81	79,008
	50	55,82	58,97	59,98	59,01	64,714
	100	49,78	52,88	53,70	51,97	58,332
	250	41,78	44,73	44,98	10,95	49,479
	500	35,69	38,39	37,68	29,82	42,415
	1000	29,53	31,73	29,11	13,60	35,087
	1500	25,88	27,57	23,03	- 0,13	30,648
Crane	10	70,80	74,00	75,16	74,81	80,007
	50	56,77	59,97	60,98	60,01	65,707
	100	50,68	53,88	54,70	52,97	59,318
	250	42,53	45,73	45,98	41,95	50,437
	500	36,19	39,39	38,68	30,82	43,313
	1000	29,53	32,73	30,11	14,60	35,831
	1500	25,37	28,57	24,03	0,87	31,203
Water truck	10	69,76	73,00	74,16	73,81	79,002
	50	55,58	58,97	59,98	59,01	64,683
	100	49,30	52,88	53,70	51,97	58,268
	250	40,58	44,73	44,98	10,95	49,296
	500	33,28	38,39	37,68	29,82	42,002
	1000	24,71	31,73	29,11	13,60	34,189
	1500	18,63	27,57	23,03	- 0,13	29,279

L_T = Total sound level (dBA)

$L_T = 10 \log \Sigma\ 10\ L^{i/10}$

Assuming that, in the worst case, all the machines will function at the same time, the equivalent noise levels calculated are in Chart 72.

$L_{daytime} = L_{eq}$

$L_{eq} = 10 \log \Sigma\ 10^{\ LT/10}$

Chart 72. Level of the noise resulting from the construction activities according to distance

Distance (m)	L daytime (dBA)
10	93,22
50	78,93
100	72,54
250	63,68
500	56,60
1000	49,23
1500	44,75

According to Chart 5 of Attachment VIII of the **"Regulations for the Environmental Noise Assessment and Management"** enacted by its publication in the Official Gazette Issue number 26809 dated March 7th, 2008 the daytime limit level determined for the activity is 70dBA.

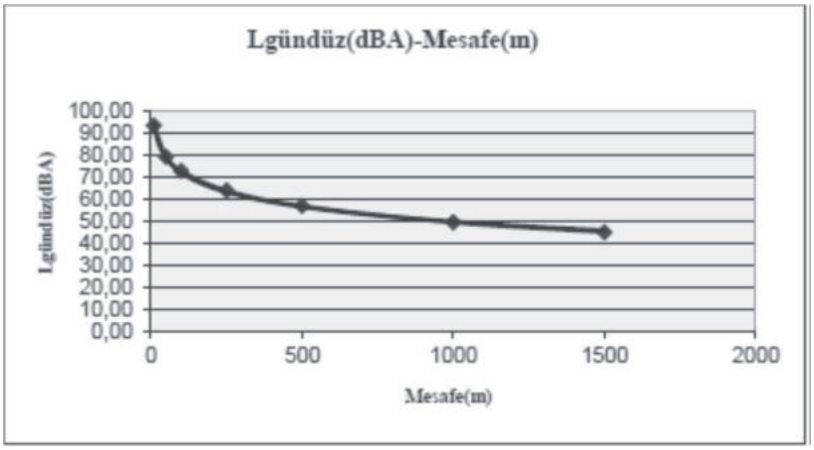
According to the above calculations, the level of the noise created is under the Environmental Noise Level for the Site Area (L daytime = 70 dBA) in Chart 5 of Article 23 of **Regulations for the Environmental Noise Assessment and Management (see Chart 73).**

Chart 73- Regulations for the Environmental Noise Assessment and Management Chart 5: Limit values for the environmental noise in the site areas.

ACTIVITY TYPE (CONSTRUCTION, DEMOLITION, REPAIR)	L DAYTIME (dBA)
BUILDING	70
ROAD	75
OTHER SOURCES	70

All the impacts described above will continue for the duration of the construction and will end upon its completion.

L daytime (dBA)



Distance (m)

Figure 57 – Graphic of Noise distribution according to distance

V.1.9. The natural plant species to be removed in order to provide the land necessary for the construction site and for preparing the land and the area where these operations will be

executed.

As shown in the 1/100.000 scale land assets map, the areas where activities will run in the project zone are areas currently used as Moors, Forests and Dry agriculture (fallow) lands **(see Attachment 2.5)** which are in category VI and VII from the land usability viewpoint as lands not suitable for agricultural exploitation.

Some part of the Project area Power Plant area is in the agricultural and forest zones according to the 1/100.000 scale Environmental Plan map of the Bilecik planning region (see Attachment 2.1).

There were 5 endemic plant species identified in the project zone. These species are: *Abies nordmanniana* (Stex) Spach subsp. *Bornmuelleriana* (Mattf.) Coode & Cullen (LC), *Anthemis aciphylla* Boiss.var. *discoidea* Boiss. (LC), *Onosma isauricum* Boiss. & Heldr. (LC), *Campanula lyrata* L. Subsp. *Lyrata* (LC), and *Minuartia anatolica* (Boiss.) Woron var. *anatolica* (LC). The species specified in the Ecosystem Assessment Report are widely spread in the area. The areas of activity within the project area will be studied before starting the work and, in case any endemic, rare or endangered species will be identified, the protection measures mentioned in the Ecosystem Assessment Report (see Attachment 5.1) will be implemented.

Within the project scope, the Bozüyük Wind Power Energy Plant Project **Landscape Restoration Plan Report** was prepared byYüksel Cem ATIK (**see Attachment 5.2**). As pointed out in the Landscape Restoration Plan Report, measures such as Improvement of the Upper and Lower Vegetation Layers, Erosion control, Soil peeling off and preservation, planting for curtaining purposes will be implemented.

The plant species used at the rehabilitation stage will be the plant species mentioned in the Ecosystem Assessment Report.

According to the opinion of the Republic of Turkey Bilecik Governorship Province Directorate of Food, Agriculture and Livestock, Number E 310762 dated February 8th, 2017 sent within the project scope (**see Attachment 4.8**):"Our Institution has no objection to the activity to run within the scope of the Environmental Assessment Regulations, as long as before the start up of the construction, the necessary permits will be obtained from our Institution according to the "Soil Protection and Land Utilization Law number 5403 and to the "Pasture Law" number 4342.".

According to the Environmental Assessment Study and Assessment Form **(see Attachment 4.7)**, the operations of the Wind Power Energy Plant will have no negative impact on the forests and forestry activities.

Activities within the project scope will run after the required permissions are obtained pursuant to "Earth Protection and Land Utilization Law" number 5403, the " Law for the Rehabilitation of the Olive Plantations and Grafting of the Wild Olive Trees" number 3573 (as amended by Law number 4086), "Law for the Agricultural Reform concerning the Land Arrangements in the Irrigation Areas" number 3083, "Pasture Law" number 4342 and "Aquaculture Products Law" number 1380.

V.1.10. The size of the agricultural lands that will be disposed in order to provide the land necessary for the construction site and for preparing the land, their land usability and species of agricultural products, Permissions to be obtained and Warranties, amount of vegetable soil to be peeled

off the surface, where and how it will be preserved, method of reconsideration, road to be followed regarding the cultivated lands and agricultural products which will be impacted by the construction works.

Land Assets Map and Characteristics

The Land Assets Map at 1/100.000 scale where the project area is plotted is submitted in **Attachment 2.5**. The areas in the 1/100.000 scale Land Assets Map, where the planned wind- turbines will be installed within the project scope, are in the chart below.

Chart 74 – Turbine installation areas on the 1/100.000 scale Land Assets Map

TURBINES AND SWITCHYARD	SURFACE
T1 – T2 – T3 – T4 –T5 – T6 –T7 T8- T9 – T10 – T11 – 12 – T 13 – T14 – T15 - T16 – T17	N 24 3 O VII es
T18 – T19 – T20 – T21 – T23 – T24 –T25 –T26 – T27 – T28 –T29, Switchyard area	15 t 3 K VI es
T30 –T31 – T32 T33 –T42	M 19 t 4 O VII es
T34 – T35 – T36t41	N 20 3 O VII se
T37 – T41 – T43 – T44 – T45 - T46 –T47 –T48	N 30 F VII se
T38 – T39 – T40	N 16 3 H VI es

The explanations of the areas given in the above chart are given belo9w item by item.

N 24 3 O VII e s:

N : Non- calcareous Brown Forest Soil (BTG)
24 : Very shallow (0-20 cm), inclination more than 30% (TOK)
3 : Severe water erosion (ERZ)
O : Forest (SAK)
VII : Lands not suitable for soil utilization AKK)
e : Slope and erosion damage (ATS)
s : Soil incompetence (stony, salty and alkaline) (ATS)

M 15 t 3 K VI e s:

M : Brown Forest Soil (BTG)
15 : Shallow (20-50 cm), inclination 12 - 20% (TOK)
t : Stony (DTO
3 : Severe water erosion (ERZ)
K : Dryland agriculture (Fallow) (SAK)
VI : Lands not suitable for soil utilization AKK)
e : Slope and erosion damage (ATS)
s : Soil incompetence (stony, salty and alkaline) (ATS)

M 19 t 4 O VII e s:

M : Brown Forest Soil (BTG)
15 : Shallow (20-50 cm), inclination 20 - 30% (TOK)
t : Stony (DTO
4 : Very severe water erosion (ERZ)
O : Forest (SAK)
VII : Lands not suitable for soil utilization AKK)
e : Slope and erosion damage (ATS)
s : Soil incompetence (stony, salty and alkaline) (ATS)

N 20 3 O VII e s:

N : Non- calcareous Brown Forest Soil (BTG)
20 : Very shallow (0-20 cm), inclination 20- 30% (TOK)
3 : Severe water erosion (ERZ)
O : Forest (SAK)
VII : Lands not suitable for soil utilization AKK)
e : Slope and erosion damage (ATS)
s : Soil incompetence (stony, salty and alkaline) (ATS)

N 30 F VII s e:

N : Non- calcareous Brown Forest Soil (BTG)
30 : Lyhtosolic and inclination more than 30% (TOK)
F : Shrubbery (SAK)
VII : Lands not suitable for soil utilization AKK)
e : Slope and erosion damage (ATS)
s : Soil incompetence (stony, salty and alkaline) (ATS)

The turbines and the switchyard to be installed within the project scope are located on Non-calcareous Brown Forest Lands and Brown Forest Land according to the Big Lands Group Combination, and on Shrubbery, Forest and Dry land agriculture (Fallow) lands according to the present utilization. From the land utilization point of view, the lands are in categories VI and VII.

According to the 1/100.000 scale Environmental Plan map (**see Attachment 2.1.**) of the Bilecik planning region, the Project area - Power Plant zone is situated on the Agriculture, Forest, Karasu Estuary Protection Area, Karasu Streamlet Spring Protection Area, Rural Development Axis, Urban Development Axis.

The exact amount of the agricultural lands will be determined precisely after the nationalization proceedings, all the permits required for using the agricultural lands for non- agricultural purposes within the scope of the "**Earth Protection and Land Utilization Law" number 5403** enacted by its publication in the Official Gazette Issue number 25880 dated July 19th, 2005, will be obtained after getting the positive Environmental Assessment Document and before the construction start up.

In case of any action within the scope of the **Pasture Law number 4342** in the pastures before or after the operation activities, the activity will not start before the required permissions are obtained from Bilecik Province Directorate of Food, Agriculture and Livestock.

During and after the project construction works there no change will be made on the flow conditions of the dry streams, steams and rivers in the project area and no intervention will be made thereon; at the surface water sources passages the habitats of the existing aquaculture products will not be harmed (hazardous substances, ertc. will not be poured therein) and compliance will be provided with the provisions of the "Aquaculture Products Law" number 1380.

Opinion number E310761 dated February 8th, 2017 sent by the Republic of Turkey Governorship of Bilecik Agriculture and Livestock Province Directorate is submitted attached (**see Attachment 4.8**) As mentioned in the opinion of the subject institution, the activity will not start before the required permissions are obtained pursuant to the provisions of the "Earth Protection and Land Utilization Law" number 5403 and Pasture Law number 4342.

measures mentioned in the Ecosystem Assessment Report (see Attachment 5.1) will be implemented.

Within the project scope, the Bozüyük Wind Power Energy Plant Project Landscape Restoration Plan Report was prepared byYüksel Cem ATIK (**see Attachment 5.2**). As pointed out in the Landscape Restoration Plan Report, measures such as Improvement of the Upper and Lower Vegetation Layers, Erosion control, Soil peeling off and preservation, planting for curtaining purposes will be implemented.

The plant species used at the rehabilitation stage will be the plant species mentioned in the Ecosystem Assessment Report.

V.1.11. The area of the site to be established for the personnel who will do all the work starting from the preparation of the land until all the units will be ready for operation and where from and how the other technical/ social infrastructure needs will be supplied

It is planned to build 1 central prefabricated site within the borders of the power plant area in order to provide the conditions necessary to meet the social needs of the personnel who will work there during the construction period of the project. In the central prefabricated site within the borders of the power plant area there will be buildings such as kitchen, dormitories, toilets, bathrooms. The personnel who will work there during the construction period of the project will meet all their needs here and will also be able to accommodate here.

Within the project scope, during the operation stage there will be also an administrative building. Since the staff working in the administrative building will come and leave every day, it is not necessary to build any lodges, etc. for them. In the administrative building there will be toilet, cafeteria, rest room, offices and the social needs of the staff will be met by providing all the required hygiene conditions. In the power plant area there will be the administrative building and the social facilities where the staff's social needs will be met by providing all the required hygiene conditions. Accommodation will not be provided in the power plant area, the staff will come and go daily by shuttles.

Within the project scope, compliance will be provided with the requirements of the "**Work Health and Safety Law"** number 6331 and **"Labor Law**" number 4857.

The required hygiene conditions will be provided in the planned social facilities (cafeteria, showers, toilets, etc.) and disinfectant treatment will be made at suitable time intervals in compliance with the provisions of the Regulations about the Methods and Principles of using the Biocidal Products".

In order to protect the human beings and the environment, treatments with biocidal products will be applied periodically by companies that have "Biocidal Product Application Permit" from the Ministry of Health.

V.1.12. Among the jobs to be performed starting with the preparation of the land until all the units will be ready for operation, the jobs related to human health and those risky and harmful for the environment

Facts risky and dangerous for the human health and environment, resulting from the activities within the project scope, are facts that may always occur in any work.

The installation of the wind power turbines heavy machines and parts will be lifted using cranes. The communication between the crane operator and the installation team during installation is of primary importance. The installation team member who provides the communication from ground with the crane operator, can communicate with the operator by speaking (if the distance between them is short and the medium is quiet), with the wireless or by sign language.

In this context, occurrence of incidents such injuries, traffic accidents, materials spilling, persons' falling down, work machinery accidents, etc. from the workers' health viewpoint, is quite probable. In order to prevent such incidents warning signs should be placed in the work area and the workers should get work safety training.

At all stages of the project compliance will be provided with the Labor Law number 4857 and to the provisions of the all regulations and legislation passed in connection with this law, and to the Work Health and Safety Law number 6331 and the related regulations; all necessary measures will be taken in order to minimize the accidents and risks.

Furthermore, a work place safety and accident prevention plan according to the regulation and legislation in force will be prepared and implemented. The personnel and workers will be equipped with the work safety materials required by the work done and their work conditions suitable to the work health and safety rules will be secured. The anti- dust masks will be used by personnel and workers in order to protect their health. The risk of work accident occurrence due to reduced concentration will be prevented by allowing short rest intervals during the workers' work hours within the project scope.

In case of important diseases and injuries, the first intervention will at the infirmary in the project area and the injured person will be sent to the closest health unit.

During the construction phase there will be noise, starting from the preparation of the ground until the construction is completed, due to the work machines.

According to Article 5 of the "**Regulations for the Protection of the Workers from the Risks Related to Noise"** enacted by their publication in the Official Gazette Issue number 28721 dated July 28th, 2013, 85 dBA was accepted as the highest exposure level .

Within the scope of the mentioned regulations, when the lowest level of exposure is exceeded pursuant to the provisions of the **"Regulations about the Utilization of the Personal Protection Devices in the Work places"** published in the Official Gazette Issue number 28695 dated July 2nd , 2013 and of the **"Personal Protection Equipment Regulations**" published in the Official Gazette Issue number 26361 dated November 29th, 2006, the workers should have available for use the suitable ear protection devices, when the highest exposure level is reached or this level is exceeded, the use of the mentioned devices has to be provided and inspected.

In order to minimize the noise level, the maintenance and repair of the work machines will be done periodically and in time, the defective parts will be replaced.

The environmental impact resulting from the operation of the work machines will continue during the construction period and will end when the construction will be completed.

Regarding the noise level of the equipments that will be used at the ground preparation and construction stage within the project scope, compliance will be provided with the provisions of the **"Regulations Concerning the Environmental Noise Emission resulting from the Operation of the Equipment in Open Space"**.

There will be no explosion within the project scope.

Any oil change of the work machines and transportation means during the construction phase of the project will be executed at the closest fuel oil stations holding maintenance and repair licenses. Within this scope, the provisions of the "Regulations for the Waste Oils Control" enacted by their publication in the Official Gazette Issue number 26 952 dated July 30th, 2008 will be respected. However, in case that the maintenance and repair will have to be done in the project area, the waste oils resulting from this operation will be disposed after they are analyzed and their category is identified. Within the scope of the Regulations for the Waste Oils Control, the waste oil will be stored temporarily according to their categories and will be carried b y the licensed transportation companies to the licensed recycling/ disposal facilities.

1. Protection of the turbines against sudden excessive voltage and lightening

The integration of the grounding system, equipotential system, internal lightening conductor and external lightening conductor systems is very important for providing the protection of the turbines and power plant against lightening and excessive voltage. These systems should be perfectly designed, integrated together and should get maintenance services periodically, at least once per year. Grounding is important for protecting the turbines against lightening, for preventing excessive stress and potential sudden changes and, consequently, for protecting in general the wind turbines and everything around them.

The installed wind turbines will be equipped with lightening protection systems in order to prevent electrical shocks, physical damages, effects of voltage fluctuations upon the electrical or mechanical equipments. Each rotor blade will have fixed internally the lightening protection equipment.

2. Frosting of the Wind Turbines

One of the problems encountered in the wind energy plants installed in the geographical areas with cold climatic conditions, is the frosting of the rotor blades. In case the necessary anti-frost measures are not taken, then the ice pieces falling from or thrown by the rotor blades might harm the living creatures around or might damage the facilities and the equipment. Consequently, taking into consideration the climatic conditions, the turbine rotor blades should be equipped with active temperature sensors, if frosting cannot be prevented the turbines should stop automatically.

4. Safety of the Wind Turbines

Tress passing of strangers and non- authorized people in the wind turbine area will be strictly prohibited. All people working inside the turbine will wear protective equipment such as work clothes, climbing vest, special shoes, protective helmet, gloves, eyeglasses, earphones.

The maintenance of the wind turbines will be done regularly once at each 12 months. Accordingly, in order to prevent any probable damage to the turbine equipment during control, the climbing vest, safety cable protective equipments will be ready and these safety equipment will b e stored in a dry environment.

3. Measure to take regarding the maintenance - repair and operation of the electrical equipment

The work safety measures to take regarding the maintenance, repair and operation work, should be fixed by written procedures and records. The team members who work at the turbines, switchyard and electricity transmission lines must get a written permission from the concerned operation unit and its authorized staff.

Before starting the work, in order to prevent the energizing of the subject installation, the cutters and separators of each voltage must be on and measures should be taken to provide keeping this situation. After cutting the energy source of the installation or equipment to be worked on, it should be labeled and locked, the key of the locking equipment must be kept only by the responsible personnel, the places of the danger warning labels and cards should not be changed by anybody but the responsible personnel.

The visitors coming to the power plant should be informed about the dangers and risks of the work place, the work place safety rules should be explained, the necessary protective equipment must be given to them and then they should be permitted to enter the work place in the company of the work health and safety representative.

The failure, maintenance, repair and test works should be attended by minimum two persons.

All the work equipment utilized in the facilities will be inspected, maintained and repaired at the times indicated in the standards, if not, as foreseen by the producer; these inspections should be recorded on permanent basis.

The installations and devices should undergo periodic maintenance and repair, the maintenance periods should not exceed the periods stipulated in the national legislation, the executed maintenance and repairs should be recorded on permanent basis.

These turbines equipped with advanced technology are made of strong materials. For these reasons, accidents such as suddenly braking rotor blades, falling towers, have very low probability. Apart from this, since the closest settlement to turbines is at 300 m distance, the risk of human and material damage is low.

The grounding of the turbines and its control will be performed within the scope of the related regulations and the required measures will be implemented. The turbines will be appropriately illuminated in order to prevent the collision of the birds and air transportation means. The turbine blade tips will be painted in orange color against any possibility of collision with the rotor blades.

During the non- functioning periods of the turbines there is the possibility of snow accumulating on the turbine rotor blades and of further frosting. Under these circumstances, the turbines will be monitored by remote control.

V.1.13 Concerning the impact exerted upon the material, the determination of the level and expansion size of the impact upon the cultural and natural heritage available at the surface and underground (upon the traditional urban texture, archeological remains, natural values that have to be protected)

The opinion of the Directorate of Eskişehir Cultural assets Protection Province Council is attached **(see Attachment 5.4).** As mentioned in the subject institution opinion, the archive revision proved that there is no coincidence with any cultural asset registered within the scope of Law number 2863.

In case there will be any changes of the turbine coordinated and/ or road itineraries, opinion will be requested concerning the revised areas. There will be no construction or physical intervention in the subject area as long as the opinion of opinion of the Directorate of Eskişehir Cultural assets Protection Province Council is not received.

In case any cultural asset, natural asset, sit or preservation area is found during the activities run within the project scope, then the activity in course will stop immediately and the concerned authorities will be informed.

In the power plant area there is no registered natural sit area and/or natural asset identified according to the "Regulations concerning Method and principles for the identification, registration and approval of the protected areas". However, regarding the planned investment, compliance will be provided with the provisions of the Environmental Law number 2872 and its amending Law number 5491 and of the regulations emitted/to be emitted in relation to this law and the permissions stipulated within the frame of other legislations will be obtained, all the measures required for the protection of the ecologic balance, for the protection and development of the environment will be taken.

V.1.14 Other activities

There is no other issue to be evaluated under this topic

V.2. The activities at the operation level of the project, their influences upon the physical and biological environment and the precautionary measures to be taken

V.2.1. The characteristics, dimensions, capacity, etc. of the activity units, other information

There will be in total 48 turbines in the Wind Power Energy Plant Area. 40 of these 48 turbines will be each of 1,7 MWm/MWe installed power and 8 will be each of 2,75 MWm/MWe installed power GE WIND turbines. The selected hub height for the 1,7 MWm/MWe installed power turbines is 80 m, turbine rotor diameter is 103 m and the selected hub height for the 2,75 MWm/MWe installed power turbines is 85 m, turbine rotor diameter is 120 m. The Technical specifications of the turbines are given in Chart 75, Chart 76 and Chart 77. The electric energy to be generated by the power plant will be 323.000.000 kwh per year. It is planned to transfer 154 Kv of this energy to the switchyard center by using the Seyitömer – Bozüyük Transformer Center EİH in- out connection.

Chart 75 The technical specifications required for the area Turbines

Province	Bilecik			
Sub- province	Bozüyük			
Number of units	48 pieces			
Installed power of the units	40 pieces of 1,7 MWm/1,7 MWe, 8 pieces of2,75 MWm/2,75 MWe			
Total installed power of the facility units	90 MWm/90 MWe			
The maximum annual production of the available installed power	323.000.000 kwh/ year			
The point foreseen for the connection to the system	Bozüyük Organized Industrial Zone			
The current physical status of the production facility	Project			
The capacity factor foreseen for the project	41%			
Turbines				
Turbines	Unit power (MWm)	Hub height (m)	Turbine Rotor Blade Diameter (m)	Turbine Brand
T1	1,7	80	103	GE103
T2	1,7	80	103	GE103
T3	1,7	80	103	GE103
T4	1,7	80	103	GE103
T5	1,7	80	103	GE103
T6	1,7	80	103	GE103
T7	1,7	80	103	GE103
T8	1,7	80	103	GE103
T9	1,7	80	103	GE103
T10	1,7	80	103	GE103
T11	1,7	80	103	GE103
T12	1,7	80	103	GE103
T13	1,7	80	103	GE103
T14	1,7	80	103	GE103
T15	1,7	80	103	GE103
T16	2,75	85	120	GE120
T17	2,75	85	120	GE120
T18	1,7	80	103	GE103
T19	1,7	80	103	GE103
T20	1,7	80	103	GE103
T21	1,7	80	103	GE103
T22	1,7	80	103	GE103
T23	1,7	80	103	GE103
T24	1,7	80	103	GE103

T25	1,7	80	103	GE103
T26	1,7	80	103	GE103
T27	1,7	80	103	GE103

T28	1,7	80	103	GE103
T29	1,7	80	103	GE103
T30	1,7	80	103	GE103
T31	1,7	80	103	GE103
T32	1,7	80	103	GE103
T33	2,75	85	120	GE120
T34	2,75	85	120	GE120
T35	2,75	85	120	GE120
T36	2,75	85	120	GE120
T37	1,7	80	103	GE103
T38	1,7	80	103	GE103
T39	1,7	80	103	GE103
T40	1,7	85	103	GE120
T41	1,7	85	103	GE120
T42	1,7	80	103	GE103
T43	1,7	80	103	GE103
T44	1,7	80	103	GE103
T45	1,7	80	103	GE103
T46	1,7	80	103	GE103
T47	2,75	85	120	GE120
T48	2,75	85	120	GE120

Chart 76 GE 1,7/103

1.7 – 103 Hub Heights	85 m
1.7 – 103 Tip Heights	131,5 m
Noise	107 dBA, 105 dBA with low noise trailing edge technology
Frequency	50 Hz and 60 Hz
1.7 – 103 Blades	50.2 m
Technology	Controlled, low noise level, Vortex generators, weak grid support

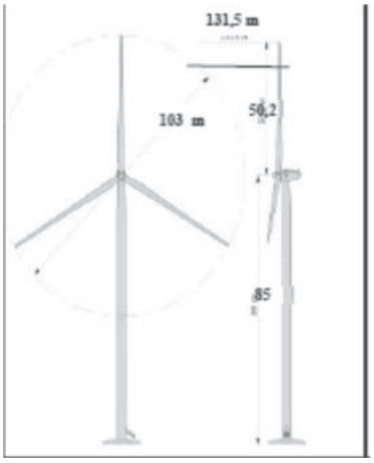


Figure 58 - GE 1,7/103 Turbine

Chart 77 GE 2,75/120

2,75 – 120 Hub Heights	85 m
2,75 – 120Tip Heights	145 m, 158,3 m, 170 m. 199 m
Noise	106 dBA
Frequency	50 Hz and 60 Hz
1.7 – 103 Blades	60 m
Technology	Controlled against cold weather

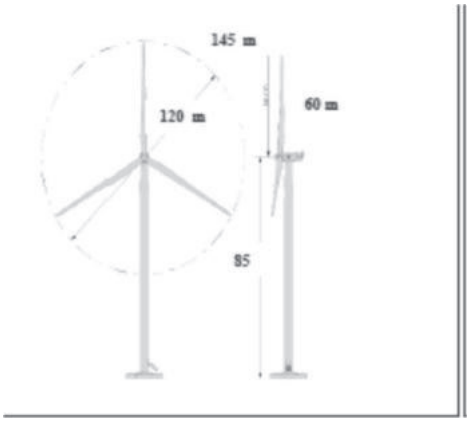


Figure 59 - GE 2,75/120 Turbine

V.2.2. What kind of maintenance job will be done for the wind power energy plant, materials to be used, kind and amount of residues to come out, their specifications, dimensions, characteristics and how

they will be disposed

The operation and maintenance periods of the turbines might be different depending on the turbine technology and turbine type. The wind turbines, according to their technology, get maintenance 1 time per year. One time at each 5 year period they undergo thorough maintenance.

Since the turbines need maintenance once per year, this will create some oil waste. The quantity of waste oil resulting from the maintenance of one turbine is 60 lt. Consequently, there will be a total of 2880 lt waste oil due to the annual maintenance of 40 turbines. These oils coming from the turbine maintenance will be collected temporarily in closed non- leaking barrels so that they do not spoil the surroundings and the barrels will be taken by the licensed recycling/ disposal facilities.

Within the project scope, any oil change of the machinery and equipment during the construction phase of the project, will be executed at the licensed fuel oil stations holding maintenance and repair permits. However, the oils resulting from the maintenance and repair eventually made –on site will be kept, pursuant to the "Regulations for the Waste Oils Control" , according to their categories, in closed non- leaking barrels, on the concrete ground of a closed area not affected by the weather conditions, and will be transported by licensed companies to the environmentally licensed recycling/ retrieval facilities.

Within the project scope compliance will be provided with the provisions of the **"Regulations for the Control of Waste Oils"** published in the official Gazette Issue number 26952 dated July 30th, 2008 (as amended with number 27305 dated July 31st, 2013; with number 27537 dated March 30th, 2010; with number 28812 dated November 5th, 2013) . Compliance will be provided also with the provisions of the **"Regulations for the Control of Earth Pollution and Areas Polluted from Spot Sources"** enacted by publication in the Official Gazette Issue number 27605 dated June 8th, 2010.

In order to minimize the risk of any kind of materials contaminated by oils, fuel oil, etc. for the human health and environment, compliance will be provided with the provisions of the "**Waste Management Regulations**" number 29314 dated April 2nd, 2015 (as amended with number 30016 dated March 23th, 2017).

V.2.3. The created electrical and magnetic fields, the impact of their intensity, precautionary measure to take

The term electromagnetic field (EMF) is used to indicate that in a certain place there is electromagnetic energy. The electromagnetic fields has two components. These are the electrical fields and the magnetic field.

The intensity of the electrical field is measured by voltage per meter (V/m) whereas the measure unit for the magnetic field is Tesla. Another term, quite widely used, is Gaus (G).

The electrical and magnetic fields have different characteristics. Consequently, the impact of these fields on the living creatures in the area will be different. The impact of these fields on the human beings has not been understood very well until now. However, the studies reveal that the impact of the magnetic field is more than that of the electrical field. For example, the electrical fields cannot pass through walls, even when they pass the human skin they become weaker. On the other side, the magnetic fields pass through almost anything except some the specially manufactured materials.

1- Impact of low frequency (0 Hz – 10 kHz) magnetic radiation on human health

The impact of low frequency radiation areas upon human health is superficial like the movement of hair on human body. Limitations are set to reduce the expose in order to protect from the harmful impact of the electromagnetic radiation. These limitations are expressed in magnitudes such as the current concentration created in the body by radiation and the specific absorption rate that are meaningful from the biological viewpoint. Since these magnitudes cannot be measured directly, the external electrical and magnetic area power intensity is measured.

2- Impact of high frequency (10 kHz – 300GHz) magnetic radiation on human health

The human body is sensitive at high frequencies. The energy absorbed by the human body turns into heat. In the body exposed to high frequency, heat forms in the whole body or only in some part of it. Since heat forms inside the body, it is not perceived by skin that is the heat sensor. For this reason, the body heat control system is impacted. This impact depends on frequency. Standards that foresee the electromagnetic radiance is kept at a certain level, were developed in order to reduce to minimum this harmful impact. When electromagnetic radiation reaches living creature, it is absorbed by this living creature.

Specific Absorption Rate (SAR)

The Specific Absorption Rate (SAR) is the speed at which the radiation is absorbed by the tissues of the body.All the researches made until now have revealed that the human body is not able to adjust even a temperature increase of 1 degree and creates problems. For each 1 degree of temperature increase, the power needed to be absorbed by the body is 4W per kg. In the general living environments of the humans, the accepted SAR limit is one fiftieth of this value, 0,08 W/kg.

It is almost impossible to measure directly the Specific Absorption Rate. For this reason, there are easily measurable or observable parameters for determining the limit values.

The negative impacts of the electrical and magnetic fields upon the human health have not been proven until now. The magnetic field strength can appear at various levels in the electrical appliances used daily in homes. The magnetic field strength in the electrical appliances used daily in homes is given below in Chart 78.

Chart 78 Magnetic field strengths of certain electrical appliances (miligauss)

Distance from source	15 cm	33,3 cm	66,6 cm	133,2 cm
Hair Dryer				
Low	1	--	--	--
Medium	300	7	--	--
High	700	70	10	1
Dish Washing Machine				
Low	10	6	2	--
Medium	20	10	4	--
High	100	30	7	1
Microwave Oven				
Low	110	1	1	--
Medium	200	4	10	2
High	300	200	30	20
Wash machine				
Low	4	1	--	--
Medium	20	7	1	--
High	100	300	6	--
Vacuum Cleaner				
Low	100	20	4	--
Medium	300	60	10	1
High	700	200	50	10

Source: Electrical fields and magnetic Field, Volume I, TEIAŞ Presidency of Environmental Agency

As observed in the above chart, keeping at a distance of 15 cm from the hair dryer working at medium speed, creates and exposure of 300 miligauss. Standing at 15 cm from the dish washing machine working at medium speed, creates and exposure of 20 miligauss.

The electromagnetic field of the wind turbines is very and ends almost at the outer side of the turbine that is at 70 m- 80 m height. For this reason, the impact of wind power turbines is not at an important level. [24]

The wind power turbine or the generator equipment can affect the electromagnetic field and interfere with the Radio- TV receivers. The main cause of this impact are the rotor blades. When the rotor blades are rotating, they might interfere with the radio and TV receivers. The main cause of this impact are the rotor blades. While rotating, the blades would reflect back the waves of the radio and TV receivers, would make interference and at towers, would reflect the signals. [25]

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[24] ertuğrul kanmaz, mehmet karalı, yakup kılıçaslan, mehmet gücüyetmez. (Çanakkale onsekizmart university, çan professional high school), "study on the usability of the wind potential in the çan region", çan values symposium (28 – 29 August 2008), http://cids2008.comu.edu.tr/can.pdf

[25] Environmental Impact Assessment in the Wind Power Energy Generation System and Solutions Proposals

In our country, electricity is transmitted through two types of lines. The high voltage transmission line (in Turkey 380 kV and 154 kV) transmits the electrical energy from the generator center to the main transformer center in the consumption centers. The Distribution lines carry the electrical energy from the transformer center to lower voltage transmission centers and/ or our homes and work places. The interconnected system in our country is operated with alternative current of 50 Hz frequency.

The transmission and distribution lines and the transformer centers on these lines create electromagnetic fields around them. In our country there is no special standard regarding the electromagnetic fields created by the energy transmission lines. On the other side, the safe approach distance values were defined in the "Regulations for Electrical Power Current Facilities" enacted by their publication in the Official Gazette Issue number 16466 dated November 22nd, 1978, in order to secure the safe approach to the high voltage lines. The installation of the line is permitted on the condition that it is based on the vertical and horizontal distances defined in Clause 46 of these Regulations. The safe approach distances defined in the mentioned Regulations are vertical and horizontal distances defined only from the physical and material safety viewpoint.

Considering any kind of approach that might be risky and dangerous for human health and environment within the project scope, all the necessary measures and precautions related to "Entry in the Powerful Current Facilities" article 59, "Working in the Powerful Current Facilities" article 60 and "Providing Workers' Safety" article 61 mentioned in the "Provisions Concerning Operations Safety" that is in part 7 of the " Electrical Power Current Facilities Regulations" enacted by their publication in the Official Gazette Issue number 24246 dated November 30th, 2006, will be implemented. Grounding will be made. All and any kind of safety measures foreseen in " Electrical Power Current Facilities Regulations" will be planned for the facilities to be installed, taking into consideration the distances.

V.2.4. Measures to take against reflection of light

The rotor blades of the wind turbines reflecting the sunlight might cause shadow movements and shadow undulations. In the same way, the sun light falling on the glossy blades might make the light reflections called shadow flickers causing luminance.

The turbines that will be installed within the project scope will be painted as per international standards in light dull grey color. This color, that would reduce reflections to the minimum level, will jeopardize noticing the turbines from a far distance. The necessary illumination system will be installed in the Wind Power Energy Plant in order to make sure that the airplanes notice the turbines.

V.2.5. Probability of risks endangering the safety (the evaluation report of the birds' migration itineraries, etc. for the WPEP (Wind Power Energy Plants) Projects should be submitted attached to the Environmental Impact Assessment Report)

The Ecosystem Assessment Report was prepared within the project scope by Assistant Prof. Şafak Bulut – Ornithology, who is expert in his field. The information comprised in the Ecosystem Assessment Report under the topic ornithology is submitted below under the respective topics.

Evaluations regarding the project location selection and the Birds' Migration Itinerary

The International Council for Bird Preservation (Birdlife International 2005 – 2017) announces that it is very important to identify the negative impacts of the places selected for the wind farms on birds. It is mentioned that if the wind farms are located in suitable places, are designed and operated properly, they would not have any negative impact on the birds of national and international importance and on their habitats. For this reason, the International Council for Bird Preservation advises that the following should be avoided when selecting the wind farm locations:

a. Special Preservation areas (*source: European Union Directive for Birds' Protection*) and important avian areas (*source: Birdlife International, 2011*)
b. The Nature Preservation areas (such as Natura 2000) identified within the scope of national and international laws or that meet these criteria (*source: Birdlife International, 2005*)
c. The other important areas identified by the International Council for Bird Preservation for certain birds species in Europe that have "Inappropriate Preservation Status" (*source: Birdlife International, 2011*). d.
The areas on the main migration itineraries and especially those areas where birds concentrate (such as mountain passes).
e. The habitats where it is well known that the wind farms create high risk of collision for the birds. The wetlands and mountain passes are good examples of such regions.

In the areas belonging to this project and in the close surroundings there is no place which the International Council for Bird Preservation advises to avoid when selecting the wind farm locations (those mentioned above), of the Special Preservation Areas, of the Nature Preservation areas and the other important areas identified for certain bird species in Europe (Ministry of Forests and Water Affaires; Kirwan& Friends, 2008; Birdlife, 2017). The subject project area is not located in the zone to be avoided when selecting the wind farm location, as advised by the International Council for Bird Preservation.

Although there is no preservation status, those parts of the Wind Power Energy Plant that are qualified as valley (Muratdere valley portion) might be on the birds' migration itinerary. Some maps belonging to certain species followed via satellite device are given below (Figure 61 – Figure 62). For example, as seen in Figure 62, the individual migration itinerary of the Lesser Spotted Eagle called Jaan passed over the Wind Power Energy Plant area in year 2016.

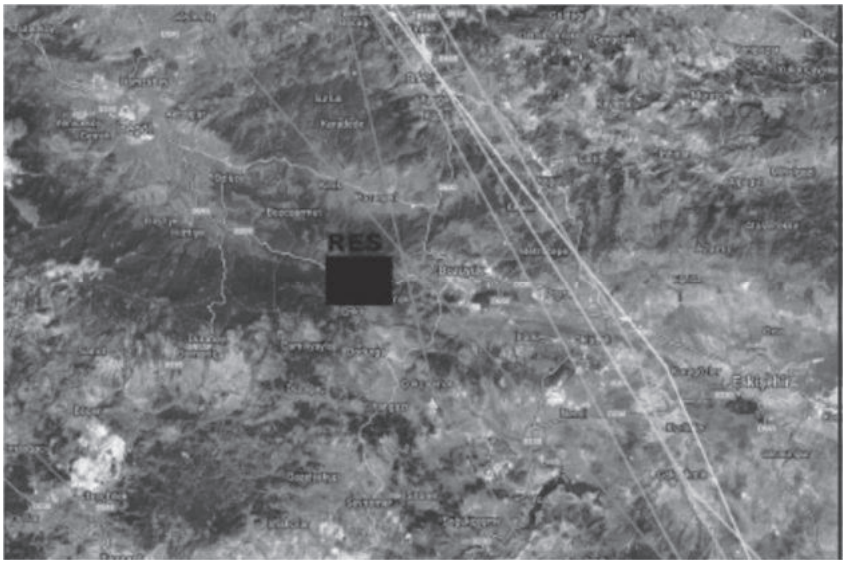


Figure 60 – 2015 migration itinerary map and the location of Bozüyük Wind Power Energy Plant

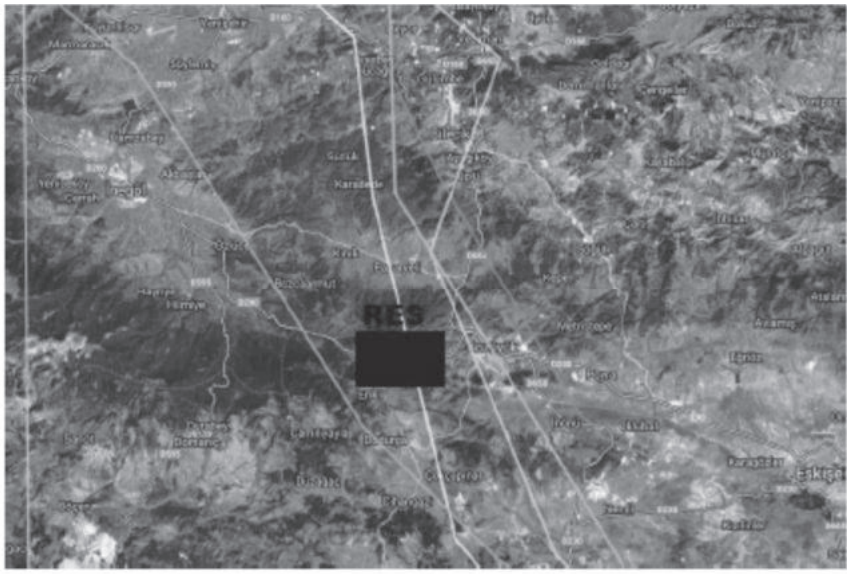


Figure 61 – 2016 migration itinerary map and the location of Bozüyük Wind Power Energy Plant (the migration flight across the project area of the Lesser Spotted Eagle called Jaan)

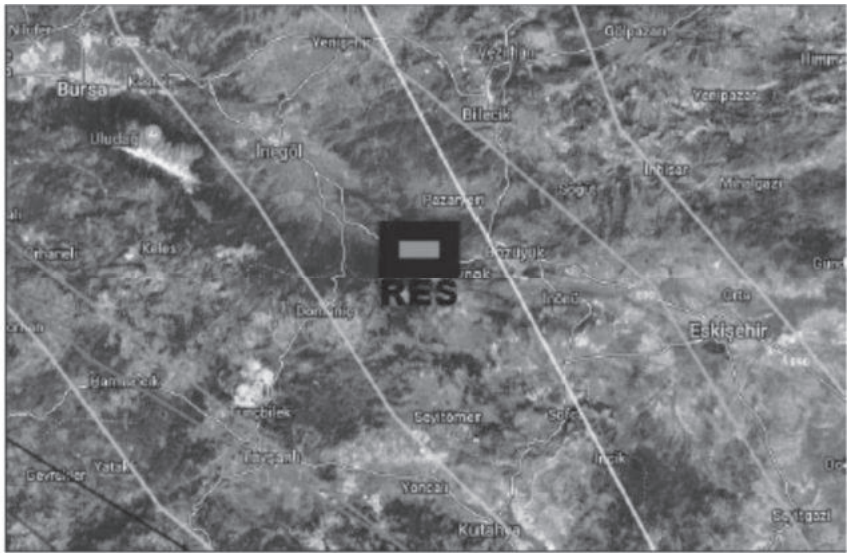


Figure 62– 2017 migration itinerary map and the location of Bozüyük Wind Power Energy Plant

Figure 63 – 2018 migration itinerary map and the location of Bozüyük Wind Power Energy Plant

Assessment of the Project Area on Cumulative Basis

The Handbook for Environmental Impact Assessment concerning the environmental assessment of projects, prepared and published by The Ministry of Environment and Urbanization in January 2009, explains that the cumulative impact of a project is estimated by integrating the impacts of a project with the impacts of other actual or prospective projects; each project causes individually some primary and secondary impacts; cumulative impact is the total of the impacts of two or more projects actualized in the same area or region.

The cumulative impact assessment should be the main element of the assessment of the wind power turbine plans. Unfortunately, this part of the risk assessment is insufficient in general (Masden et al., 2009). The potential cumulative impacts of the multiple wind power turbines are associated mostly with the level of disturbance/ dislocation of the local populations, the concomitant death rate and barrier impact created. Even in places where the expected impacts are assumed to be low, the cumulative impacts, especially in the areas with numerous small wind power plants or in the small areas with many wind power turbines, cannot be considered unimportant. For example, the rise of the low death rate of the reproductive mature individuals or the decrease of their reproduction rate might be important for some bird species populations, especially those long lived and in general with low annual fertility and long growth period, such as sea birds, long legged birds, hunting birds, birds of prey and ascending birds. This situation is valid especially for the rare bird species or for those that face a series pressures such as environmental changes and/ or anthropogenic impacts. Under such circumstances (national or international, for the rare and limited species local, regional or international), the impact might be important at population level. Primarily when the developments are planned on the migration itineraries, the migratory species might suffer important cumulative impacts. The Ecological Impact Assessment principles are very similar to the Environmental Impact Assessment definitions and, moreover, they are based on step by step scanning process, coverage and on the evaluation of the impact and consequences. First of all, the potential of other projects in the cumulative impact; secondly, the effect of the wind power plants and available species on the environmental sensitivity of the region and thirdly, the magnitude of the wind power plants impacts, their probability, duration, frequency and alternate effects should be investigated.

Around the impact area and in its vicinity there is no other wind power plant in addition to the Bozüyük Wind Power Energy Plant project proposal. Besides, the distance calculated between turbines was minimum 310 m.

Consequently, this area:

** Is on the birds' migration itinerary but the migration itinerary is out of the cumulative impact area. The turbines will be installed at 1200 m altitude on bare hills and the migration itinerary passes over the valley or in the South West and North East of the Wind Power Plant area.*

** The hills tops where the turbines will be installed are areas similar to each other as vegetation and habitat. As far as the singing birds (flying close to the ground) breeding in the area are concerned, there are quite large areas alternative to the temporary habitat destruction.*

** The distance between the turbines on the migration itinerary portion passing over the valley is rather big (almost 1400 m). For this reason, no barrier impact is expected on the migration itinerary. However, some restrictive measures will be presented in the conclusions part.*

**The Wind Power Energy Plant closest to the planned project area is at almost 15 km distance to the East, around the Metristepe Village in the Söğüt sub- province. Consequently, the installed wind power plant is quite far from the planned wind power plant.*

In conclusion, the cumulative assessment of the area reveals that there will be no impact on the local birds and those reproducing the area.

Finally, the planned project area is not an important bird zone but it is located on the probable migration itinerary. In case the above mentioned preventive measures will be implemented, the negative impacts on birds are expected to be at a low level or at an eliminable level. Within this scope, the Spring and Autumn migrations should be observed in the project area and its close surroundings. The spring observation should be 15 days in the months of March, April and May and the Autumn observation should be 15 days in the months of August, September and October.

V.2.6. The influences of the line and transformer upon the communication facilities (PTT lines, Radio and TV transmitters, etc.)

The Energy obtained from wind depends on the wind speed and its blowing duration. Wind is a decisive, reliable, uninterrupted source. Wind power plants might require large areas and they might disturb the radio and TV receivers. The electromagnetic interference can change depending on the rotor blade size and material; the noise electromagnetic interference rate of the turbines where metallic materials where used, can be high; however, this problem can be diminished by using polyester materials. Besides, as long as the radio and TV antennas are not close to the turbines the probability of impact is low. [26]

[26] ertuğrul KANMAZ, mehmet KARALI, yakup KILIÇASLAN, mehmet GÜCÜYETMEZ. (Çanakkale onsekizmart university, çan professional high school), "STUDY ON THE USABILITY OF THE WIND POTENTIAL IN THE ÇAN REGION", Çan Values Symposium (28 – 29 August 2008), http://cids2008.comu.edu.tr/Can.pdf

V.2.7. Possible impact upon the forest lands and the description of the precautionary measures

to take against these impacts, the precautionary measures to take against forest fires

According to the Environmental Impact Assessment Study and Evaluation Form (see Attachment 4.7), as the result of the study and evaluation done within the scope of the Regulations for the Environmental Impact Assessment and the Forest Law number 6831, it has been concluded that the Operation of the Wind Power Energy Plant will not have any negative impact upon the forests and forestry works, provided that, the implementation of the project within the project scope in the areas coinciding with the area burnt in the 2017 fire and during the permit period, will be made in continuous communication with the forestry department, in such a way that would not harm the rejuvenation works and would consider the sensitivity in this areas.

The project area is the 1st Level sensible area from the forest fires view point. During the construction and operation periods of the project area, the measures defined the forest administration will be implemented and all works will be executed in collaboration.

In the activity area, there will be available a sufficient number of extinguisher equipment's (pickaxes, shovels, choppers, water buckets, etc.) and the provisions of the Work Health and Safety Law enacted by its publication in the Official Gazette Issue number 28339 dated June 30th, 2012, will be complied with. Pursuant to the mentioned Law, the work areas will undergo a risk assessment, the hazard level will be calculated and the necessary measured will be identified accordingly. The personnel working in the facilities will be trained regarding the probable consequences and the duties to assume in case of fire. In case of fire probability, the other close institutions will be warned. After observing the fire and giving the alarm signals, the first interventions will be made to extinguish it using the equipment's available at certain points and the following will be executed:

- In the moment the fire is noticed, first the people around, then the personnel and afterwards the authorities will be informed about it.
- The closest security teams and fire brigades will be contacted.
- The concerned part will secure the environmental safety with the help of the emergency team.
- The fire extinguishing team will intervene immediately to put off the fire.
- In case of fires caused by electricity, all the flammable materials close to the fire area will be isolated.
- The first thing to do in case of fire will be "life saving". Under such circumstances, people's threat on their own and on others' lives will be prevented.
- They will try to put off the fire using the closest extinguishing equipment.
- The nose and mouth are protected with wet pieces of cloth in order to prevent the stifling effect of smoke.
- The fire extinguishing work will not cause unnecessary destruction, tear down and demolishing.
- A sufficient number of personnel and foam fie extinguishers will be available ready for use any moment.
- The emergency teams appointed for extinguishing the fire will keep in touch permanently with the local fir extinguishing teams.
- The Ambulance will go to every fire area.
- The following fire fighting systems will be available and then used in the project area against a probable fire threat.
- Liquid gas tubes (extinguishing gases used by spraying)
- Smoke detectors will be used (promptly sending automatic signals to the panel upon detecting the smoke).

- Flame detectors will be used (promptly sending automatic signals to the panel upon detecting the flame).

Dust formation: Another impact of the activities on the forests is the formation of dust. The formation of dust will close the plant stomas and consequently, will hinder the proper performance of vital functions such as respiration and photosynthesis. Finally, this situation leads to fading of the plant leaves and, as time passes, to plant death. However, the formation of dust during the construction phase of the project will be prevented by watering the area using the spraying method. Furthermore, the concerned regulations within the project scope will be complied with.

V.2.8. The noise sources to be created during the operation of the project and the precautionary measures to take .

The calculations of the noise expected from the 48 turbines during the operation period are given in Chart 78.

Chart 79– Number of Turbines and the Sound Power Levels

Name of Equipment	Number of Equipments	Equipment Sound Power Level (dBA)
Turbine	48	107

The distribution of sound level of each noise source in the 4-octave band between 500 – 4000 Hz, the sound power level in each octave band is calculated and given in chart 80.

Lw(i) = 10*log(Lw/10)/4)
Lw = Sound power level of the source (dB)

Chart 80. The distribution of the sound power level of each source in the project area in the 4- octave band

Noise sources	**Total**	**Sound power level (dB)**			
		500 Hz	**1000 Hz**	**2000 Hz**	**4000 Hz**
Turbine	107	101	101	101	101

It is assumed that the total sound power is distributed equally in the 4-octave band.
Lp = Lw + 10*log Q / 4*π*r2
Lpi = The noise emission levels (dB) of the sources in the area at **r** distance
Lw = Sound power level of the source (dB)
Q = orientation coefficient (assumed = 1)
r = distance from source (meter)

Chart 81. Sound Pressure Levels of the Noise Sources in the Project area

Noise sources	**Distance (m)**	**Sound power level (dB)**			
		500 Hz	**1000 Hz**	**2000 Hz**	**4000 Hz**
Turbines	10	76,01	76,01	76,01	76,01
	50	62,03	62,03	62,03	62,03
	100	56,01	56,01	56,01	56,01
	250	48,05	48,05	48,05	48,05
	500	42,03	42,03	42,03	42,03
	1000	36,01	36,01	36,01	36,01
	1500	32,49	32,49	32,49	32,49

Aatm = (atmospheric absorption) = 7.4* 10-8 (f2 *r / ϕ) dB
f = frequency of the noise source (or the central frequency of the subject frequency band) (Hz) (assumed 2500)

r = distance from the noise source (m)
ϕ = relative humidity (%) (assumed 70,8%)

Chart 82. Atmospheric absorption values calculated according to distance

Frequency (Hz)	Distance (m)	Atmospheric absorption
500	10	0,003
500	50	0,014
500	100	0,028
500	250	0,069
500	500	0,138
500	1000	0,275
500	1500	0,413
1000	10	0,013
1000	50	0,064
1000	100	0,128
1000	250	0,319
1000	500	0,638
1000	1000	1,276
1000	1500	1,914
2000	10	0,051
2000	50	0,255
2000	100	0,510
2000	250	1,276
2000	500	2,552
2000	1000	5,103
2000	1500	7,655
4000	10	0,204
4000	50	1,021
4000	100	2,041
4000	250	5,103
4000	500	10,207
4000	1000	20,414
4000	1500	30,621

The sound pressure level of each noise source in the 4- octave band, after deducting the atmospheric absorption values, calculated according to the formula below is in Chart 83.

At the first 100 meters $L_p \cong L_{Port}$

After 100 meters $L_p = L_{Port} - A_{At\ m}$

Chart 83. The sound pressure level of each noise source in the activity area related to distance

Noise sources	Distance (m)	Sound power level (dB)			
		500 Hz	1000 Hz	2000 Hz	4000 Hz
Turbine	10	76,01	76,00	75,96	75,81
	50	62,02	61,97	61,78	61,01
	100	55,98	55,88	55,50	53,97
	250	47,98	47,73	46,78	42,95
	500	41,89	41,39	39,48	31,82
	1000	35,73	34,73	30,91	15,60
	1500	32,08	30,57	24,83	1,87

The adjustment factors in Chart 84 were used in the calculation of the net sound pressure levels of the noise sources in the activity area.

Chart 84. Adjustment factors according to frequencies

Central frequency (Hz)	Adjustment factor
500	- 3,2
1000	0
2000	1,2
4000	1

The total sound level in the 4- octave band of each noise source calculated according to the results of the calculations based on the adjustment factors in the above chart are given in Chart 85.

Chart 85. Total sound levels of each noise source in the activity area according to distance

Noise sources	Distance (m)	Sound power level (dB)				Total sound level (dBA)
		500 Hz	1000 Hz	2000 Hz	4000 Hz	
Excavator	10	72,81	76,00	77,16	76,81	82,008
	50	58,82	61,97	62,98	62,01	67,714
	100	52,78	55,88	56,70	54,97	61,332
	250	44,78	47,73	47,98	43,95	52,479
	500	38,69	41,39	40,68	32,82	45,415
	1000	32,53	34,73	32,11	16,60	38,087
	1500	28,88	30,57	26,03	2,87	33,648

L_T = Total sound level (dBA)

$L_T = 10 \log \Sigma\ 10\ L^{i/10}$

Assuming that, in the worst case, all the machines will function at the same time, the equivalent noise levels calculated are in Chart 72.

$L_{daytime} = L_{eq}$

$L_{eq} = 10 \log \Sigma\ 10^{\ LT/10}$

Chart 86. Level of the noise resulting from the construction activities calculated according to distance

Distance (m)	L daytime (dBA)
10	85,02
50	70,72
100	64,34
250	55,49
500	48,42
1000	41,10
1500	36,66

The closest residence is in the west of Turbine T_{35}, at 340 m distance within the borders of Delielmacık Village.

The facility is located within the coverage of the *"the areas with concentration of residences among the commercial buildings and noise sensible utilizations areas "*that are shown in Chart 4 where the environmental noise value limits are given as defined in Attachment VII of the "Regulations for the Assessment and Management of the Environmental Noise" (ÇGDYY) enacted by their publication in the Official Gazette Issue number 27601, dated June 4th, 2010.

Chart 87. Regulations for the Assessment and Management of the Environmental Noise
Chart 4 Environmental Noise Limit Values for the Industrial Facilities

Areas	$L_{daytime}$ (dBA)	$L_{evening}$ (dBA)	L_{night} (dBA)
The areas where the education, cultural and health areas and the summer residences and camps are concentrated among the noise sensible utilizations areas.	60	55	50
The areas where residences are concentrated among the noise sensible utilization areas and commercial areas.	65	60	55
The areas where commercial buildings are concentrated among the noise sensible utilization areas and commercial areas.	68	63	58
Industrial areas	70	65	60

According to the plans, there will be 48 turbines installed and operated within the scope of the Bozüyük Wind Power Energy Plant. There will be a systematic mechanical noise coming from systems such as fans, transmission boxes of the turbines during their functioning. Besides, aerodynamic noise will be created by the wind – rotor blade interaction.

The mechanical noise of the turbines will be decreased by many technical measures such as acoustic sheathing, special gear wheals, coating the rotating parts with sound absorbing materials. Besides, the blade tips will be equipped with wind catchers.

According to Article 5 of the **"Regulations for the Protection of the Workers from the Risks Related to Noise"** prepared by the Ministry of Labor and Social Security, enacted by their publication in the Official Gazette Issue number 28721 dated July 28th, 2013, 85 dBA was accepted as the highest exposure level. According to this, when the noise will exceed the lowest level of exposure, the measures defined in the **"Regulations for the Protection of the Workers from the Risks Related to Noise"** will be implemented in order to eliminate the negative impact that the noise might upon the personnel's health. Besides, personnel's continuous exposure to this noise will be prevented. Along with this, the periodical maintenance of the work machines will be done continuously and regarding the noise matter, compliance will be provided with the provisions of the Environmental Noise Assessment and Management Regulations and of the **"Work Health and Safety Law"** number 6331, dated June 20th, 2012.

V.2.9. Reation of landscape elements in the project area and the land arrangements to make for the other purposes

Within the project scope, a **Landscape Restoration Plan** was prepared by Landscape Architect Cem ATIK (**see Attachment 5.2**). The information contained in the Landscape Restoration Plan is submitted uynder the headings below.

Bozüyük Wind Power Energy Plant the Environmental Impact of the Landscape Restoration Plan and Protection Measures

It is well known that the wind power energy plants have a negative impact upon their installation area and its close surroundings. These impacts limited and decreased by the concerned laws and regulations could be gathered in two groups as during the construction period and during the operation period.

Impacts during the construction period:
- Temporary terrain occupation,
- Temporary increase in the air polluter emissions,
- Temporary discharges in water and physical impacts upon water beds,
- Temporary noise emissions,
- Transformations and degeneration of the soil structure,
- Transformations and degeneration of habitats, flora and fauna,
- Disturbance caused to those living in the areas around the power plant,
- Visual changes of the landscape,
- Transformations and degeneration of the present characteristics of the infrastructure, archeological and cultural heritage sources,
- Transformations and degeneration of the land and the correlated impacts on the land utilization and land users.

Impacts during the Operation Period:
- Limitation of the agricultural activities and development activities,
- Ecological changes,
- Landscape changes,
- Noise,
- Shadow flicker.

Chart 88. Bozüyük Project Environmental Impacts of the Landscape Restoration Plan and the Protective Measures

ENVIRONMENT COMPONENTS	IMPACTS	PROTECTIVE MEASURES
SOIL	- Soil erosion - Loss of soil fertility - Changes in drainage -Soil pollution	- Soil studies prior to construction in order to determine the depth of the surface layer in the excavation areas, - Peeling off the vegetation soil of thickness determined according to the study results, and its storage - Utilization of special equipments in order to prevent mixture with the underneath earth in the places where the vegetative soil thickness is reduced, - The storage of the surface soil should be made as much as possible in the South- Western direction looking areas in order to be less affected by the sun rays, - The soil should not be stored high and on slope in order to prevent any stabilization problem of the upper and lower soil layers, - Peeling off the lower soil level and storing it separately, -Using movable mats for the heavy equipment working on week soils where the water level is high, - Taking the necessary measures to prevent the disposal of chemicals on the ground, - Provide the drainage control, - Restoring the ground to its initial status after the construction is finished, - Permanent erosion control measures related to the erosion risk, - Making bio restoration
SURFACE WATERS	-Degeneration of the river banks and river bed morphology due to physical works -Impacts on the estuary ecology and the human utilization - Water pollution - Sedimentation and blur	- Avoiding implementations such as construction and storage, vehicle fuel points, etc. at 50 m distance from the water source, - Taking the required measures for preventing the degeneration of the stream beds, - Sediment filters
ECOLOGY	-Destruction/ loss of habitats - Losses in the population of the endangered species - Turbine collision risk especially for birds and bats, -The impact of the ground cover changes on the carrying capacity of the area and upon the behavior of species.	- Making the ecological studies before construction, - Running the construction works according to the seasonal sensible times of the species based on the study results, - Implementation of the suitable measures regarding the plant and animal species identified in the project area after the studies, - Training of the workers during the construction period, - Correct planning of the turbine locations

LANDSCAPE AND VISUALITY	- Long period/ permanent visual impact - Short term visual impact for the peasants during the construction period -Change of the rural landscape view	- Keeping the construction area as tight as possible, - Utilization of the available roads, - Prevent any harm outside the construction area, - Taking the preventive measures necessary to decrease the heavy machine impact, - Application of land management, - Protection of earth, - Restoration of the areas that will not be in use after construction, - Erosion control whenever necessary, - Bio restoration, - Making a curtain with the plants regionally suitable for the permanent buildings

NOISE	- The negative impact of the noise emitted during construction on the settlements and habitats - The sound of the rotor blades during the operation period	- Utilization of noiseless or low noise construction machinery and equipment, - Regular maintenance of the machinery in order to prevent noisy functioning , - Adjustment of working hours, - Selection of the suitable rotor blades
DUST	- The negative impact of the dust emission during the construction period on the settlements and habitats	- Sprinkling the roads with water, - No explosives to use
SHADOW FLICKER	- The shadow flicker impact of the turbines on settlements and habitats, - The risk created by the shadow flickers for the drivers	- Placement of the turbines far from settlements and roads
RECREATION	- Harm/ loss of the recreation source values - Prevention of activities	Restoration works to initiate and complete within a short time

Bozüyük Wind Power Energy Plant the Landscape Restoration Plan Intervention Methods

At this stage, the potential erosion, permeability and habitat maps obtained for providing sustainability from the point of view of the land protection function of the landscape, were superposed and interpreted together. In this way, the functional areas to protect for the natural life and human life, in other words the sensitive areas from the landscape function viewpoint, were determined. The sensitive areas from the landscape function viewpoint, are the areas that could be harmed by human intervention. According to this, in the project area there are 1st, 2nd and 3rd level sensitive areas; the 1st level sensitive areas are in the North, North East and interior parts of the project area; the 2nd level sensitive areas are in the North, North East, East; South, South West and interior parts of the project area; the 3rd level sensitive areas are in the North, North East and interior parts of the project area.

The interventions to make in the area were grouped in 5 as Areas requiring tree planting for erosion control purposes and structural measures, Landscape restoration areas supporting the landscape characteristic, Areas of which the quality will be protected, Area to make view curtain planting and Area of soil management. The interventions to make to theses areas are explained below at vegetation and structure level.

Soil management (rehabilitation): in all landscapes to intervene, the upper soil layer will be peeled off, stored and maintained in order to be used in the landscape works to run after the project.

According to this, the areas within the project zone that require construction works are the turbines and the switchyard located in the project area and the new roads to be made. In this respect, during the excavation the vegetal soil peeled off from the surface will be accumulated in the soil storage area in order to be used as surface cover in the landscape works.

Areas to protect qualitatively: the areas of which the quality will be protected as result of the habitat analysis, are the areas with Tree Vegetation Cover in South, South West, South East, West, East, North, North West, North East and interior parts of the project area. In the mentioned areas the wildlife and vegetation layer should be definitely protected in order to guarantee the species continuity. Within this scope, the wildlife in the mentioned areas must be protected, the human intervention reduced to minimum and the vegetation layer (trees, bushes, grass) should not be destroyed.

Areas requiring tree planting for erosion control purposes and structural measures: The erosion function analysis identified the portions with high risk of erosion. In the activity area there are no areas where construction works will not run and no areas that will not be affected by the project activities. In view of the function analysis results, these areas might have high or very high erosion risk. However, the opinion is that any intervention for erosion purposes might stimulate the erosion. For this reason, according to the results of the function analysis, there will be construction activities in the work zone and structural and vegetation interventions were proposed in order to control the erosion in the areas impacted by these works, but intervention was not deemed suitable for the other parts of the zone.

However, the company has the obligation to take any vegetative and structural measures even in the areas without intervention in case a possible risk and thread is identified. The vegetative restoration and structural measures should be implemented together. Wherever necessary, water suppressors, divisional and discharge canals, pocket terraces, silt basins should be built. It is absolutely necessary to build control dikes in the stream beds. The areas with erosion risk are the turbine 5,6,7 and 8 areas in the South West of the project area and the turbine 18, 19, 20, 21, 22, 23 and 24 areas in the central part of the project area, as well as the areas around with a slope of up to 40%. In the areas with erosion risk and those with a slope of 40%, terraces have to be built.

Curtain planting: The available forest area will be relatively curtaining the permanent buildings in the Bozüyük Wind Power Energy Plant area but, since the mentioned buildings will be visible from the present roads in the areas around the project areas, curtain planting must be made around the switchyard located in the Southern part of the project zone.

Landscape restoration areas supporting the landscape characteristic: the subject areas are the areas that must be protected (forest areas) within the project area where the turbines 10, 16, 17, 0, 31, 35, 38 and 39 will be installed. In the mentioned areas there were identified some areas of high habitat value as the result of the habitat analysis. Since the vegetation cover and the structure of these areas will be spoiled during the turbine construction work, as soon as the construction works area finished in this area, the restoration works will get start and at the same time, in the areas with high erosion risk planting will be made selecting the plants suitable to the present vegetation cover and plants supporting the characteristics in the project area.

Types of Biological and Technical Restoration

The most important thing at the start of the planting work is the selection of the right species. The most important criterion in plant selection is the reformation of the natural vegetation cover of the area.

In case where the vegetation is the steep slope areas disappears due to some destruction reason, its reappearance needs a long time. The most effective way for bringing again vegetation to the area and for stopping the surface flow is to build terraces. At the points where the slope of the area is low and the surface soil layer is sufficient, erosion will be prevented by the restoration of vegetation. However, in the parts where the slope is high and the surface soil layer is thin, the success of insemination and seedling planting for the revival of vegetation depends completely on the terrace building works. The most important function of the terraces is to hold the water and reduce the carrying power of the water flowing down.

The terrace building, while allowing the safe surface water flow, it is providing the infiltration of water in the soil.

Starting the implementation of the vegetation measures as soon as the construction is finished is very important from the sustainability viewpoint of these areas. The most important thing at the start of the planting work is the selection of the right species. The most important criterion in plant selection is the reformation of the natural vegetation cover of the area. Besides, these fences should be supported by alive fences made of willow branches. Planting will be more intensive in the areas with high erosion risk and these areas will prioritized regarding the start of restoration works.

The species selected for insemination and seedlings planting will be absolutely the species naturally widely spread in the area and the plantation of exotic or invader species should be definitely avoided. During the bio restoration works, the live cover available in the area will be preserved without being affected by the construction activities.

There might be need for tillage work related to the renewal of the vegetation in the spoiled areas. The soil tillage in the places suitable for machine work will be on full area and in strip forms, in the areas unsuitable for machine work it will be made by workers and in continuous terrace, cut terrace or mound forms. The main benefits of soil tillage are: a) The soil gets a crumble structure that increases the water preserving capacity and the aeration, b) The soil become loose in the root developing area facilitating the development of the roots, c) It increases the microorganisms activity, d) It prevents the water loss due to evaporation by overcoming the capillarity, e) It facilitates the seedling roots to get the water and nutrients from the soil.

The tillage will be made when it is sufficiently humid, this is when the soil is tempered. Since the soil is dry and hard in the Summer and in the Winter season it is muddy and even frozen, it is not possible to do a tillage suitable to the techniques.

The tillage has to be applied to the completely depreciated areas outside the present vegetation cover. The tillage will be made parallel to the leveling curves, on a line indicated on the terrain, at 35 -40 cm depth and 60 – 80 cm width, at distances determined according to species to be planted. The surface inclination of the terrace will be 10 – 30%. The building of the terrace will start at the top and will continue towards the lower quota.

Taking into consideration the improvement of the available growth medium in these areas, in the places with small soil depth , the stored excavation soil with vegetation characteristic will be spread around. The parts with sufficient soil depth will be tilled by machines or manually and will be ready for insemination or planting. In case in the area there are plants giving sufficient seeds, natural insemination will be maximum benefitted during the seeds maturity period. The insemination areas will undergo surface soil treatments during the appropriate periods providing the suitable germination medium. On the tilled terraces or mounds and in the strips the big seeds will be inseminated with a sowing hoe or in rows, whereas the small seeds will be inseminated by the spreading method.

On the areas where the soil tilling is not possible or is not needed due to the available suitable medium conditions, insemination will be by the spreading method. The insemination time will be concomitant with the natural insemination time. During insemination, utmost attention will be paid to provide a homogenous distribution of seeds. The seeds will undergo spraying against pests.

Among the plants damaged during construction, the broad leaved and coniferous that have the sprouting characteristic will be cut at root collar level any time, except the vegetating time, and let sprout in order to rejuvenate. This implementation is called revival cut. The revival cut will be applied also to the degenerated bushed plants that had lost their growth energy.

The bush species that are not possible to grow by the insemination and germination on spot method will be identified. The maturation and falling of the seeds of this kind of plants will be followed up and the seeds collected. The collected seeds will be germinated in the places with suitable germination infrastructure and this production will be developed until the time appropriate for planting and later on will be planted on the terrains.

The plantation works in the project area will start up at the end of the vegetation period in the autumn and winter months and will be completed until the spring months when the vegetation starts again.

The factors to consider when planting the seedlings and saplings are below:

* The soil planting depth of 30 – 40 cm should humid and tempered.
* Planting will be on rainy, cold an frosty days.
* The planting pit will be 5 cm deeper than the sapling root length.
* The saplings should be planted at root collar level, some humid surface soil rich in organic substances should put at the in the pit bottom but hard materials such as stones, roots, manure must be avoided.
* After planting, the soil around the sapling will be pressed with the feet in order to stabilize the soil. In the areas with heavy soil, the over pressing should be avoided.
* Planting will start up at the top and continue down the slope.
* In case of removed saplings, the time between the removal and planting of the sapling should be very short. For this reason, the sapling planting should be planned according to the weather conditions and the worker potential available so that the saplings planted could be as fresh as possible.
* The sapling bales should be kept in a cool and sheltered, aerated place without touching each other, should be turned upside down every two days and should be sprinkled with water.

It should be kept in mind that these works can be successful only with the participation and support of the staff and local people. For this reason there will be some necessary acknowledgement activities organized in the project areas. Mainly along the newly built roads and the improved old roads and in the project area also, there will be warning and informative signs about the priority species, the preservation and bio restoration targets.

All the personnel involved in the construction work will be informed about the living creatures in the project area and around it, the landscape value of the area and the ecological sensitivity and the personnel's poaching and illegal hunting will be prevented.

Implementation

As shown in the activity area Planting Master Plan, the areas to get affect ted by the activity were grouped from the restoration target viewpoint as 1st level sensitive, 2nd level sensitive and 3rd level sensitive areas. In the 1st and 2nd level sensitive areas that require priority for restoration, the improvement of the lower and upper level soil vegetation and the control of erosion were advised. In the 3rd level sensitive area the preservation of the present vegetation layer and of the landscape characteristics was deemed sufficient. According to this, the implementations to be executed in the 1st and 2nd level sensitive areas are explained below.

Improvement of the lower and upper vegetation layers

The purpose of this implementation is to prevent the progress of the erosion and to improve at best (biological intervention) the vegetation layer in the prospective erosion areas. Implementations such as gully fortification by terraces, gully fortification by bushes, tree planting, grass planting, fencing, etc. will be successful in the 1st level and 2nd level sensitive areas regarding the improvement of the upper and lower vegetation layers.

Erosion Control

This restoration strategy will be put in application in the areas foreseen for erosion control in the restoration plan. Since in this implementation the flowing water and its valley with its surroundings are important the permanent erosion method will be applied. The areas with erosion risk are the turbine 5,6,7 and 8 areas in the South West of the project area and the turbine 18, 19, 20, 21, 22, 23 and 24 areas in the central part of the project area, as well as the areas around with a slope of up to 40%. In the areas with erosion risk and those with a slope of 40%, terraces have to be built.

Set Teraces

Set terraces, soil terraces, stone terraces, level terraces (with flow, without flow), irrigation terraces and ditch terraces are classified as pocket terraces. This type of terraces can be made when the land slope is up to 40%. The precipitation water can be eliminated safely from the area through sufficiently vegetated water ways or pipe exits.

The set terraces are made parallel to the equivalent elevated curves, measuring them one by one. The terrace width is in general 4 m, the sets built are usually between 1,5 – 2 m. The slopes are 100 – 150 m long, 40 – 60 cm high, located on untouched natural ground and with an inclination of 10 m-20 degrees.

Areas to protect qualitatively: the areas of which the quality will be protected as result of the habitat analysis, are the areas with Tree Vegetation Cover in South, South West, South East, West, East, North, North West, North East and interior parts of the project area. In the mentioned areas the wildlife and vegetation layer should be definitely protected in order to guarantee the species continuity. Within this scope, the wildlife in the mentioned areas must be protected, the human intervention reduced to minimum and the vegetation layer (trees, bushes, grass) should not be destroyed.

Soil peel of and storage

The upper soil layer is the material layer on the surface of the area. This layer contains most of the organic materials and for this reason provides the most part of the vegetation development. Critically, it shelters the seed bank, in other words it contains the seed stock ready to germinate when the conditions are favorable. Consequently, the management of the upper soil layer is a phase of basic importance for the replanting program. The management of the upper soil layer quality, especially of the integrity of its structure and of the seed bank, carries a vital importance both from the biological restoration and erosion control viewpoints.

Soil studies have to be made prior to construction in order to determine the depth of the surface layer in the project area and the thickness of soil peeling off will be according to the study results.

According to this, the areas in the project zone requiring construction are the main pipeline and the vegetation soil layer that will be removed from the surface within the excavations will be stored in the vegetation soil storage area in order to be used later as surface cover in the landscape works. The implementation within the scope of the proper management of upper soil layer should be done by soil experts and the technical information about this implementation is below.

The soil on rocky slopes with little soil will be handles as below:

i. The upper soil will be removed by hand or by excavators with small scoops.
ii. The rocks will be collected in a separate place.
iii. The rocks will be put back in their places.
iv. The upper soil will be mixed with the seeds and spread among the rocks.
v. If compatible with the erosion strategy, it will be covered with erosion mattress.

Whenever the soil on the rocky slopes is insufficient:

i. Upper soil will be provided from similar habitats.
ii. Organic materials such as stray/ plant material and manure from local sources will be added.
iii. Should be inseminated from the natural plants growing in the surroundings or its own return should be supported.

During storage attention should be paid that the soil with mineral content does not remain anaerobic. As long as the upper soil is not anaerobic, it can stay for a relatively long time in a pile. Being anaerobic will harm the seed bank. A soil can be test if it is anaerobic or not in the following way (not in Winter):

i. The humidity and concentration changes will be checked regularly using successively the Theta Probe and penetrometer.

ii. In case there a change of more than 15% and when the soil is shoveled a bad rotten smell is felt, the pile must be overturned. This is not valid for organic soils.

When the situation requires, local seeds will be used.

- Upper soil handling will be avoided when the soil is very humid or when the base of the upper soil is frozen.

- If there are stones of different dimensions in the collected soil, these stones also will be preserved. The areas recovered in this way might be similar to the land around. In case the area is a slope, the big rocks will not be buried in the ground in order to prevent their rolling down.

- When the upper soil will be settled, the structure should be a bit coarse, loose in order to facilitate the growth of the plants. After the lower layer soil is put in its place and loosened, the upper layer soil will be taken from the pile with excavators and sc oops and will be spread on top.

- When the upper layer soil is spread, the circulation of vehicles on the ground restored to its old state should be prevented. For this purpose, the upper soil should be spread in stripes or sections and this job should start at the farthest point from the pile. In this way, the upper layer soil will be ready for plant growth.

- In order to minimize the the sun rays impact on the stored soil in the project area, the South West looking areas will be preferred as much as possible and the soil will not be stored in very steep slope and high areas in order to prevent the stabilization problem.

Curtain Planting

Although there is no touristic itinerary in the project area and around it, curtain planting should be made around the switchyard area located in the Southern part of the project area. However, the plants chosen for curtain planting should be primarily the local plants available in the natural landscape around the work area.

In order to minimize the visual and physical impacts on the communication roads, planting will be made along the roads in a scattered way, suitable to the natural structure.

In planting, the size that the plant will reach under natural conditions must be considered. The plants used for landscape restoration/ improvement and erosion control must be at least 1-3 years old plants in tubes. The size of the plants to use for planting around the permanent buildings will be determined by the landscape development plan.

The topography that suffered intervention will be restored as much as possible to its old state. The surface flows of the topography newly set during land shaping will be connected to the natural drainage system.

V.2.10. Other Activities

There is no issue to evaluate under this heading.

V.3 Environmental Cost – Benefit Analysis

Energy is one of the most important inputs of the economy, a commodity that stages the world politics and, due to its climatic changes impact, the main determinant of the future economic, social and geographic array of the world. For this reason in our days, the energy and energy productivity policies climbed up to a higher level of importance for the countries with high cost of energy supply and living and, consequently, where the sustainability of economic development is under threat, for the countries which are highly dependant on foreign sources regarding the energy supply and will be affected by the consequences of the impact of climatic changes. Within this framework, supplying for safe consumption and efficient utilization the energy that is an indispensible input of the economic and community life for the actualization of an integral development concept in the domestic and foreign politics, economic, social, cultural and technology fields, is the basic axis of the long term productive energy policies of the Republic of Turkey. As a country dependant on foreign sources regarding energy, in Turkey the ratio of the energy component in the national income is 4% in deficit every year. Due to the price increase of petroleum and natural gas during the last years, in year 2011 ratio of the energy component in the national income exceeded the 6% level and its own share in the deficit was more than 8%. The only way of overcoming these negative conditions is to establish the infrastructure for the production based on local and renewable energy sources using as much as possible the local technologies and to increase the energy productivity. In this respect, the maximum utilization of our local and renewable energy sources should be encouraged; the production activities should be directed according to the transportation criterion and other criteria such as productivity and source utilizaşon should be taken into consideration during this process. [27]

Compared with the conventional electricity generation methods, the most important environmental benefit of wind energy is that it does not create any air polluters and greenhouse gas emissions. It is suitable to install wind power energy plants in far away places not reachable by energy transmission lines. The wind power plant does not have any raw material transportation costs.

The wind available in nature can be utilized directly. The wind power turbines are not complicated machines. They can be operated in a very simple way without need for an operator. They are designed for completely automatic operation. Besides, they can operate for many years just by proper periodical maintenance.

The wind turbines do not explode, do not emit radiations. Besides, they do not cause any radioactive emission destruction. Consequently, they are not hazardous. Except the installation phase, no deadly incident was been reported until now concerning any wind power plant. Any smallest accident can be prevented by the application of the measures in the maintenance periods.

Since there are no problems such as the increasing petroleum prices or the suddenly occurring other costs, there is no burden of additional taxes for the citizens. It does not create any thermal emissions for the atmosphere and rivers and sea. In addition to this, other residues are out of question. Wind is a local energy source. The production of turbine groups utilizing local resources has provided employment opportunities for thousands of people all around the world.

[27] Energy Safety and Productivity Special Expert Commission Report, 2023

The wind power turbines are modular and can be produced at any dimensions. If desired, they can be removed in parts and transported somewhere else. Moreover, they can be used individually or in groups. The removal of the expired wind power turbines does not have any removal costs because this cost is compensated

by the scrap value of the turbine. After expiry of the turbines usage life, the place where they were installed can easily recover its previous state. These plants that are installed mainly in the rural area, provide a serious income for the local people in the area due to the purchasing or rental prices paid to them for the land. Furthermore, the construction activities provide employment opportunities for the people in that region.

In general, the wind power turbines are installed on bear and high peaks and hilltops, where there is plenty of wind. These peaks are areas that can be used only for small economic activities, stock breeding or agricultural activities. The distance of each turbine form the others is between 50 – 150 meters, depending on the rotor blade diameter and wind regime. There is no objection the use of land between turbines for other activities. In fact, abroad these areas are quite widely used for agricultural and stock breeding activities. Besides, all over the world the installation on the sea of the so- called offshore type of turbines is expanding quite a lot.

Under these circumstances, loss of area is just out of question. The wind power plants reached a competitive level considering the thermal, hydraulic, etc. power plants from the economic point of view. There electrical energy generated in the power plant per year is 323.000.000 kwh. The plan is to transfer 154 Kv of the generated electrical energy to the Seyitömer – Bozüyük TM EIH entry- exit link sub- station.

The main purpose of the subject project is to use efficiently the natural resources of our country and reveal the development potential of the region, to reduce even a little the energy foreign dependency of Turkey by generating energy from wind, our own natural resource.

Once the project is actualized, the employment of unskilled workers (if available, of skilled workers) from the regional people will bring dynamism to the regional economy. As result, there will be employment opportunities for the local people, the commercial life in the neighbor provinces will be livelier and the increasing shopping volume will lead to an increase in income. In addition to this, the acquisition of construction equipment and materials and of the other food and daily consumption goods from the local sources will add vitality both to the provincial and regional market.

PART VI: THE LASTING IMPACT AND THE IMPACTS THAT WILL OCCUR AFTER THE BUSINESS SHUTS DOWN AND THE PRECAUTIONARY MEASURES TO TAKE AGAINST THESE IMPACTS

VI.1. Land Improvement

The project life foreseen according to the production license is 49 years. In case the Wind Power Energy Plant operation will stop, the turbines and all other equipment will be dismantled, will be valued according to the current economic conditions and the land improvement and reclamation work will take start.

The jobs performed within the scope of land improvement and reclamation work are soil conservation, drainage, terrain leveling, terracing, excavation and filling and as soon as the land improvement is done, the planting of plants appropriate for the region will start up. The plants within the frame of these works will be selected according to the climatic and soil characteristics of the region.

VI.2. Other studies

There are no other studies to evaluate under this topic

PART VII: THE ALTERNATIVES OF THE PROJECT (THE ALTERNATIVE LOCATION SELECTIONS AND PRECAUTIONARY MEASURES WILL BE COMPARED IN THIS PART AND THE CHOICES WILL BE LISTED IN THE ORDER OF THEIR PREFERENCE)

Project location alternatives

Wind is the result of Sun heating the earth surface differently. Different heating of the earth surface causes difference in the air temperature, humidity and pressure and this difference causes air mass movements. Only 2% of the Sun energy that reaches the Earth transforms in wind energy.

From the meteorological point of view, wind appears in the places mentioned below:

* Places where the pressure change is high,
* High, smooth peaks and valleys,
* Areas under the impact of strong geophysical winds,
* Coastal strips,
* Mountain ranges, valleys and peaks where canal influences appear.

The wind displays different time and regional characteristics depending on the geographical differences and different heating of the earth surface that is not homogenous. There are two parameters, speed and direction, that describe wind. The wind speed usually increases and theoretically, its power changes proportionally to its cube value. Along with some wind energy application disadvantages such as high initial investment cost, low capacity factors and variable energy production, it is superiorities can be listed as below:

* It is a renewable and clean, environmentally friendly source of energy,
* Its source is reliable, as time passes there is no risk to be exhausted or face price increases,
* Its cost reached the level where it is can compete with the present power plants,
* Its maintenance and operation costs are low,
* It creates employment opportunities,
* The establishment of its technology and operation is relatively simple,
* It can be put in function in a short time. [28]

The power plant location has been selected due to the above reasons.

Alternative Project Technologies

The wind turbines are the main structural element of the wind power energy plants and are the machines that transform the kinetic energy of the air masses in movement first into mechanical energy and then into electrical energy.

28 http://www.enerji.gov.tr/tr-TR/Sayfalar/Ruzgar

The wind turbines are manufactured with horizontal or vertical axis depending on their rotation axis. The most utilized types are the horizontal axis turbines. This type of turbine is manufactured with one, two or three rotor blades. The horizontal axis turbines are up- wind (front blowing wind) and down- wind (rear blowing wind).

The axis of the vertical axis turbine is vertical and perpendicular to the wind direction and the rotor blades are vertical. The electricity generation oriented and network linked modern wind turbines are mainly with three blades, horizontal axis and of wind- up type.

In our days, parallel to the technological developments, in the big wind power energy plants the horizontal axis wind turbines of 1,0 – 7,5 MW are in use. The blade diameter of the three blade turbines reached a value of 100 m and up. The hub of the modern wind turbines is at 60 m-120 m above the ground and on the top of a tower. The amount of energy obtained from one wind turbine depends primarily on the wind speed available at the hub height level. Increasing the hub height will provide maximum benefit from the available wind power.

The wind turbines start to function after the wind speed reaches a certain level. A wind turbine generates energy between the wind cut-in and cut- out speeds. The cut- in speed of the modern wind turbines is 2- 4 m/ sec, the nominal speed is 10 – 15 m/sec and the cut- out speed is 25 – 35 m/ sec. The power obtained from a turbine reaches its maximum value at the wind speed defined for each wind turbine. This maximum power is called nominal power and the maximum speed is called nominal speed. In order to prevent any damage to the system, the system is equipped with automatic stop of the wind turbines when the wind speed reaches a certain level. This maximum speed is called the cut- out speed of the system.

The body is sound isolated in order to prevent noise pollution. The towers are manufactured in the tubular or lattice form. Since the tower heights can be big, the tower constructions except the lattice towers can have two or more sections.

In Turkey, the installation of wind power plants at 50 m altitude from the sea level, in areas where the wind speed is 7,5 m/ sec and more and the power generated is 5MW per kilometer is approved. Apart from these approvals, the Wind Energy Potential Atlas (WEPA) has been prepared and it contain wind source information compiled using the medium size numerical weather forecast model and the micro size wind flow model. The wind energy potential of Turkey was estimated as 48.000 MW. The area corresponding to this potential is 1.3% of the surface area of Turkey.

The total annual wind energy generated in Turkey as at end of year 2015 was 11.652 GW. At the end of September 2016, the total installed power of the wind energy power plants was 5.228 MW.

The wind turbines are the systems that transform the kinetic energy of the wind, first into mechanical energy and then into electrical energy. A wind turbine in general consists of tower, generator, speed transformers (transmission box), electrical – electronic elements and rotor. The kinetic energy of the wind turns in mechanical energy at the rotor. The cycle speed of the rotor shaft increases and is transmitted to the generator in the main body. The energy generated by all the turbines in a wind power plant are transmitted to a single point

(switchyard) where the voltage is adjusted and transmitted to the whole system. The rotor blades of a wind turbine and the schematic view of the rotor are in Figure 64, the internal structure of a turbine is in Figure 65.

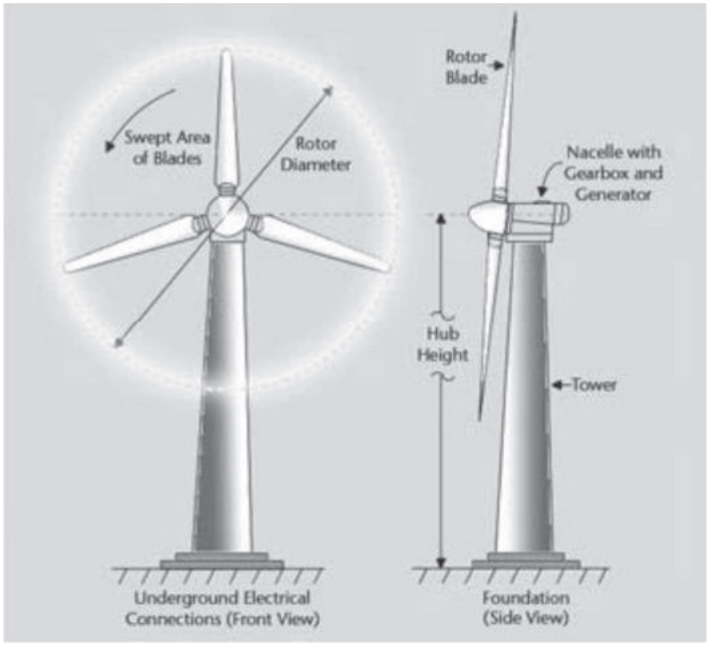


Figure 64 - Rotor blades of a wind turbine and the schematic view of a rotor.

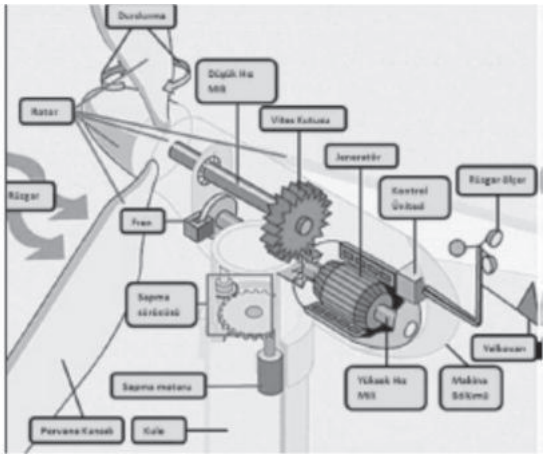


Figure 65 - Internal structure of a turbine

1. Nacelle (place of the motor):

The nacelle is placed on top of the turbine tower and inside there is the gearbox, the low and high speed shaft, the generator, the control unit and the brakes. The service personnel can access the nacelle through the turbine tower. At the left of the nacelle there is the wind turbine propeller consisting of the rotor blades and hub. The nacelle is in Figure 66.

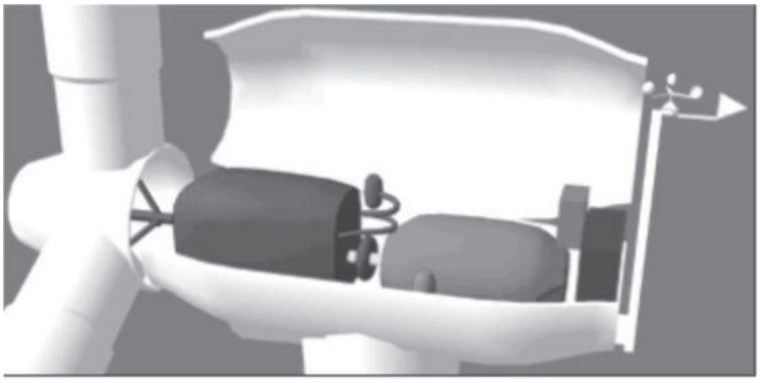


Figure 66. – Nacelle (place of the motor)

1.2 Gearbox:

Its function is to transmit the propeller torque (rotating power) to the generator. The gearbox cover is fixed to the base of the engine. The low speed entry shaft was connected directly to the gearbox hub without any traditional main shaft connection. The gearbox greasing system is without additional grease tank, it is in the form of compressed feeding.

1.3 Yaw drive:

The wind turbines that function against the wind are obliged to function face turned towards wind. The yaw drive secures the rotor work continuously facing the wind by following the changes of the wind direction.

1.4 Yaw motor:

Supplies power to the yaw drive.

1.4 Brakes:

The way in which the brakes function is by stopping completely the turbine rotor blades. Furthermore, the inclination cylinders can intervene and increase the brakes safety. This system is activated by pushing the emergency stop button inside the turbine.

1.5 Generator:

The electrical generator is an asynchronous type generator.

1.6 High- speed shaft:

It drives the generator

1.6 Low- speed shaft:

The rotor rotates it at low speed to make 30 – 60 rotations per minute.

1.6 Pitch:

The rotor blades rotate at very low or at very high speed to generate electricity, the pitch is controlling the rotation speed sometimes stopping the rotor, sometimes turning it.

1.6 Rotor:

The propeller blades and hub are called rotor.

1.7 Tower:

Since the wind turbines can produce more energy at high altitudes, the tower is made of resistant materials (tubular steel, concrete or steel lattice). In the wind power plant the turbine towers will be tubular tower system and the additional turbines were selected with the same specifications.

1.8 Blades:

Most of the wind turbines have two or three blades. The wind blowing upon the blades is rising them and makes them rotate. The turbines in the wind power plant have 3 blades. The planned ones are of the same type.

1.9 Wind:

As seen in Figure 65 the wind turbine is installed facing the wind blowing direction and the operating mechanism was designed accordingly. These turbines are called turbines running against the wind.

1.10 Wind vane:

It measures the wind orientation and transmits this information to its driver. In this way, it provides for the wind turbine to spin towards the wind.

1.11 Anemometer:

Measures the wind speed, transmits this information tp the control unit.

1.12 Controller:

The controller stops the systems or activates it according to the changes in the wind speed. When the wind speed is 8-16 miles per hour is activates the system. In the same way, when the wind speed is more than 55 miles per hour the system stops. A wind speed higher than 55 miles per hour causes damages to the system. That is why the controller is very important.

The Bozüyük Wind Power Energy Plant plans to utilize 48 GE wind turbines within its scope. The most significant factor in the selection of the wind power plant for generating electrical power was the utilization of our natural resources, as well as other the facts such as being much cleaner than the other electricity generating power plants, being a more reliable source of energy and greenhouse gas emissions being out of question.

PART VIII: MONITORING PROGRAM

VIII.1. The monitoring program proposed for building the activity, the monitoring program proposed for the operation of activity and the post- operation phase and the emergency plan.

The monitoring program proposed for building the activity, the monitoring program proposed for the operation of the activity and the post- operation phase

The scope of the program covers the activities that might have harmful results for environment and health regarding to all the works performed related to the project, the follow up of all the the commitments in the Environmental Impact assessment Report and of the fulfillment of the legal obligations on this subject, their audit and reporting of the audit results. Follow up of the construction process should consist of checking if the negative impact of the construction and operation activities has exceeded or not the limit values in the regulations concerning the defined measures and/ or if they were eliminated or not.

The provision in Article 4, paragraph b) of the Regulations for the Environmental Impact Assessment enacted by its publication in the official Gazette Issue number 29186, dated November 25th 2014, saying *"The institutions/ enterprises authorized by the Ministry; the institutions/ enterprises holding the qualifications for preparing the Environmental Impact Assessment Application File, the Environmental Impact Assessment Report, for preparing and presenting the Project Presentation File, for making acknowledgments at certain periods of the investment process defined by the commission regarding the developments related to start and construction phases of the projects which obtained the "Positive Environmental Impact Assessment" decision",* (Environmental Impact Assessment Regulations Amendment number 29618 dated February 9th, 2016) was repealed. In order to be able to do a more detailed investigation and identification before the start up of the subject project works, the Environmental Follow Up Program (6 months or 1) should be established and the observation should be done according to this program. The Environmental Follow Up Program should include at least the issues under the topics mentioned below.

Construction Phase Follow Up Program

1. Water Management

There will be potable – industrial water consumption during the construction phase in order to meet the needs of the personnel on duty and to prevent dust spreading. The potable- industrial water for the personnel's needs and the potable- industrial water for other utilizations (dusting prevention, washing of equipments, etc.) will be provided against charge by rented tankers, from the source point indicated by the Dodurga Municipality. If necessary, the potable water for the personnel on duty is planned to be supplied by the water sold on the market in plastic bottles or demijohns that are licensed and have permits. The subject situation will be followed up. It will be checked if the domestic sewer water is collected in the leak proof septic faucets built pursuant to the **"Regulations for the faucet construction in the places where the construction of sewage system is not possible"** enacted by its publication in the Official Gazette Issue number 13783 dated March 19th, 1971 and is removed against charge by the concerned municipality with the sewage trucks.

2. Waste management

a. Domestic solid wastes

It will be checked if these domestic solid wastes are kept closed in order to prevent any threat for the human health, are accumulated and made ready for collection in the way defined within the scope of **Article 9** of the **Regulations for Waste Management** by the authorized institutions and authorities appointed to collect, transport and dispose of them and if the necessary measures are taken.

It will be controlled if the domestic solid waste collected within the scope of **Article 5** of the **Regulations for Waste Management** is transported by the project owner in special closed container vehicles, in such a way that the environment is not polluted by view, odor, dust, leakages and similar factors, and if it is transported to the place deemed suitable by the Dodurga Municipality after getting the required permits.

b. Follow up of the Excavation material excess/ Excavation and construction waste

It will be checked if the 126.432 m^3 excavation material excess is utilized according to the provisions of Article 26 of the Regulations on Excavation Waste Control primarily in the filling, recreation, solid residue storage areas as daily cover layer and similar purposes; in case the re-utilization is not possible, if it is used pursuant to the protocol that will be concluded with the Concerned Authority, in the road construction works or in the zone deemed appropriate by the Concerned Authority for environmental arrangements and in this case, if it is taken from the area and transported pursuant to the provisions of **SKHKKY**in order to restore the area.

As mentioned, it is supposed that about 5% of the excavated material (6.322 m^3) will be vegetal soil. There is no intention to store vegetal soil in the construction zone. It will be checked if the vegetal soil that comes out in the area of each turbine is used for creating green zones within the scope of landscape works made for environmental arrangements.

c. Follow up of the Packaging waste

It will be controlled if the paper wastes are collected properly, separately from the domestic solid wastes, are accumulated in the accumulation equipments within the scope of the **"Regulations for the Packaging Waste Control"** number 30283 dated December 27th, 2017 and then are sent to the municipalities responsible of their collection and/or to the environmentally licensed recycling companies which have contracts with the municipality.

d. Follow up of waste oils

It will be checked if any oil change of the work machines and transportation means during the construction phase of the project is executed at the fuel oil stations with maintenance and repair license. Within this scope it will be controlled if compliance is provided with the provisions of the "Regulations for the Control of Waste Oils" enacted by its publication in the Official Gazette Issue number 26952 dated July 30th, 2008 (as amended in number 27305 dated July 31st, 2009; as amended in number 27537 dated March 30th , 2010, as amended in number 28812 dated November 5th, 2013)

It will be followed up if compliance is provided with the provisions of the **"Regulations for the Control of Earth Pollution and Areas Polluted from Spot Sources"** enacted by publication in the Official Gazette number 27605 dated June 8th, 2010.

Besides, it will be controlled if compliance is provided with the provisions of the "**Waste Management Regulations**" **number 29314 dated April 2nd, 2015 (as amended with number 30016 dated March 23th, 2017)** in order to minimize the risk of any kind of materials contaminated by oils, fuel oil, etc. for the human health and environment,

e. Vegetal Oil Waste Follow up

It will be followed up to see if the waste vegetal oil resulting from the cafeteria built on the site during the construction phase within the project scope is accumulated pursuant to the "**Regulations for the Waste Vegetal Oils Control"** number 29378 dated June 6th, 2015 in tanks/barrels and is transported by licensed companies to the environmentally licensed recycling/ retrieval facilities.

d. Hazardous Waste Follow up

It will be controlled if the the hazardous wastes are collected separately from the other wastes pursuant to the provisions of the "**Waste Management Regulations**" number 29314 dated April 2nd, 2015 (as amended with number 30016 dated March 28th, 2017) and are sent with licensed transport companies to the environmentally licensed recycling/ retrieval facilities.

e. Medical Waste Follow Up

It will be followed up if the medical wastes accumulated within the project scope are collected separately from the other wastes compliant to the "Regulations for the Medical Wastes Control" number 29959 dated January 25th, 2017 , in red plastic bags labeled "Caution! Medical waste" and, based on the medical waste contract, are collected by the licensed company and sent to the medical waste treatment facilities for disposal.

f. Expired tires, Waste Batteries and Waste storage battery

It is planned to outsource the maintenance repair of the work machines. However, if maintenance will be done in the project area, it will be followed up if the unusable expired tires of the work machines are sent to the environmentally licensed recycling companies pursuant to the "Regulations for the Control of Expired Tires" published in the Official Gazette Issue number 26357 dated Novenber 25th, 2006 (amendment number 27537 dated March 30th, 2010; amendment number 28817 dated November 10th,2013; amendment number 29292 dated March 11th, 2015).

The provisions of the "**Regulations for the Control of Waste Batteries and Waste Storage Batteries"** (amended by number 25744 on March 3rd, 2005, by number 27305 on July 3rd , 2009, by number 27537 on March 3rd, 2010, by number 28812 on November 5th, 2013, by number 29214 on December 23rd, 2014) enacted by their publication in the Official Gazette Issue number 25569 dated August 31st, 2004 will be com plied with regarding the expired batteries and storage batteries within the project scope. In this context, it will be followed up if the waste batteries are collected separately from the domestic waste, are delivered to the collection points determined by the companies that sell them or by the municipality.

Since the maintenance repair services will be outsourced, collection of waste storage batteries is out of question. However, in case maintenance and repair will be done on site, it will be checked if the waste storage batteries are collected in their own section of the storage area and afterwards are sent to the environmentally licensed recycling/ retrieval facilities.

3. Air management

During the construction period, there will be dust and gas emissions from the works performed.

The measures required for preventing the dust emitted during the activities from exceeding the limit values, covering the truck body with tarpaulin, complying with the speed limits, loading and unloading without spreading around, sprinkling of the area will be followed up.

It will be be checked if within the project scope compliance is provided with the provisions of the "**Regulations for the Assessment and Management of Air Quality"** published in the Official Gazette Issue number 26898 dated June 8th, 2008 (as amended with number 27219 dated May 5th, 2009) and of the **"Industrial Air Pollution Control Regulations"** published in the Official Gazette Issue number 27277 dated July 3rd , 2009 (as amended with number 29211 dated December 20th, 2014).

The measurement of the exhaust gas emissions of the vehicles used during construction and getting their documents will be followed up.

The fuel system of he vehicles functioning in the project area will be continuously checked, compliance will b e provided will the provisions of the**" Regulations for the Exhaust Gas Emission Control and Gasoline and Diesel Fuel Quality**" enacted by publication in the Official Gazette Issue Number 28257 dated November 30th, 2013 and of the "**Regulations for the Control of Industrial Air Pollution**" enacted by publication in the Official Gazette Issue Number 27277 dated July 3rd, 2009 (amendment number 29211 dated December 12th, 2014).

4. Noise

There will be noise from the machines utilized and the works done in the zone within the project scope.

It will be followed up if the measurements are made and the preventive measures are implemented in order to prevent the noise of the machines and equipment from exceeding the limits defined by the regulations.

Operation Phase

Waste Management

Domestic Solid Waste

It will be checked if these domestic solid wastes are kept closed in order to prevent any threat for the human health, are accumulated and made ready for collection in the way defined within the scope of **Article 9** of the **Regulations for Waste Management** by the authorized institutions and authorities appointed to collect, transport and dispose of them and if the necessary measures are taken.

It will be controlled if the domestic solid waste collected within the scope of **Article 5** of the **Regulations for Waste Management** is transported by the project owner in special closed container vehicles, in such a way that the environment is not polluted by view, odor, dust, leakages and similar factors, and if it is transported to the place deemed suitable by the Dodurga Municipality after getting the required permits.

Packaging Waste

It will be followed up if the paper wastes are collected separately from the domestic wastes, are accumulated in collection elements pursuant to the provisions of the **"Regulations for the Packaging Waste Control"** number 30283 dated December 27th, 2017 and then are sent to the municipalities responsible of their collection and/or to the environmentally licensed recycling companies which have contracts with the municipality.

Waste Oils

In case the maintenance repair work is done on site, other motor, gearbox and lubricant oils, other hydraulic oils, waste insulation and heat transmission oils will be handled.

The turbines need maintenance once per year and some waste oil will result from this service. It will be controlled if the waste oils resulting from the maintenance and repair of the turbines are temporarily collected in leak proof closed barrels and then sent to the licensed recycling/ retrieval facilities.

Vegetal waste oils

During the operation period the personnel meals will be outsourced. For this reason the accumulation of waste oils in the area is out of question.

However, in case meals will be cooked in the cafeteria of the administrative building, it will be followed up if the waste vegetal oil resulting from the cafeteria services is kept temporarily in closed non-leaking barrels, on the concrete ground of a closed area not affected by the weather conditions pursuant to the "**Regulations for the Waste Vegetal Oils Control"** number 29378 dated June 6th, 2015 and is transported by licensed companies to the environmentally licensed recycling/ retrieval facilities.

Hazardous wastes

It will be followed up if the waste due to changing the fluorescent lamps in the offices of the administrative building fluorescent bulbs is collected in boxes so that they will not break, if after having been stored temporarily in the waste area, the collected fluorescent bulbs are transported by licensed transport companies to the environmentally licensed recycling/ retrieval facilities.

The printers in the company will also create waste cartridges and toners. It will be checked if the waste cartridges and toners and are regularly collected and stored temporarily in their zone of the waste area

within the scope of the Waste Management Regulations and after collection are sent with licensed transport companies to the environmentally licensed recycling/ retrieval facilities.

It will also be controlled if the hazardous wastes created pursuant to **Waste Management Regulations**" number 29314 dated April 2nd, 2015 (as amended with number 30016 dated March 28th, 2017), will be collected separately from the other wastes, will be stored temporarily in their section of the waste area and wastes will be sent with licensed transport companies to the environmentally licensed recycling/ retrieval facilities.

Air management

Due to the nature of the project, emissions are out of question during the operation period.

Noise

It will be followed up if the measurements are made and the preventive measures are implemented in order to prevent the noise level of the machines and equipment utilized for the works done in the zone within the project scope, from exceeding the limits defined by the Regulations for the Management of the Environmental Noise Assessment. In case it is revealed that the noise is exceeding the foreseen regulations limit, then the acquisition and utilization of the required protection equipment and instruments will be provided.

The Post- Operation Period

After the expiry of the wind power plant lifetime, the turbines will be dismantled. After the expiry of the enterprise lifetime, there will be no issue of impact on the surface or subterranean waters. In the same way, since there will be no emission after the close up of he business, there will be no issue of negative impact on the air quality. Consequently, no follow up is recommended at this stage. However, according to the assessment made after the activity stops, before leaving the area, the land will be im roved and brought to a state in harmony with the actual topography so that it would be ready for utilization.

Emergency Action Plan

The first stage of the emergency action planning is the identification of the incidents that might occur in the activity area. These identifications are the definition of the accidents and events that might create emergencies. These identifications also determine the impact of the probable accidents and events upon environment, people, facility and equipments.

Chart 78 - Telephone numbers to be called in case of emergency

Fire Department	110
First Aid	112
Police Department	155
Gendarme	127

In case of fire, the extinguishers should be in an easily accessible place on site. Once the facility operations take start, the Emergency Action Plan in force.

A. Purpose

It was prepared in order to minimize the loss that might be caused in emergencies expectable in the sections carrying the risk of big accidents that would affect the workers on site, the environment and the community.

B. Scope

It was prepared for the Bozüyük Wind Energy Power Plant.

C. Target

To minimize the loss causable in emergency cases and to utilize the facility possibilities.

D. Assumptions

The fact that a possible accident would spoil the ecological equilibrium, that a possible accident due to flammable and explosive materials might cause loss of life and goods, that help would be provided by the province and sub- province possibilities was accepted.

E. Communication

Communication will be by telephone, wireless and facsimile. The facility managers will communicate directly with the Gendarme and police departments and direct contact will be provided any time also with the Municipality and Governorship.

F. Implementation:

* The preparation, testing and, if necessary, the revision of the Emergency Action Plan of the facilities.

* In order to secure the success of intervention in case of emergency, an organization should be established, the responsible persons should be appointed and the coordination arranged.

* The entire faire extinguishing system with all the tools and equipments must be available in the facilities in order to provide the fire safety.

* There should be an alarm system installed all over the facility area so that the personnel can get acknowledged immediately in case of emergency.

* The human power and other possibilities necessary in case of emergency should be available.

* Make the best selection by following the developments in the technologies that could be used for emergency preparations and intervention.

* The personnel's consciousness level should be raised by some activities during the implementation of the emergency action plans.

* Establish collaboration with the concerned persons in the neighbor facilities and factories, the security units and sub-province officials in order to benefit from their availabilities regarding personnel equipments and other possibilities.

G. Announcement and Communication Systems

* In case of any accident the the facility manager responsible of the facility will inform the closest local security teams and the civil chief.

* In case of emergency, the president or one of the vice presidents of the intervention commission will be informed.

* In cases of emergency the General Directorate to which the terminal is linked and also the concerned directorate will be informed.

* In case of such accidents, since communication is very important and considering the impact area, the vehicle phone and other communication means will be used.

* In cases of emergency, announcements will be made by the Governorship, the Municipality involved and by the Police forces using the vehicles phones and other communication means, the Emergency Intervention Commission president, vice presidents and members, being totally aware of these announcements.

H. Emergency Intervention Sources

* The lists showing the the identity, title and telephone numbers of the personnel appointed in the emergency action plan should be posted in the most appropriate places.

* The lists showing the telephone numbers of the important units should be posted in the Security building.

* The personnel's protective equipment should be maintained in the facility.

* The first aid and other urgent intervention medical stuff should always be available in sufficient quantity at the facility.

* Sufficient fire extinguishing equipment

* The fire extinguishing equipment should be easy to handle, should be placed in visible and easily accessible places, free of any obstacles.

* The fire extinguishers should be marked pursuant to the Regulations for the Safety and Health Marks, the marks should be placed in suitable places and should be permanent.

I. Proceedings to do after after emergency

When the emergency is over, the president of the emergency intervention commission will give the entry pass to the area. When the emergency is over, this will be announced by telephone, radio and other communication means. The representatives of the institutions below will be announced about accident in order to observe the damaged area, to study it and to provide the necessary sources:

* Ministry of Environment and Urbanization
* Provincial Directorate of Health
* Concerned Mayor

Training and Practice

The Facility manager will initiate periodic fire training practices for the personnel. Furthermore, in the facility there will be organized announced and unannounced emergency trainings and practices. Civil Defense Training will be given in coordination with the staff of the concerned Civil Defense Directorate.

The actions within the project scope will be compliant with the provisions of the "**Occupational Health and Safety Law"** number 6331 and the "**Labor Law**" number 4857.

The actions within the project scope will be compliant with the provisions of the "Regulations about the Utilization of the Personal Protection Equipment in the Workplaces" published in the Official Gazette Issue number 28695 dated July 2nd, 2013 and of the "Regulations for the Personal Protective Equipment" published in the Official Gazette Issue number 26361 dated November 29th, 2006.

Situations for Emergency Action Plan Implementation

The first step of the emergency action planning is the identification of the incidents that might occur inside and outside the facilities. These identifications are the definition of the accidents and events that might create emergencies. These identifications also determine the impact of the probable accidents and events upon environment, people, facility and equipments. The situations can be listed as follows.

* Emergency action plan when the fire is inside the facility,
* Action Plan to implement in case of earthquake,

* Emergency action plan to implement in case of flood and inundation,
* Emergency action plan against terrorism, sabotage, bombs and threats

The emergency action plans carry different features specific to themselves depending on the different situations they were prepare for. At the preparation step, the worst results are assumed.

However, the success of an emergency action plan depends on the human factor. The people should be conscious about emergency and emergency intervention. It should give all the personnel the opportunity to intervene in case of emergency. This can be achieved only by sufficient, comprehensive training and practices. For this reason, all the personnel should participate in the the periodic training and practices and should feel themselves always ready o face a negative incident.

General Rules to implement in emergency cases

* In case of emergency, the highest authorized person present on site in that moment is the Emergency Chief.

* The Facility Manager becomes Emergency Chief as soon as he/she reaches the incident/ accident place.

* The Emergency Chief, the Emergency Operations Chief are responsible of the emergency plans. In situations when the facility executive is absent this task will be performed by the Facility Assistant Manager.

* The Operations Chief is responsible off the implementation of the instructions given by the Emergency Chief and of the management of squads.

The emergency intervention squad will be formed, if possible, mostly from the facility personnel. Persons will take place in the emergency plans with their names. The squads to form for emergency intervention can be listed as follows:

- First Aid Squad,
- Fire Fighting Squad
- Communication Squad

* Depending on the characteristic of the situation, the Emergency Chief can form different squad for the different purposes not mentioned in the emergency plans. The squad members should be selected among the persons trained on the subject.

* The emergency is announced using the alarm systems. The Emergency Monitoring Center is established somewhere with the lowest risk around the main entry of the facilities in order to serve as headquarters or crisis center in cases of emergency. The equipment available in this center are as follows:

    1. Internal and external telephones of sufficient capacity,
    2. Mobile phones of different GSM Operators,
    3. Wireless devices
    4. Personal protective and life saving equipments,

5. Plans and projects describing the facilities,
6. Telephone numbers and address lists of the concerned authorities.

* A suitable area, large enough for all the personnel to meet there and on a route easily accessible by everybody will be established as Meeting Point in cases of emergency.
* The Meeting Point will be indicated by special signs and will be always kept accessible, orderly and under control.
* On case of emergency everybody present on site will go to the "Meeting Point" in order to take action according to the instructions that will be given by the Emergency Chief.
* In emergency case any communication issues such as calls to the required places or for getting information will be executed by the Security Staff.
* The First Aid Squad is formed by the Work Place Physician by persons with first aid training.
* Regarding the life saving services it is preferable to collaborate with the institutions competent in the basic emergency interventions.
* The Fire Fighting Squad is formed by persons who have theoretical and practical training in fire fighting.

Emergency Plan in case of Fire in the Project Area

Regarding the probable fires that might occur in the project area, measures are to take in advance in order to prevent its occurrence. During the dry seasons, measures are to take for preventing making fires outside the facility area, especially in the forest zone. For any probable fire, the extinguisher devices and equipments should be ready available inside the project area.

* The personnel present in the facility will take action immediately in order to form the squads defined in the Fire Fighting Plan.
* All of the squad members will have comprehensive knowledge of fire risks and fire equipments.
* In case of emergency, the members of the squads mentioned in the Fire Fighting Plan will conduct fire investigations in their own areas under the supervision of the squad leader.
* All activities in the facility will pause, energy will be cut, if in function, the generator will stop.
* The local fire department will be informed depending on the probability of fire expansion. Furthermore, the institutions in the surroundings and the other public and private agencies mentioned in the emergency plan will be informed.
* All those indicated in the emergency plan and mentioned in the persons to be called list in the Headquarters will be notified about the incident.

* The fire squad will intervene. The intervention method must have been explained and consolidated in the preliminary trainings.
* In the meantime the support teams come on duty.
* The facility Manager provides the coordination of all internal and external operations and help received.
* After the fire comes under control and is put off, the facility manager prepares a summary report with details of the incident in order to submit to all the concerned departments in the Headquarters.

FIRE

PUT ON SOUND ALERT FOR THOSE AROUND YOU
INFORM YOUR CLOSEST SUPERIOR AND THE OCCUPATIONAL SAFETY UNIT

FIRST CALL THE FIRE DEPARTMENT **(110)**
INFORM THE TYPE OF FIRE, PLACE AND THE INJURED, IF ANY
MAKE THE FIRST INTERVENTION WITHOUT HARMING YOURSELF

CUT OFF THE ENERGY OF THE WORKING MACHINES, EQUIPMENT
(**ENERGY SOURCES INTERVENTION TEAM)**

TAKE THE MATERIALS TO BE SAVED FIRST FROM FIRE AND GO TO THE MEETING POINT THROUGH THE CLOSEST FIRE EXIT INFORM THE SQUAD RESPONSIBLE YOUR ARRIVAL

INFORM THE NUMBER OF YOUR PERSONNEL TO THE PERSON IN THE PROTECTION TEAM WHO MAKES THE COUNT

START THE EXTINGUISHING WORKS
(EXTINGUISHING TEAM)

ANYBODY INJURED?

(NO)
SAVE THE OBJECTS FIRST TO SAVE
(LIFE SAVING QUAD)

(YES)
INFORM THE LIFE SAVING SQUAD
(EXTINGUISHER SQUAD)

CARRY THE INJURED TO THE FIRST AID AREA
(LIFE SAVING SQUAD)

HELP THE INJURED IF YOU HAVE A FIRST AID CERTIFICATE
(FIRST AID SQUAD)

IF NECESSARY CALL THE AMBULANCE AND SEND TO THE HOSPITAL (191)
(FIRST AID TEAM AND TRANSPORT TEAM)

INVESTIGATE THE FIRE ZONE TOGETHER WITH THE FIRE DEPARTMENT SQUADS, IDENTIFY THE CAUSE OF FIRE, PREPARE REPORT AND MINUTES
(OCCUPATIONAL SAFETY RESPONSIBLE)

INFORM THE PLACES IN THE EMERGENCY PHONE NUMBERS LIST **(PROTECTION SQUAD)**

PROVIDE THE ELECTRICITY AND GAS CUT BY CALLING NON STOP THE ELECTRICITY AND MECHANICS SUPERVISOR

MAKE A PEOPLE COUNT IN THE MEETING AREA AND PROVIDE THE SECURITY OF THE PLACE
(**PROTECTION TEAM)**

(NO) ANYBODY MISSING? **(YES)**

MAKE A SEARCH IN THE FIRE AREA AND FIND THE MISSING **(PROTECTION SQUAD)**

CARRYING THE INJURED OUTSIDE THE FIRE ZONE TO THE MEETING AREA **(LIFE SAVING SQUAD)**

Figure 67 – Fire emergency action plan

Plan to implement in the moment of earthquake

Earthquake is one of the greatest natural disasters. The first and most important measure is to keep calm in the moment the earthquake starts. Afterwards the following measures are to take and implemented immediately.

* The personnel working in the closed places must get out through the closest and safest exit and, if possible, must go to the Meeting point, if not, will chose a safe place in open area and will wait for the instructions of the Emergency Chief for making the probable intervention.

* Information is gathered from different sources about the center and intensity of the earthquake. For information about after shocks the Official Sources will be contacted.

* When the situation is safer the action will start gradually.

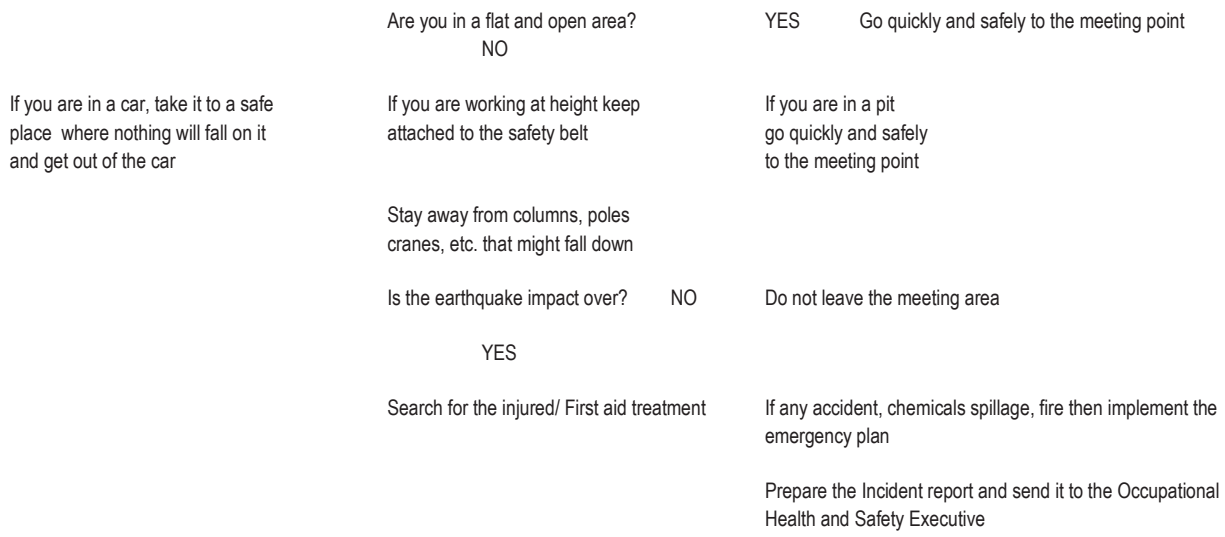


Figure 68 – Earthquake Emergency Plan

Emergency plan to implement in case of flood and inundation

Floods and inundations are not natural disasters that occur spontaneously, but they develop during a certain period of time. For these reasons, the emergency plans to implement are progressing within the frame of a certain established plan.

* Visual inspections will be made for the erosion, leakage and overflows.
* In case of any damage that might be important the concerned authorities will be notified

immediately.

* If very strong winds are expected, the observations will be more frequent and the changes reported.
* If strong winds are not expected and the first observation was made at night, then the following control will in the morning.
* If it is safe, the damage control of the building will start.
* When the water level increase stops or starts to decrease, a program is established regarding the actions to take after inundation.

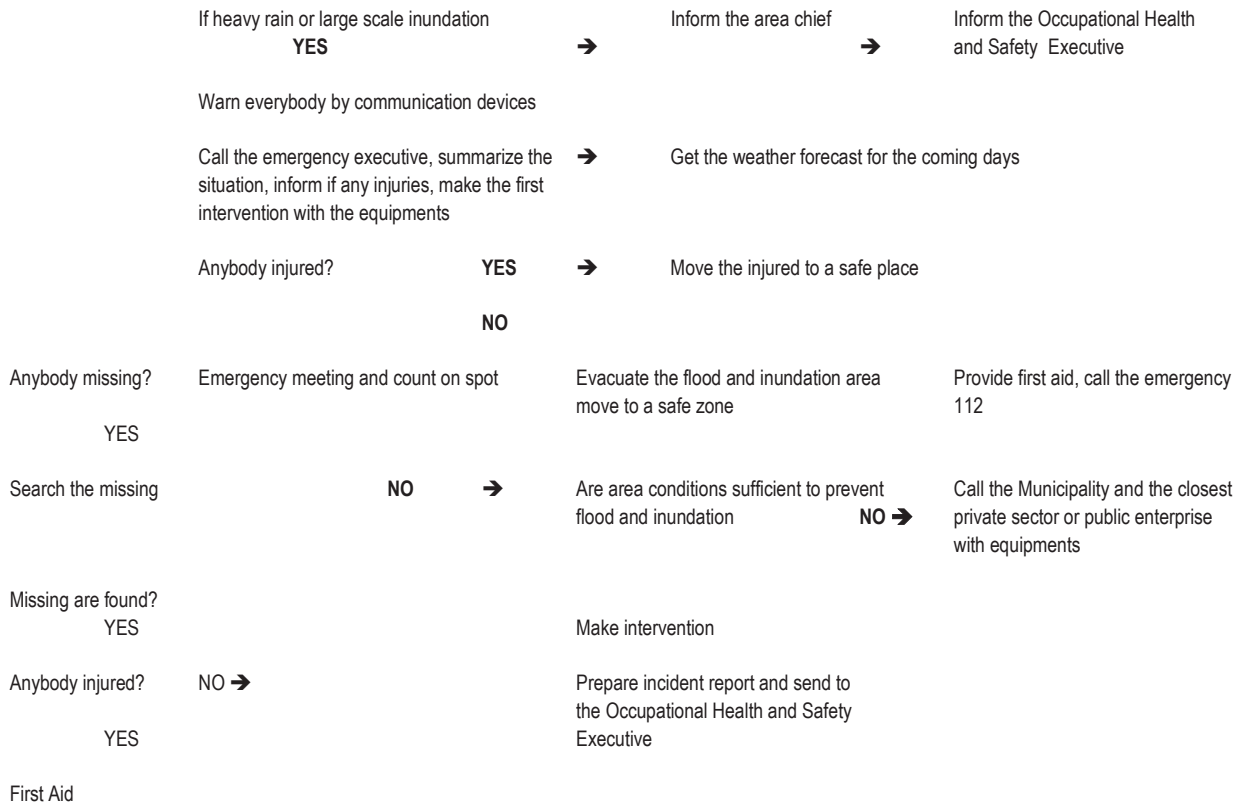


Figure 69 – Emergency Plan for Flood and Inundation

Emergency Plan to implement in case of Landslide, Erosion

* If during the routine controls any situation such as landslide, erosion, etc. is observed the collision risk of the building should be evaluated.
* If any sign is found, the damage size is calculated and if, water cannot be controlled, it is reported to the responsible personnel.
* If no sign is found, all possible problems are recorded.

The concerned authorities are informed immediately. *
All the events happening in all periods are recorded. *
If safety is restored, the damage control is done.

Emergency Plan to implement in case of Explosion

If any explosion happens in the facility, it will be informed by the Emergency Coordinator and the Emergency Intervention Squad Chief to the concerned people pursuant to the emergency announcement regulations. The personnel not figuring in the emergency organization will head towards the Emergency Meeting Zone defined by the company. The personnel who is involved in the emergency organization will take action in line with the orders of the Emergency Coordinator according to the explosion source, place and impacts.

Emergency Plan to implement in case of Sabotage and Bomb Denunciation

1- Whenever a sabotage or bomb denunciation is received the authorized bodies are informed. Security request is submitted.
2- If any suspicious object, package is identified the regional police is promptly informed. The suspicious object or package is not touched, a security circle forms around it and the personnel are not allowed to approach it.
3- If there is any suspicious person noticed, the clothes, type, face shape, noticeable characteristics are noted down, the suspicious behavior is observed but no attempt is made to catch or to interfere, the regional police is informed.
4- If the security squads request, the Security camera recordings will be taken to the police.
5- All regions critical for the enterprise will be kept under control.

Things to do during and after the sabotage

Depending on the type of sabotage, all the actions necessary to minimize the negative impacts upon the enterprise and its staff will start up.

1. If there is a fire caused by the sabotage,
the Fire Emergency Plan comes in application

2. If there is an explosion caused by the sabotage,
the Explosion Emergency Plan comes in application

3. If there is any electricity cut caused by the sabotage ,
the system is temporarily supplied by the generator, if there is no electrician on site and electrician is called and if the electrician's arrival is delayed , then the Generator will be operated pursuant to the Instructions for Generator Operation in Emergency and put in function.

IDENTIFY THE SABOTAGE METHOD

FIRE EXPLOSIVES MECHANICAL BACTERIAL (CHEMICAL) IDEOLOGIC/ PSYCHOLOGIC

CALL THE SPECIAL SECURITY SQUAD

CALL 116 GEANDARME, 112 EMERGENCY
110 FIRE DEPARTMENT

PROVIDE SAFETY AROUND THE SITE
WITHOUT CREATING ANY LIFE THREAT

LIGHTEN THE SITE AREA

KEEP THE ENTRY AND EXIST GATES
UNDER CONTROL

IF NECESSARY USE THE FIRE, LEAKAGE AND
OTHER EMERGENCY PLANS

Figure 70 – Sabotage Emergency Plan

VIII.2 In case the result of the Environmental Impact Assessment will be positive, the program regarding the actualization of the issues in the fourth paragraph of the Competency Communiqué, under the topic "Obligations of the Institutions/ Enterprises granted with the Competency Certificate

The provision in Article 4, paragraph b) of the Regulations for the Environmental Impact Assessment enacted by its publication in the official Gazette Issue number 29186, dated November 25th 2014, saying *"b) The institutions/ enterprises authorized by the Ministry; the institutions/ enterprises holding the qualifications for preparing the Environmental Impact Assessment Application File, the Environmental Impact Assessment Report, for preparing and presenting the Project Presentation File, for making acknowledgments at certain periods of the investment process defined by the commission regarding the developments related to the start up and construction phases of the projects which obtained the "Positive Environmental Impact Assessment" decision",* (Environmental Impact Assessment Regulations Amendment number 29619 dated February 9th, 2016) was repealed.

PART IX: PUBLIC PARTICIPATION

(HOW AND BY WHICH METHODS WERE INFORMED THE LOCAL PEOPLE WHO WOULD PROBABLY BE INFLUENCED BY THE PROJECT, THE REFLECTION OF THE PUBLIC OPINION TO THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND THE EXPLANATIONS GIVEN RELATED TO THE SUBJECT)

Related to the activity and within the scope of Article 9 of the Regulations for Environmental impact assessment enacted by their publication in the Official Gazette Issue number 29186 dated October 25th, 2014 (as amended by number 29619 dated February 9th, 2016, by number 30077 dated May 26th, 2017) the **"Public Participation Meeting"** took place.

Within the scope of Article 9 of the current Regulations for Environmental impact assessment for the public acknowledgement on the investment was organized on February 2nd, 2017 at 14:00 hrs in Bilecik Province, Bozüyük Sub- province, Muratdere Village at the Village Mansion.

Prior to the meeting, two announcements were published in two newspapers, the daily **Posta Newspaper** distributed country wide and in the local daily **Yayın Newspaper**. The newspaper announcements can be seen in **Figure 72** and **Figure 73**. On the other side, the Bilecik Province Directorate of Environment and Urbanization were contacted and some correspondence was held and the announcement texts were sent to them. Furthermore, the announcement text was posted in the Muratedere Village Mansion.

Brochures were distributed on the public participation meeting in the Muratdere Village mansion where the meeting was held, the En- ÇEV officials made a presentation to the public on the investment, people's opinions and suggestions were taken.

Below are the participants in the Public Participation Meeting:

* Eskişehir Province Directorate of Environment and Urbanization and officials of the Province Directorate,
* Ministry of Environment and Urbanization,
* Bilecik AFAD,
* State Water Affairs Region 3 Directorate,
* Directorate of Agriculture and Stock Breeding
* Province Public Health
* Province Special Administration,
* Province Directorate of the Nature Preservation and National Parks,
* Officials of En- ÇEV A.Ş.,
* Muratedere Village Mukhtar,
* Muratdere community.

Şekil- 71 Posta Gazetesi

Figure 71 – POSTA Newspaper


YARIN

21 Ocak 2017 Cumartesi

Sayfa 2

"Ödev konusunda öğrencilerimiz çok yüklenmeseniz iyi olur"

Yardım tırı dualar eşliğinde yola çıktı

"Sen kendini ne sanıyorsun haddini bil"

GÖZALTINDAKİ BYLOCK'CU POLİSLER TUTUKLAMA TALEBİ İLE MAHKEMEYE SEVKEDİLD

'SPOR YARALANMALARINDA GÜNCEL TEDAVİ YÖNTEMLERİ'

DUYURU

ÇED Sürecine Halkın Katılımı Toplantısı

Figure 72 – YARIN Newspaper

The minutes of the Public Participation Meeting are given attached (**see Attachment 4.11**), the following questions were asked at the meeting:

Question (Muratdere Village Community)

"In the Public Participation Meeting how will be the transmission of the T33 and T34 turbines?, what will happen to the agricultural lands between these turbines? How will be the expropriation settled?, will the turbine be surrounded by wire fence for safety?

Reply

The electric energy to be generated by the power plant will be 323.000.000 kwh per year. It is planned to transfer 154 Kv of this energy to the switchyard center by using the Seyitömer – Bozüyük Transformer Center EİH in- out link. The turbine transmission line will be subterranean.

However, as the energy transmission lines were not assessed within the scope of this project, the necessary applications will be made and the required permits will be obtained within the scope of the Regulations for the Environmental Impact Assessment number 29186 dated November 25th, 2014(as amended by number 29619 dated February 9th, 2016, by number 30077 dated May 26th, 2017).

All the actions for providing the utilization of the agricultural lands for non- agricultural purposes, will be executed in compliance with the provisions of the **"Soil Protection and Land Utilization Law number 5403**" and with the Letter number 2239548 dated September 13th, 2017 of the Ministry of Food, Agriculture and Livestock (General Directorate of Agricultural Reform).

The expropriation proceedings within the project scope will be executed pursuant to the provisions of the Expropriation Law number 2942 and its amending law, the Expropriation Law number 4650 enacted by its publication in the Official Gazette dated May 5th , 2001.

Question (Muratdere Village Mukhtar)

"Is it dangerous if the rotor blades freeze? Will there any security measure be taken? Would it impact the surroundings due to wind? During construction will employment be provided from this region?

Reply

In case the necessary anti-frost measures are not taken, then the ice pieces falling from or thrown by the rotor blades might harm the living creatures around or might damage the facilities and the equipment. Consequently, taking into consideration the climatic conditions, the turbine rotor blades should be equipped with active thermal sensors, if frost cannot be prevented the turbines should stop automatically. Under weather conditions with probability of frost, as long as not compulsory, there will be no activity around the turbines, warning signs will be posted.

Tress passing of strangers and non- authorized people in the wind turbine area will be strictly prohibited. All people working inside the turbine will wear protective equipment such as work clothes, climbing vest, special shoes, protective helmet, gloves, eyeglasses, earphones.

The maintenance of the wind turbines will be done regularly once at each 12 months. Accordingly, in order to prevent any probable damage to the turbine equipment during control, the climbing vest, safety cable protective equipments will be ready and the safety equipment will be stored in a dry environment.

The plan is to employ about 40 people for the construction period and 20 people for the operation period. Once the project is actualized, the employment of unskilled workers (if available, of skilled workers) from the regional people will be treated with priority.

Question (Member of the Province General Council)

"Will the transmission be subterranean? How will the passage route be handled? Is there any study related to this? Will the forests among the Erikli Muratdere - Camiyayla Villages vanish? Will ant permission be obtained from the Province Special Administration?"

Reply

The inter-turbine transmission will be subterranean. The inter-turbine route was established and is shown in the attached 1/25.000 Scale Topographic Map **(see Attachment 2.2.)**.

The expropriation of the forests in the Project area is out of question and the **"Forest Permit"** pursuant to Article 17 of the **"Forest Law**" number 6831 will be obtained from the Bilecik Forestry Regional Directorate. Actions will be compliant with Articles 17/3 and 18 of the Forest Law number 28976 dated April 18th, 2014.

Question (Muratdere Madencilik)

We are running mining activities in the area. What will happen to the poles in our exploitation permit area?

Reply

The Wind Energy Power Plant area will not be turned into an area closed to mining in the records of the General Directorate of Mining Affaires. The Bozüyük Wind Energy Power Plant Project number ER: 3281236 was registered as special permission area (**see Attachment 4.1**)

The mining area of Muratdere Madencilik with special operation permit is inside the power plant area. The turbine installation places in the project area were located in such a way that they will not disturb the zone of the mining company. Accordingly, as mentioned in the institutional opinion of the General Directorate of Mining Affairs (**see Attachment 4.1),** the power plant area was divided in two polygons, the mining area with operation permit remains between the two polygons. Turbines from 1 to 33 will be installed in the 1st Polygon and the turbines from 34 to 48 in the 2nd Polygon. There will be no interference in any way with the borders of the mining zone.

Question (Delielmacık Village)

What will be the height of the turbines? Will they be affected by lightening? Will there be any impact of livestock breeding?

Reply

There will be in total 48 turbines in the Wind Power Energy Plant Area. 40 of these 48 turbines will be each of 1,7 MWm/MWe installed power and 8 will be each of 2,75 MWm/MWe installed power GE Wind turbines. The selected hub height for the 1,7 MWm/MWe installed power turbines is 80 m, and the selected hub height for the 2,75 MWm/MWe installed power turbines is 85 m.

The installed wind turbines will be equipped with lightening protection systems in order to prevent electrical shocks, physical damages, effects of voltage fluctuations upon the electrical or mechanical equipments. Each rotor blade will have fixed internally the lightening protection equipment.

All the permits necessary within the project scope for the turbine locations in the agricultural zones **will be obtained pursuant to the "Soil Protection and Land Utilization Law number 5403**" enacted by its publication in the Official Gazette Number 25880 dated July 19th, 2005, after getting the Positive Environmental Impact Assessment document and before the construction start up.

Question (Muratdere Village Mukhtar)

How will the connection roads be? Will the present roads be enlarged?

Reply

The inter-turbine roads were established and are shown in the attached 1/25.000 Scale Topographic Map (see Attachment 2.2.).

Question (Muratdere Village)

To which extent does the noise mentioned in the project disturb the surroundings?

During the construction period there will be noise from the work machines and during the operation period from the turbines. The noise calculations are given in V.1.8 and V.2.8. The result of calculations proved that the noise values are within the limits foreseen b y the regulations.

Question (National Parks Chief)

There are wild animals in the region. Will the animals be impacted?

The Ecosystem Assessment Report was prepared within the project scope and is given attached (**see Attachment 5.1.)**

PART X: CONCLUSIONS

(A Summary of all explanations, a General Evaluation listing the important environmental impacts of the project and, in case of project actualization, mentioning to which degree it was successful in preventing the negative environmental impacts, the Selection among the alternatives within the project scope and the reasons of these selections)

The project subject activity consists of construction and operation of the "Bozüyük Wind Energy Power Plant" project in the Çamyayla, Muratdere, Delielmacık, Erikli locations of the Bozüyük sub- province, Bilecik Province.

There will be in total 48 turbines in the Wind Power Energy Plant Area. 40 of these 48 turbines will be each of 1,7 MWm/MWe installed power and 8 will be each of 2,75 MWm/MWe installed power GE WIND turbines. The selected hub height for the 1,7 MWm/MWe installed power turbines is 90 m and the selected hub height for the 2,75 MWm/MWe installed power turbines is 90 m.

The electric energy to be generated by the power plant will be 323.000.000 kwh per year. It is planned to transfer 154 Kv of this energy to the switchyard center by using the Seyitömer – Bozüyük Transformer Center EİH in- out connection. However, since the energy transfer line was not evaluated within the scope of this project, the necessary applications will be made pursuant to the Environmental Impact Assessment Law nr. 29186 dated November 25th 2014 (together with its amendment number 29619 dated February 9th, 2016, amendment number 30077 dated May 26th, 2017) and the permissions will be obtained.

The number of persons planned to work during the construction period within the project scope is 40, whereas during the operation period this number is about 20. It is planned to build 1 central prefabricated work site within the borders of the power plant in order to meet the social necessities of the personnel who will work on site during the construction period within the project scope. There will be one septic faucet built inside the site. During the operation period there will be 1 administrative building. Inside the administrative building there will be units such as toilets, rest rooms, cafeteria, etc.

The domestic waste waters created b y the personnel working during the construction and operation periods will be collected in a leakage free septic faucet and will be disposed by the sewage trucks against charge. The domestic solid wastes will be transported by the project owner after getting the require permissions, to then places deemed suitable by the Dodurga Municipality, in such a way that the environment will not be polluted regarding factors such as view, odor, leakage and similar ones.

The package wastes among the domestic solid wastes will be separately collected at source, stored for recycling/ retrieval purposes and then will be given to the municipalities responsible of their collection or to the recycling companies with environmental license contracted by the municipality.

Should the maintenance repair of the work machines and vehicles functioning in the facilities will be done in the project area, the waste storage batteries will be stored temporarily in their section in the waste area. The waste batteries will be collected in the TAP waste battery collection box. The waste expired tires will be stored temporarily in their section in he storage area and then will be delivered to the licensed recycling/ retrieval facilities.

Since the turbines need maintenance once per year, this will create some oil waste. These oils coming from the turbine maintenance will be collected temporarily in closed leak proof barrels to prevent pollution of the environment and these barrels will be taken by the licensed recycling/ disposal facilities.

The cafeteria services offered at the site will create the vegetal oil wastes that will be collected in bins/ tanks/ barrels labeled “Vegetal waste oils” and will be sent in licenses vehicles to environmentally licensed disposal/ recycling facilities.

Due to the fluorescent lights, photocopiers – printers, facsimiles working in the offices located in the administrative building within the borders of the power plant area, there will be residues such as cartridges, toner, etc.

Changing the fluorescent lamps in the units and offices will create hazardous wastes. The waste fluorescent bulbs will be collected in boxes so that they will not break, after having been stored temporarily in the waste area, the collected fluorescent bulbs will be transported by licensed transport companies to the environmentally licensed recycling/ retrieval facilities.

The printers in the company will also create waste. The waste cartridges and toners are classified as printer toners containing hazardous substances code 08 03 17 in Attachment IV of the Waste Management Regulations and will be regularly collected and stored temporarily in the waste area. The accumulated and temporarily stored wastes will be sent with licensed transport companies to the environmentally licensed recycling/ retrieval facilities.

The contaminated waste packaging materials will be regularly collected from the departments and will be stored temporarily in their section of the storage area. The temporarily stored wastes will be sent later on with licensed transport companies to the environmentally licensed recycling/ retrieval facilities.

During the construction period there will be the noise of the work machines in the from the land preparation stage until the construction is finished.

Within the project scope, preventive measures will have to be taken providing by suitable protective devices or apparatus such as helmets, ear flaps or ear buds to the workers to prevent the noise impact on them. Besides, the maintenance and repair of the work machines will be done periodically and in time. The defective parts will be replaced just in time.

There will be 48 turbines installed and operated within the scope of the Bozüyük Wind Power Energy Plant. There will be a systematic mechanical noise coming from systems such as fans, transmission boxes of the turbines during their functioning. Besides, aerodynamic noise will be created by the wind – rotor blade interaction.

The mechanical noise of the turbines will be decreased by many technical measures such as acoustic sheathing, special gear wheals, coating the rotating parts with sound absorbing materials. Besides, the blade tips will be equipped with wind catchers.

Besides, the continuous exposure of the personnel to this noise will be prevented. However, the machines will be kept continuously well maintained.

During the construction period the excavation excess material will be used totally for filling purposes when building the units, in case it will not be used, then it will be removed from the area within the scope of the Regulations for the Management of the Industrially Poluted Air. For this reason, there will be no excess excavation material stored in the area.

However, during the transportation of the excess solid material loading and unloading will be done without spreading the material around, the material will be covered with nylon backer or other material type made of pieces the size of which is not bigger than 10 mm. The upper layers should be kept at 10% humidity.

The internal roads of the facilities will be covered with concrete and will be regularly cleaned in order to prevent any potential negative impact upon the air quality.

The installed wind turbines will be equipped with lightening protection systems in order to prevent electrical shocks, physical damages, effects of voltage fluctuations, etc. upon the electrical or mechanical equipments. Each rotor blade will have fixed internally the lightening protection equipment.

Taking into consideration the climatic conditions, the turbine rotor blades should be equipped with active thermal sensors, if frost cannot be prevented the turbines should stop automatically

Tress passing of strangers and non- authorized people in the wind turbine area will be strictly prohibited. All people working inside the turbine will wear protective equipment such as work clothes, climbing vest, special shoes, protective helmet, gloves, eyeglasses, earphones.

The maintenance of the wind turbines will be done regularly once at each 12 months. Accordingly, in order to prevent any probable damage to the turbine equipment during control, the climbing vest, safety cable protective equipments will be ready and the safety equipment will be stored in a dry environment.

The work safety measures to take regarding the maintenance, repair and operation work, should be fixed by written procedures and records. The team members who work at the turbines, switchyard and electricity transmission lines must get a written permission from the concerned operation unit and its authorized staff.

Before starting the work, in order to prevent the energizing of the subject installation, the cutters and separators of each voltage must be on and measures should be taken to provide keeping this situation. After cutting the energy source of the installation or equipment to be worked on, it should be labeled and locked, the key of the locking equipment must be kept only by the responsible personnel, the posting places of the danger warning labels and cards should not be changed by anybody but the responsible personnel.

The visitors coming to the power plant should be informed about the dangers and risks of the work place, the work place safety rules should be explained, the necessary protective equipment must be given to them and then they should be permitted to enter the work place in the company of the work health and safety representative.

The failure, maintenance, repair and test works should be attended by minimum two persons.

All the work equipment utilized in the facilities will be inspected, maintained and repaired at the times indicated in the standards, if not, as foreseen by the producer; these inspections should be recorded on permanent basis.

The installations and devices should undergo periodic maintenance and repair, the maintenance periods should not exceed the periods stipulated in the national legislation, the executed maintenance and repairs should be recorded on permanent basis.

These turbines equipped with advanced technology are made of strong materials. For these reasons, accidents such as suddenly braking rotor blades, falling towers, have very low probability. Apart from this, since the closest settlement to turbines is at 300 m distance, the risk of human and material damage is low.

The grounding of the turbines and its control will be performed within the scope of the related regulations and the required measures will be implemented. The turbines will be appropriately illuminated in order to prevent the collision of the birds and air transportation means. The turbine blade tips will be painted in orange color against any possibility of collision with the rotor blades.

The Bozüyük Wind Power Energy Plant plans to utilize 48 GE wind turbines within its scope. The most significant factor in the selection of the wind power plant for generating electrical power was the utilization of our natural resources, as well as other the facts such as being much cleaner than the other electricity generating power plants, being a more reliable source of energy and greenhouse gas emissions being out of question.

ATTACHMENTS: (THE INFORMATION COLLECTED FROM VARIOUS SOURCES FOR PREPARING THIS DOCUMENT BUT WHICH WAS NOT PRESENTED IN THE REPO

Attachment 1 Coordinates of the location chosen for the project

1.1 Project place finding map

1.2 Coordinates

1.3 Place seeing

1.4 Environmental Impact Assessment Report Format

Attachment 2 If available, the Environmental plan, Land development plan, Layout plan or Plan Amendment Offers concerning the location chosen for the Project

2.1 1/100.000 scale Environmental plan, Plan legend and the relevant plan provisions

2.2 1/25.000 scale Topographic map

1/25.000 scale Topographic map showing the water resources

2.3 Layout plan

2.4 1/25.000 scale Geological map

1/25.000 scale Active fault map

1/500.000 scale Landslide map

2.5 1/100.000 scale Land Assets map

Attachment 3 Documents previously obtained from the authorities and which concern the Project

3.1 Environmental Impact Assessment not necessary decision document number 678-1139 dated June 19th, 2009

3.2 Production License

3.3 Production License Amendment Petition letter

3.4 Production License Amendment (EPDK)

3.5 Leak proof septic faucet plan

3.6 Term Plan

3.7 Attested Meteorological Bulletin

- The highest precipitation values observed in standard times
- Peak Situations

Attachment 4 Opinions of the Official Authorities

4.1 General Directorate of Mining Affairs

4.2 The 14th Regional Directorate of Highways

Highways General Directorate

4.3 State Railways Administration General Directorate Head of the Studies and Projects Office Itinerary Branch manager

4.4 Republic of Turkey Bilecik Governorship Province Directorate of Environment and Urbanization

4.5 Eskişehir Province Council Directorate of Cultural Assets Protection

4.6 Dodurga Municipality

4.7 General Directorate of Forests

4.8 Opinion of the Province Directorate of Food, Agriculture and Livestock

4.9 Bilecik Governorship Province Directorate of Disaster and Emergency

4.10 Institutional pinion of the Republic of Turkey Province Special Agency Administration

4.11 Minutes of the Public Participation Meeting

Attachment 5 Prepared Reports

Attachment 5.1 Ecosystem Assessment Report

Notary Attested Undertaking

Opinion number 134564 dated June 7th, 2018 of the General Directorate of Preservation of Nature and National Parks

Attachment 5.2 Landscape Restoration Plan

Attachment 5.3 Air Quality Modeling Report

1. 25.11.2014 tarih ve 29186 tayılı Resmi Gazete'de yayımlanarak yürürlüğe giren "Çevresel Etki Değerlendirmesi Yönetmeliği" (Değişik: 09.02.2016 tarih ve 29619 sayı, değişik 26.05.2017 tarih ve 30077 sayı)
2. 10.09.2014 tarih ve 29115 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren Çevre İzin ve Lisans Yönetmeliği (Değişik: 21.09.2016 tarih ve 29834 sayı)
3. 31.12.2004 tarih ve 25687 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren "Su Kirliliği Kontrolü Yönetmeliği" (Değişik: R.G. 13.02.2008 tarih ve 26786 sayı. Değişik: R.G. 30.03.2010 tarih ve 27537 sayı. Değişik: R.G. 24.04.2011 Tarih ve 27914 Sayı. Değişik: R.G: 25.03.2012 tarih ve 28244 sayı)
4. 10.03.1995 tarih ve 22223 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren" Su Ürünleri Yönetmeliği" (Değişik: RG. 10.03.2010 Tarih ve 27517 Sayı)
5. 1380 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren "Su Ürünleri Kanunu" (Değişik: R.G. Tarih 22.07.2003 Sayı 4650)
6. Proje kapsamında 7 Nisan 2012 tarihli ve 28257 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren "Yeraltı Sularının Kirlenmeye ve Bozulmaya Karşı Korunması Hakkında Yönetmelik (Değişik: 22.05.2015 tarih ve 29363 sayı)"
7. 167 Sayılı "Yeraltı Suları Hakkında Kanun"
8. 09.09.2006 tarih ve 26284 sayılı "Dere Yatakları ve Taşkınlar" adı İle yayımlanan 2006/27 Nolu Başbakanlık Genelgesi.
9. 17.05.2005 tarih ve 25818 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren "Sulak Alanların Korunması Yönetmeliği" (Değişik: R.G. 26.08.2010 Tarih ve 27684 Sayı)
10. 19/07/2005 tarih ve 25880 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren 5403 sayılı "Toprak Koruma ve Arazi Kullanımı Kanunu" (Değişik: R.G. 09.02.2007 sarih ve 26429 sayı. Değişik: R.G. 02.04.2008 Tarih ve 26835 Sayı)
11. 4342 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren "Mera Kanunu" (Değişik: R.G. 02.04.2008 tarih ve 26835 sayı)
12. 02.04.2015 tarih ve 29314 sayılı "Atık Yönetimi Yönetmeliği" (Değişik: 23.03.2017 tarih ve 30016 sayı)
13. 27.12.2017 tarih ve 30283 sayılı "Ambalaj Atıklarının Kontrolü Yönetmeliği"
14. 18.03.2004 tarih ve 25406 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren "Hafriyat Toprağı. İnşaat ve Yıkıntı Atıkların Kontrolü Yönetmeliği"
15. 08.06.2010 tarih ve 27605 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren "Toprak Kirliliğinin Kontrolü ve Noktasal Kaynaklı Kirlenmiş Sahalara Dair Yönetmelik"
16. 30.07.2008 tarih ve 26952 sayılı Resmi Gazete'de yayımlanan "Atık Yağların Kontrolü Yönetmeliği" (değişik: 31.07.2009 tarih ve 27305 sayı, değişik: 30.03.2010 tarih ve 27537 sayı, değişik: 05.11.2013 tarih ve 28812 sayı)
17. 06.06.2015 tarih ve 29378 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren "Bitkisel Atık Yağların Kontrolü Yönetmeliği"
18. 25.11.2006 tarih ve 26357 sayılı Resmi Gazete'de yayımlanan "Ömrünü Tamamlamış Lastiklerin Kontrolü Yönetmeliği" (Değişik: 30.03.2010 tarih ve 27537 sayı, Değişik: 10.11.2013 tarih ve 28817 sayı, Değişik: 11.03.2015 tarih ve 29292 sayı)
19. 31.08.2004 tarih ve 25569 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren "Atık Pil ve Aküмülatörlerin Kontrolü Yönetmeliği" (Değişik: 03.03.2005 tarih ve 25744 sayı, Değişik: 31.07.2009 tarih ve 27305 sayı, Değişik: 30.03.2010 tarih ve

27537 sayı, Değişik: 05.11.2013 tarih ve 28812 sayı, Değişik: 23.12.2014 tarih v 29214 sayı)
20. 25.01.2017 tarih 29959 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren "Tıbl Atıkların Kontrolü Yönetmeliği
21. 04.06.2010 tarih ve 27601 sayılı Resmi Gazete'de yayımlanarak yürürlüğe gire "Çevresel Gürültünün Değerlendirilmesi ve Yönetimi Yönetmeliği (Değişil 27.04.2011 Tarih ve 27917 Sayı)"
22. 03.07.2009 tarih ve 27277 tayılı Sanayi Kaynaklı Hava Kirliliğinin Kontro Yönetmeliği (Değişik: R.G. 30.03.2010 Tarih ve 27537 Sayı. Değişik: R.G 10.10.2011 Tarih ve 28080 Sayı)
23. 06.06.2008 tarih ve 26898 sayılı Resmi Gazete'de yayımlanarak yürürlüğe gire "Hava Kalitesi Değerlendirme ve Yönetimi Yönetmeliği (05.05.2009 Tarih 2721 Sayılı Hava Kalitesi Değerlendirme ve Yönetimi Yönetmeliği'nde Değişikl Yapılmasına Dair Yönetmelik)
24. 04.04.2009 tarih ve 27190 sayılı Resmi Gazete'de yayımlanarak yürürlüğe gire "Egzoz Gazı Emisyonu Kontrolü Yönetmeliği"
25. 26/12/2008 tarihli ve 27092 mükerrer sayılı Resmî Gazete'de yayımlanan, "Zarar Madde ve Karışımların Kısıtlanması ve Yasaklanması Hakkında Yönetmelik"
26. 13.12.2014 tarih ve 29204 sayılı Resmi Gazete'de yayımlanarak yürürlüğe gire "Zararlı Maddeler ve Karışımlara İlişkin Güvenlik Bilgi Formları Hakkınc Yönetmelik"
27. 10 Ağustos 2005 Tarih ve 25902 Sayılı Resmi Gazete'de Yayımlanarak Yürürlüğ giren İşyeri Açma ve Çalışma Ruhsatlarına İlişkin Yönetmelik (Değişik: R.G 12.04.2007 tarih ve 26492 sayı. değişik: R.G. 25.06.2010 tarih ve 27652 say Değişik: R.G. 03.07.2011 tarih ve 27983 sayı. değişik: R.G. 16/8/2011 tarih ve 2803 sayı. değişik: 05.04.2012 tarih ve 28255 sayı)
28. 3194 sayılı İmar Kanunu
29. 2942 Sayılı Kamulaştırma Kanunu (Değişik: R.G. 5 Mayıs 2001 Tarih ve 4650 Sayı)
30. 4857 Sayılı İş Kanunu
31. Doç. Dr. Müezzinoğlu A.. Hava Kirliliğinin Ve Kontrolünün Esasları.1987 Karpuzc M. 1991:Çevre Kirlenmesi Ve Kontrolü. İstanbul
32. Çevre ve Şehircilik Bakanlığı Milli Parklar ve Av-Yaban Hayatı Genel Müdürlüğ 2017-2018 Av Dönemi Merkez Av Komisyonu Kararı
33. Bayındırlık ve İskan Bakanlığı Afet İşleri Genel Müdürlüğü Deprem Araştırm Dairesi Başkanlığı. 1996; Türkiye Deprem Bölgeleri Haritası. Ankara
34. Atalay.İ..1994.Türkiye Vejetasyon Coğrafyası - Vegetation Geography Of Turkey
35. Davis.P.H. Flora Of Turkey And The East Aegean Islands. Vol.1-10.Edinburg(196: 1988)
36. Orman Ve Su İşleri Bakanlığı Doğa Koruma Ve Milli Parklar Genel Müdürlüğ 2013-2014 Av Dönemi Merkez Av Komisyonu Kararı
37. Türkiye'nin Önemli Doğa Alanları Kitabı. Ankara. 2006
38. Su Temini ve Atıksu Uzaklaştırılması Uygulamaları İTÜ 1998. Prof. Dr.Dinç Topacık. Prof. Dr. Veysel Eroğlu
39. http://geodata.ormansu.gov.tr
40. www.deprem.gov.tr
41. www.tüik.gov.tr
42. www.mta.gov.tr
43. www.yerelnet.org.tr
44. www.earthgoogle.com
45. www.dsi.gov.tr

PRESENTATION OF THE PERSONS WHO PREPARED THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT (NAME, SURNAME, CURRICULUM VITAE RESUME OF MAXIMUM 1 PAGE FOR ONE PERSON, THEIR REFERENCES AND THE SIGNATURE MENTIONING THE RESPONSIBILITY FOR REPORT) (/ IN THE MEETING FOR ACKNOWLEDGEMENT AND DEFINITION OF THE SCOPE AND SPECIAL FORMAT, IN ADDITION TO THE PROFESSIONAL GROUP TO PREPARE THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT, THE COMMISSION DECIDED TO HAVE ALSO AN AGRONOMY ENGINEER, AFORESTRY ENGINEER AND A BIOLOGIST. THE CURRICULUM VITAE AND NOTARY ATTESTED DIPLOMA, SIGNATURE CIRCULAR ARE ATTACHED TO THE COVER LETTER.

CHART OF THE PERSONNEL APPOINTED TO PREPARE THE FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Attachment 1 Coordinates of the location chosen for the project

1.1 Project place finding map
1.2 Coordinates
1.3 Place seeing
1.4 Environmental Impact Assessment Report Format

Attachment 2 If available, the Environmental plan, Land development plan, Layout plan or Plan Amendment Offers concerning the location chosen for the Project

2.1 1/100.000 scale Environmental plan, Plan legend and the relevant plan provisions
2.2 1/25.000 scale Topographic map
1/25.000 scale Topographic map showing the water resources
2.3 Layout plan
2.4 1/25.000 scale Geological map
1/25.000 scale Active fault map
1/500.000 scale Landslide map
2.5 1/100.000 scale Land Assets map

Attachment 3 Documents previously obtained from the authorities and which concern the Project

3.1 Environmental Impact Assessment not necessary decision document number 678-1139 dated June 19th, 2009
3.2 Production License
3.3 Production License Amendment Application Letter
3.4 Production License Amendment (EPDK)
3.5 Leak proof septic faucet plan
3.6 Term Plan
3.7 Attested Meteorological Bulletin
- The highest precipitation values observed in standard times
- Peak Situations

Attachment 4 Opinions of the Official Authorities

4.1 General Directorate of Mining Affairs
4.2 The 14th Regional Directorate of Highways
Highways General Directorate
4.3 State Railways Administration General Directorate Head of the Studies and Projects Office Itinerary Branch manager
4.4 Republic of Turkey Bilecik Governorship Province Directorate of Environment and Urbanization
4.5 Eskişehir Province Council Directorate of Cultural Assets Protection
4.6 Dodurga Municipality
4.7 General Directorate of Forests
4.8 Opinion of the Province Directorate of Food, Agriculture and Livestock
4.9 Bilecik Governorship Province Directorate of Disaster and Emergency
4.10 Institutional pinion of the Republic of Turkey Province Special Agency Administration
4.11 Minutes of the Public Participation Meeting

Attachment 5 Prepared Reports

Attachment 5.1 Ecosystem Assessment Report
Notary Attested Undertaking
Opinion number 134564 dated June 7th, 2018 of the General Directorate of Preservation of Nature and National Parks
Attachment 5.2 Landscape Restoration Plan
Attachment 5.3 Air Quality Modeling Report

ATTACHMENTS

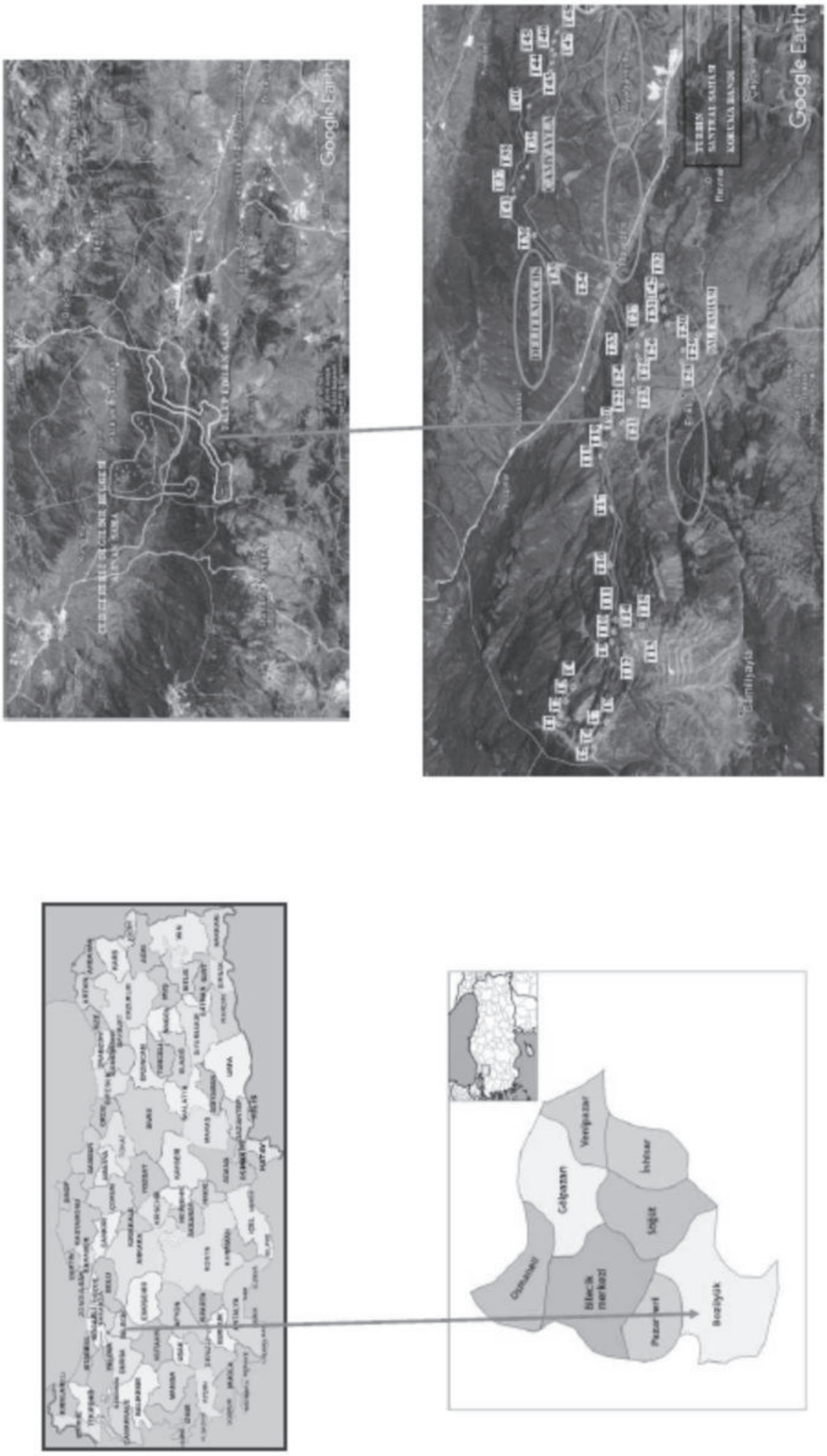
ATTACHMENT 1

COORDINATES OF THE LOCATION CHOSEN FOR THE PROJECT

1.1 Project place finding map
1.2 Coordinates
1.3 Place seeing
1.4 Environmental Impact Assessment Report Format

ATTACHMENT 1.1

PROJECT PLACE FINDING MAP



ATTACHMENT 1.2

COORDINATES

Coordinate sequence: Towards right Upwards **Datum** : ED-50

Type : UTM **D.O.M.** : 27

Scaling factor : 6 degrees **Zone** : 35

PLANT AREA

PLANT AREA	TOWARDS RIGHT (Y)	UPWARDS (X)

COORDINATES OF THE PLACE SELECTED FOR THE PROJECT

SANTRAL SAHASI	SAĞA (Y)	YUKARI (X)
1	753373.979	4425761.726
2	753557.310	4425712.602
3	753726.332	4425719.654
4	753948.292	4425660.180
5	754135.178	4425473.294
6	754203.584	4425218.003
7	754135.178	4424962.711
8	753948.292	4424775.825
9	753826.576	4424743.211
10	753721.024	4424664.109
11	753396.966	4424339.896
12	753230.292	4424173.222
13	753076.172	4424131.926
14	752768.321	4423840.046
15	752531.292	4423603.017
16	752126.001	4423494.420
17	751878.553	4423560.723
18	749788.257	4422963.722
19	749383.235	4422855.196
20	748957.363	4422969.309
21	748436.737	4423202.908
22	748330.918	4423231.262
23	747905.557	4422664.014
24	747880.399	4422570.022
25	747801.123	4422490.702
26	747307.527	4421585.967
27	747276.647	4421470.593
28	747245.081	4421439.010
29	747161.766	4420379.615
30	747188.635	4420279.448
31	747145.163	4420117.031
32	746772.472	4419086.744
33	746735.641	4418949.139
34	746665.053	4418878.513
35	746237.939	4417921.209
36	746301.309	4417874.495
37	746419.496	4417842.827
38	746944.263	4417487.215
39	747107.797	4417636.355
40	747250.619	4417779.177
41	747530.028	4417854.044
42	747809.438	4417779.177
43	748013.980	4417574.635
44	748088.847	4417295.225
45	748013.980	4417015.816
46	747848.340	4416850.176
47	747551.282	4416639.589
48	747546.620	4416562.623
49	747462.435	4416248.440
50	747047.174	4415491.248
51	746722.115	4415166.190
52	746241.823	4415037.496

53	745807.538	4415153.862
54	745532.546	4415296.785
55	745278.267	4415551.045
56	745200.218	4415842.284
57	744964.213	4416508.382
58	744855.786	4416586.313
59	744783.927	4416569.023
60	744610.001	4416522.420
61	744493.640	4416553.598
62	743881.164	4416457.871
63	743719.001	4416414.420
64	743535.620	4416463.556
65	743276.699	4416544.041
66	743229.744	4416556.608
67	742904.023	4416597.955
68	742810.424	4416623.035
69	742677.605	4416633.998
70	741828.931	4416030.036
71	741816.689	4415984.296
72	741650.086	4415817.602
73	741532.192	4415785.978
74	740409.804	4415197.788
75	740332.400	4415120.342
76	740245.233	4415096.960
77	739633.705	4414593.184
78	739825.613	4414174.484
79	739935.192	4414064.905
80	740010.060	4413785.496
81	739935.192	4413506.086
82	739730.650	4413301.544
83	739497.187	4413238.988
84	738759.552	4413206.597
85	738574.992	4413256.049
86	738201.551	4413401.223
87	738144.772	4413416.437
88	736824.481	4413297.014
89	736771.292	4413243.825
90	736541.870	4413182.351
91	736250.870	4413209.146
92	736152.886	4413182.892
93	735925.891	4413200.707
94	735798.005	4413166.440
95	735620.538	4413213.992
96	735402.533	4413272.119
97	735284.180	4413303.831
98	735140.829	4413447.182
99	735106.185	4413576.477
100	734843.815	4414977.800
101	734929.392	4415297.176
102	735171.827	4415539.612
103	735503.001	4415628.349
104	735768.701	4415557.155
105	735930.819	4415498.755
106	735996.197	4415481.237
107	736448.151	4415506.969
108	736596.001	4415546.585
109	736851.292	4415478.180
110	736908.985	4415420.487
111	738110.150	4415265.895
112	738405.592	4415345.058
113	738772.183	4415246.831
114	739110.417	4415120.301

115	739691.970	4415673.664
116	739710.290	4415742.112
117	739876.893	4415908.805
118	740001.007	4415942.098
119	741023.825	4416423.864
120	741027.976	4416439.372
121	741194.579	4416606.066
122	741409.568	4416663.735
123	742126.328	4417305.878
124	742150.823	4417397.294
125	742337.709	4417584.180
126	742593.001	4417652.585
127	742773.603	4417604.193
128	742865.178	4417577.642
129	742962.001	4417603.585
130	743217.292	4417535.180
131	743295.623	4417456.849
132	743444.141	4417409.740
133	743475.035	4417401.471
134	743582.775	4417399.084
135	743719.001	4417435.585
136	743974.292	4417367.180
137	744001.053	4417340.420
138	744027.686	4417343.653
139	744064.247	4417380.234
140	744203.908	4417417.697
141	744421.986	4417493.207
142	744500.102	4417514.138
143	744524.409	4417526.901
144	744575.173	4417577.664
145	744757.728	4417789.363
146	745060.315	4418091.950
147	745335.093	4418165.577
148	745915.201	4419285.675
149	745946.928	4419404.215
150	746010.776	4419468.098
151	746293.361	4420222.128
152	746278.052	4420279.198
153	746312.565	4420408.145
154	746452.346	4421603.514
155	746426.999	4421698.006
156	746487.934	4421925.668
157	746567.210	4422004.988
158	747060.806	4422909.723
159	747075.043	4422962.915
160	747717.655	4424628.688
161	748057.318	4424968.351
162	748537.610	4425097.045
163	749017.901	4424968.351
164	749222.887	4424763.366
165	749420.478	4424766.383
166	749669.845	4424699.565
167	750541.339	4425175.617
168	750750.709	4425384.988
169	751156.001	4425493.585
170	751561.292	4425384.988
171	751781.081	4425165.199
172	751931.005	4425063.336
173	752126.001	4425115.585
174	752358.058	4425053.406
175	752497.161	4425108.234
176	752557.620	4425168.694

TURBINE INSTALLATION AREAS	TOWARDS RIGHT (Y)	UPWARDS (X)
177	752708.905	4425335.740
178	752795.088	4425421.923
179	752909.769	4425521.005
180	753068.687	4425679.923

TÜRBİN OTURUM ALANLARI	SAĞA (Y)	YUKARI (X)
T1/1	735444.619	4415020.597
T1/2	735557.587	4415024.391
T1/3	735561.380	4414911.422
T1/4	735448.412	4414907.629
T2/1	735782.619	4415018.597
T2/2	735895.587	4415022.391
T2/3	735899.381	4414909.422
T2/4	735786.412	4414905.629
T3/1	736148.618	4415064.597
T3/2	736261.587	4415068.391
T3/3	736265.381	4414955.422
T3/4	736152.412	4414951.629
T4/1	736537.618	4415090.598
T4/2	736650.587	4415094.391
T4/3	736654.381	4414981.422
T4/4	736541.412	4414977.628
T5/1	735421.619	4413697.598
T5/2	735534.588	4413701.390
T5/3	735538.380	4413588.422
T5/4	735425.412	4413584.629
T6/1	735739.624	4413731.618
T6/2	735852.593	4413735.410
T6/3	735856.385	4413622.442
T6/4	735743.416	4413618.649
T7/1	736066.619	4413740.598
T7/2	736179.588	4413744.390
T7/3	736183.380	4413631.421
T7/4	736070.411	4413627.629
T8/1	736457.619	4413740.598
T8/2	736570.588	4413744.390
T8/3	736574.380	4413631.421
T8/4	736461.411	4413627.629
T9/1	738347.210	4414539.071
T9/2	738460.180	4414542.864
T9/3	738463.973	4414429.894
T9/4	738351.003	4414426.101
T10/1	738661.424	4414584.289
T10/2	738774.394	4414588.083
T10/3	738778.188	4414475.112
T10/4	738665.217	4414471.319
T11/1	739008.618	4414622.599
T11/2	739121.589	4414626.392
T11/3	739125.382	4414513.421
T11/4	739012.411	4414509.628
T12/1	738236.618	4413989.599
T12/2	738349.588	4413993.391
T12/3	738353.381	4413880.421
T12/4	738240.411	4413876.628
T13/1	738734.177	4413811.168
T13/2	738847.148	4413814.960
T13/3	738850.940	4413701.990
T13/4	738737.970	4413698.197
T14/1	738975.761	4413998.438

T14/2	739088.732	4414002.230
T14/3	739092.524	4413889.260
T14/4	738979.554	4413885.467
T15/1	739392.858	4413840.092
T15/2	739505.829	4413843.885
T15/3	739509.622	4413730.913
T15/4	739396.650	4413727.121
T16/1	740037.480	4415577.382
T16/2	740167.447	4415581.747
T16/3	740171.812	4415451.779
T16/4	740041.844	4415447.415
T17/1	741355.165	4416274.642
T17/2	741485.133	4416279.008
T17/3	741489.498	4416149.039
T17/4	741359.530	4416144.674
T18/1	742534.615	4417196.599
T18/2	742647.589	4417200.394
T18/3	742651.384	4417087.420
T18/4	742538.411	4417083.625
T19/1	742903.615	4417147.599
T19/2	743016.589	4417151.394
T19/3	743020.384	4417038.420
T19/4	742907.410	4417034.625
T20/1	743301.615	4417031.599
T20/2	743414.589	4417035.394
T20/3	743418.384	4416922.420
T20/4	743305.410	4416918.625
T21/1	743660.615	4416979.599
T21/2	743773.589	4416983.394
T21/3	743777.384	4416870.420
T21/4	743664.410	4416866.625
T22/1	744233.615	4417040.599
T22/2	744346.590	4417044.394
T22/3	744350.385	4416931.420
T22/4	744237.410	4416927.625
T23/1	744551.615	4417087.600
T23/2	744664.590	4417091.395
T23/3	744668.385	4416978.420
T23/4	744555.410	4416974.625
T24/1	744860.867	4417212.980
T24/2	744973.842	4417216.775
T24/3	744977.637	4417103.800
T24/4	744864.662	4417100.005
T25/1	745482.220	4417314.659
T25/2	745595.196	4417318.454
T25/3	745598.991	4417205.479
T25/4	745486.016	4417201.683
T26/1	745771.262	4417407.354
T26/2	745884.238	4417411.149
T26/3	745888.033	4417298.173
T26/4	745775.058	4417294.378
T27/1	746110.532	4417405.747
T27/2	746223.508	4417409.542
T27/3	746227.303	4417296.566
T27/4	746114.327	4417292.771
T28/1	745880.297	4415985.958
T28/2	745993.273	4415989.753
T28/3	745997.067	4415876.777
T28/4	745884.091	4415872.983
T29/1	746183.438	4416052.676
T29/2	746296.414	4416056.471
T29/3	746300.208	4415943.495

T29/4	746187.232	4415939.701
T30/1	746690.614	4416665.600
T30/2	746803.591	4416669.395
T30/3	746807.385	4416556.419
T30/4	746694.409	4416552.624
T31/1	746987.154	4416979.917
T31/2	747100.131	4416983.712
T31/3	747103.926	4416870.736
T31/4	746990.949	4416866.941
T32/1	747535.801	4417351.493
T32/2	747648.777	4417355.288
T32/3	747652.573	4417242.311
T32/4	747539.596	4417238.516
T33/1	745584.986	4417846.305
T33/2	745714.958	4417850.671
T33/3	745719.324	4417720.699
T33/4	745589.352	4417716.333
T34/1	746666.172	4420342.133
T34/2	746796.145	4420346.501
T34/3	746800.513	4420216.529
T34/4	746670.541	4420212.160
T35/1	746815.118	4421760.942
T35/2	746945.091	4421765.312
T35/3	746949.461	4421635.339
T35/4	746819.488	4421630.969
T36/1	747418.870	4422860.368
T36/2	747548.843	4422864.739
T36/3	747553.214	4422734.765
T36/4	747423.241	4422730.395
T37/1	748501.326	4424295.098
T37/2	748614.303	4424298.899
T37/3	748618.104	4424185.921
T37/4	748505.126	4424182.121
T38/1	748954.862	4423982.261
T38/2	749067.840	4423986.061
T38/3	749071.640	4423873.083
T38/4	748958.662	4423869.283
T39/1	749324.846	4423870.378
T39/2	749437.824	4423874.178
T39/3	749441.624	4423761.200
T39/4	749328.646	4423757.400
T40/1	751097.610	4424737.599
T40/2	751210.589	4424741.400
T40/3	751214.390	4424628.420
T40/4	751101.411	4424624.620
T41/1	748273.768	4424098.285
T41/2	748386.745	4424102.085
T41/3	748390.546	4423989.108
T41/4	748277.568	4423985.308
T42/1	747256.273	4417180.688
T42/2	747369.250	4417184.483
T42/3	747373.045	4417071.507
T42/4	747260.069	4417067.711
T43/1	752329.729	4424495.645
T43/2	752442.709	4424499.445
T43/3	752446.509	4424386.465
T43/4	752333.529	4424382.664
T44/1	752603.609	4424654.600
T44/2	752716.590	4424658.400
T44/3	752720.390	4424545.420
T44/4	752607.410	4424541.619
T45/1	752866.609	4424756.600

TURBINE INSTALLATION AREAS	TOWARDS RIGHT (Y)	UPWARDS (X)
T45/2	752979.590	4424760.400
T45/3	752983.391	4424647.420
T45/4	752870.410	4424643.619
T46/1	753041.099	4425083.454
T46/2	753154.080	4425087.255
T46/3	753157.881	4424974.274
T46/4	753044.900	4424970.473
T47/1	753306.802	4425213.952
T47/2	753436.780	4425218.325
T47/3	753441.153	4425088.347
T47/4	753311.175	4425083.974
T48/1	753625.824	4425280.812
T48/2	753755.803	4425285.185
T48/3	753760.175	4425155.207
T48/4	753630.197	4425150.834

TÜRBİN NOKTALARI	SAĞA (Y)	YUKARI (X)
T1	735503.000	4414966.000
T2	735841.000	4414964.000
T3	736207.000	4415010.000
T4	736596.000	4415036.000
T5	735480.000	4413643.000
T6	735798.005	4413677.020
T7	736125.000	4413686.000
T8	736516.000	4413686.000
T9	738405.592	4414484.473
T10	738719.806	4414529.691
T11	739067.000	4414568.000
T12	738295.000	4413935.000
T13	738792.559	4413756.569
T14	739451.240	4413785.493
T15	740104.646	4415514.571
T16	741422.332	4416211.831
T17	742593.000	4417142.000
T18	742962.000	4417093.000
T19	743360.000	4416977.000
T20	743719.000	4416925.000
T21	744292.000	4416986.000
T22	744610.000	4417033.000
T23	744919.252	4417158.380
T24	745540.606	4417260.059
T25	745829.648	4417352.754
T26	746168.918	4417351.147
T27	745938.682	4415931.358
T28	746241.823	4415998.076
T29	746749.000	4416611.000
T30	747045.540	4416925.317
T30	747594.187	4417296.892
T31	745652.155	4417783.492
T32	746733.343	4420279.321
T33	746882.290	4421698.131
T34	747486.042	4422797.557
T35	748559.715	4424240.500
T36	749013.252	4423927.662
T37	749383.235	4423815.779
T38	751156.000	4424683.000
T39	748332.157	4424043.687
T40	747314.660	4417126.088
T41	752388.119	4424441.045

T42	752662.000	4424600.000
T43	752925.000	4424702.000
T44	753099.490	4425028.854
T45	753373.978	4425151.140
T46	753693.000	4425218.000
T47	735503.000	4414966.000
T48	735841.000	4414964.000

SALT SAHASI	SAĞA (Y)	YUKARI (X)
S1	746723.401	4415824.452
S2	746823.401	4415824.452
S3	746823.401	4415724.452
S4	746723.401	4415724.452
SM	746773.401	4415774.452

YOL

YOL	SAĞA (Y)	YUKARI (X)
YK1	753690.910	4425223.129
YK2	753695.075	4425216.299
YK3	753614.139	4425176.318
YK4	753616.966	4425168.672
YK5	753545.834	4425165.241
YK6	753545.839	4425157.241
YK7	753433.055	4425165.175
YK8	753433.571	4425157.176
YK9	753371.527	4425157.236
YK10	753375.021	4425149.621
YK11	753239.237	4425038.367
YK12	753243.571	4425031.506
YK13	753174.895	4425011.558
YK14	753174.988	4425002.930
YK15	753098.714	4425041.383
YK16	753098.512	4425032.871
YK17	753024.882	4425016.460
YK18	753028.479	4425009.231
YK19	752911.063	4424938.953
YK20	752916.647	4424933.077
YK21	752834.993	4424838.679
YK22	752845.013	4424838.651
YK23	752863.234	4424801.024
YK24	752884.615	4424785.787
YK25	752869.782	4424781.578
YK26	752877.782	4424781.627
YK27	752930.604	4424710.265
YK28	752924.546	4424704.832
YK29	752973.400	4424677.344
YK30	752965.400	4424673.405
YK31	752965.400	4424594.683
YK32	752973.400	4424591.753
YK33	752900.977	4424506.162
YK34	752896.441	4424513.186
YK35	752819.780	4424491.283
YK36	752831.846	4424486.410
YK37	752859.373	4424422.895
YK38	752868.057	4424423.862
YK39	752850.429	4424369.892
YK40	752844.483	4424375.244
YK41	752781.579	4424305.351

SWITCHYARD AREA TOWARDS RIGHT (Y) UPWARDS (X)

S1	746723.401	4415824.452
S2	746823.401	4415824.452
S3	746823.401	4415724.452
S4	746723.401	4415724.452
SM	746773.401	4415774.452

YOL = ROAD

YK42	752792.342	4424305.351
YK43	752844.413	4424235.535
YK44	752851.597	4424239.512
YK45	752868.998	4424149.488
YK46	752877.933	4424147.336
YK49	752831.846	4424097.957
YK50	752827.729	4424105.271
YK51	752673.442	4424064.995
YK52	752672.582	4424072.949
YK53	752545.931	4424059.257
YK54	752552.028	4424051.869
YK55	752538.860	4424009.073
YK56	752532.951	4424017.073
YK57	752491.015	4424017.073
YK58	752492.772	4424009.073
YK59	752449.976	4423989.322
YK60	752437.980	4423992.596
YK61	752470.330	4423945.867
YK62	752479.604	4423946.526
YK63	752425.448	4423856.103
YK64	752436.809	4423860.935
YK65	752489.480	4423844.475
YK66	752485.111	4423837.459
YK67	752546.228	4423773.125
YK68	752552.028	4423778.635
YK69	752878.184	4424715.894
YK70	752870.176	4424717.168
YK71	752854.935	4424671.446
YK72	752860.654	4424663.304
YK73	752776.903	4424665.347
YK74	752776.827	4424673.351
YK75	752689.193	4424669.541
YK76	752695.042	4424661.788
YK77	752672.587	4424594.425
YK78	752666.332	4424600.958
YK79	752600.848	4424573.928
YK80	752599.655	4424581.908
YK81	752498.987	4424572.042
YK82	752496.780	4424580.002
YK83	752433.913	4424543.806
YK84	752440.020	4424538.091
YK85	752390.592	4424437.334
YK86	752385.134	4424444.371
YK87	751160.234	4424630.320
YK88	751168.227	4424629.995
YK89	751164.413	4424536.214
YK90	751156.610	4424541.213
YK91	751128.163	4424517.709
YK92	751128.287	4424526.754
YK93	751066.458	4424551.366
YK94	751066.458	4424559.366
YK95	751022.194	4424559.366
YK96	751025.873	4424551.366
YK97	750975.349	4424492.421
YK98	750970.670	4424499.256
YK99	750749.910	4424421.545
YK100	750756.581	4424415.412
YK101	750679.406	4424150.493
YK102	750686.415	4424145.659
YK103	750582.009	4424071.475
YK104	750577.536	4424078.111
YK105	750286.147	4423882.452

YK106	750280.749	4423888.357
YK107	750184.809	4423800.469
YK108	750191.167	4423795.614
YK109	750072.801	4423640.611
YK110	750070.023	4423650.154
YK111	749935.601	4423699.534
YK112	749931.595	4423692.483
YK113	749828.816	4423775.817
YK114	749834.098	4423781.833
YK115	749779.139	4423834.044
YK116	749776.577	4423825.444
YK117	749598.265	4423801.019
YK118	749598.230	4423792.880
YK119	749468.220	4423825.661
YK120	749468.735	4423817.677
YK121	749380.811	4423812.005
YK122	749384.195	4423820.240
YK123	749315.919	4423894.897
YK124	749314.042	4423887.121
YK125	749238.799	4423913.512
YK126	749235.569	4423906.062
YK129	749142.783	4423976.608
YK130	749141.767	4423967.704
YK131	749016.591	4423929.972
YK132	749011.853	4423919.692
YK133	748976.520	4424035.593
YK134	748971.425	4424029.426
YK135	748912.780	4424086.629
YK136	748911.787	4424078.691
YK137	748849.249	4424094.571
YK138	748850.525	4424086.349
YK139	748777.923	4424061.651
YK140	748779.208	4424053.433
YK141	748620.569	4424080.914
YK142	748620.579	4424072.914
YK143	748566.684	4424080.849
YK144	748571.055	4424072.854
YK145	748541.998	4424042.448
YK146	748546.250	4424034.268
YK147	748406.977	4424047.869
YK148	748407.851	4424039.917
YK149	748332.209	4424038.680
YK150	748336.758	4424032.099
YK151	748282.110	4424004.053
YK152	748284.769	4423996.166
YK153	748224.053	4424001.414
YK154	748230.467	4423993.698
YK155	748192.767	4423832.125
YK156	748185.655	4423836.855
YK157	748082.014	4423752.027
YK158	748079.153	4423759.830
YK159	748011.117	4423746.573
YK160	748009.651	4423754.437
YK161	747846.549	4423722.843
YK162	747851.890	4423716.886
YK163	747768.052	4423650.694
YK164	747775.789	4423648.658
YK165	747741.230	4423548.768
YK166	747750.508	4423552.591
YK167	747797.640	4423524.867
YK168	747787.809	4423521.368
YK169	747768.745	4423447.009

YK170	747761.876	4423451.491
YK171	747672.121	4423362.647
YK172	747679.923	4423360.878
YK173	747626.034	4423158.383
YK174	747634.034	4423158.424
YK175	747634.606	4423046.773
YK176	747626.589	4423049.906
YK177	747485.861	4422887.211
YK178	747477.872	4422890.373
YK179	747477.587	4422809.247
YK180	747485.587	4422809.219
YK181	747482.893	4422801.687
YK182	747567.694	4422779.850
YK183	747562.817	4422773.098
YK184	747609.017	4422713.963
YK185	747617.207	4422716.474
YK186	747611.018	4422625.695
YK187	747603.302	4422630.139
YK188	747457.215	4422521.879
YK189	747450.896	4422527.265
YK190	747376.616	4422367.279
YK191	747384.813	4422365.935
YK192	747402.525	4422205.028
YK193	747394.275	4422206.859
YK194	747358.056	4422131.896
YK195	747352.181	4422137.631
YK196	747257.340	4422067.285
YK197	747252.528	4422073.676
YK198	747103.577	4421951.488
YK199	747098.172	4421957.386
YK200	746967.590	4421826.834
YK201	746960.705	4421830.907
YK202	746882.343	4421682.734
YK203	746876.514	4421688.593
YK204	746761.615	4421612.155
YK205	746754.475	4421617.247
YK206	746744.784	4421557.377
YK207	746751.522	4421561.690
YK208	746781.741	4421514.473
YK209	746773.526	4421512.468
YK210	746769.724	4421470.642
YK211	746777.900	4421472.220
YK212	746806.272	4421416.644
YK213	746798.133	4421414.991
YK214	746788.767	4421283.859
YK215	746796.540	4421280.391
YK216	746742.413	4421224.332
YK217	746734.876	4421227.015
YK218	746713.306	4421166.422
YK219	746720.276	4421162.147
YK220	746686.215	4421126.193
YK221	746679.968	4421131.191
YK222	746619.215	4421055.249
YK223	746627.215	4421052.443
YK224	746627.215	4421025.545
YK225	746619.215	4421028.578
YK226	746564.198	4420954.396
YK227	746560.157	4420961.900
YK228	746505.149	4420952.606
YK229	746510.586	4420946.738
YK230	746483.506	4420921.648
YK231	746479.770	4420929.092

YK232	746429.918	4420919.720
YK233	746432.801	4420912.258
YK234	746351.551	4420880.866
YK235	746348.668	4420888.329
YK236	746312.497	4420847.596
YK237	746317.212	4420840.804
YK238	746253.978	4420825.025
YK239	746260.085	4420819.857
YK240	746218.261	4420770.429
YK241	746213.455	4420777.133
YK242	746093.260	4420729.755
YK243	746094.261	4420721.551
YK244	745956.783	4420739.881
YK245	745952.438	4420748.532
YK246	745885.509	4420627.660
YK247	745893.184	4420625.403
YK248	745866.709	4420563.739
YK249	745875.576	4420565.535
YK250	745888.110	4420550.215
YK251	745883.855	4420542.783
YK252	745944.817	4420533.258
YK253	745949.777	4420540.580
YK254	746005.780	4420430.384
YK255	746016.911	4420427.292
YK256	745980.898	4420407.900
YK257	745981.014	4420417.048
YK258	745927.671	4420447.529
YK259	745929.678	4420437.169
YK260	745867.542	4420358.585
YK261	745862.899	4420365.611
YK262	745800.031	4420348.465
YK263	745806.320	4420341.888
YK264	745791.723	4420296.475
YK265	745782.886	4420295.123
YK266	745851.686	4420197.706
YK267	745857.809	4420202.853
YK268	745965.853	4420074.319
YK269	745961.963	4420066.514
YK270	746824.885	4420020.796
YK271	746810.157	4420029.588
YK272	746763.713	4420121.156
YK273	746756.189	4420118.130
YK274	746727.804	4420283.693
YK275	746719.993	4420281.967
YK276	748405.457	4416519.465
YK277	748411.552	4416524.647
YK278	748364.539	4416579.848
YK279	748359.183	4416573.905
YK280	748314.883	4416624.604
YK281	748308.513	4416619.575
YK282	748276.082	4416679.032
YK283	748281.919	4416684.503
YK284	748243.001	4416726.015
YK285	748237.165	4416720.544
YK286	748192.087	4416741.368
YK287	748187.870	4416734.237
YK288	748076.476	4416859.643
YK289	748071.496	4416853.382
YK290	747868.377	4417021.186
YK291	747867.636	4417011.742
YK292	747830.047	4416991.842
YK293	747821.740	4416996.496

YK294	747824.484	4416952.603
YK295	747832.918	4416945.899
YK296	747784.988	4416937.910
YK297	747791.564	4416947.117
YK298	747780.591	4417012.956
YK299	747772.502	4417012.824
YK300	747786.077	4417054.106
YK301	747777.411	4417049.642
YK302	747738.160	4417079.009
YK303	747736.845	4417071.118
YK304	747669.639	4417082.319
YK305	747673.601	4417089.769
YK306	747566.312	4417191.387
YK307	747574.842	4417194.015
YK308	747591.302	4417295.517
YK309	747581.066	4417282.375
YK310	747489.799	4417251.624
YK311	747492.046	4417243.880
YK312	747435.884	4417241.719
YK313	747441.347	4417235.875
YK314	747317.389	4417120.000
YK315	747311.110	4417124.958
YK316	747275.885	4417067.429
YK317	747270.334	4417073.309
YK318	747245.423	4417046.106
YK319	747242.901	4417054.106
YK289	748071.496	4416853.382
YK290	747868.377	4417021.186
YK291	747867.636	4417011.742
YK292	747830.047	4416991.842
YK293	747821.740	4416996.496
YK294	747824.484	4416952.603
YK295	747832.918	4416945.899
YK296	747784.988	4416937.910
YK297	747791.564	4416947.117
YK298	747780.591	4417012.956
YK299	747772.502	4417012.824
YK300	747786.077	4417054.106
YK301	747777.411	4417049.642
YK302	747738.160	4417079.009
YK303	747736.845	4417071.118
YK304	747669.639	4417082.319
YK305	747673.601	4417089.769
YK306	747566.312	4417191.387
YK307	747574.842	4417194.015
YK308	747591.302	4417295.517
YK309	747581.066	4417282.375
YK310	747489.799	4417251.624
YK311	747492.046	4417243.880
YK312	747435.884	4417241.719
YK313	747441.347	4417235.875
YK314	747317.389	4417120.000
YK315	747311.110	4417124.958
YK316	747275.885	4417067.429
YK317	747270.334	4417073.309
YK318	747245.423	4417046.106
YK319	747242.901	4417054.106
YK306	748071.496	4416853.382
YK307	747868.377	4417021.186
YK308	747867.636	4417011.742
YK309	747830.047	4416991.842
YK310	747821.740	4416996.496

YK311	747824.484	4416952.603
YK312	747832.918	4416945.899
YK313	747784.988	4416937.910
YK314	747791.564	4416947.117
YK315	747780.591	4417012.956
YK316	747772.502	4417012.824
YK317	747786.077	4417054.106
YK318	747777.411	4417049.642
YK319	747738.160	4417079.009
YK320	747171.955	4417051.630
YK321	747177.742	4417046.106
YK322	747122.254	4416987.986
YK323	747116.679	4416993.732
YK324	747053.051	4416925.777
YK325	747044.827	4416929.070
YK326	747039.896	4416922.427
YK327	746942.503	4416792.160
YK328	746936.184	4416797.073
YK329	746890.699	4416721.170
YK330	746884.747	4416726.585
YK331	746757.111	4416602.850
YK332	746751.391	4416608.470
YK333	746618.964	4416441.236
YK334	746612.320	4416445.776
YK335	746550.231	4416312.935
YK336	746543.738	4416317.755
YK337	746436.291	4416210.309
YK338	746443.162	4416205.866
YK339	746411.144	4416144.012
YK340	746420.336	4416145.687
YK341	746445.436	4416105.148
YK342	746451.676	4416098.082
YK343	746457.495	4416103.573
YK344	746648.454	4415899.947
YK345	746654.351	4415905.385
YK346	746729.016	4415811.276
YK347	746722.749	4415806.304
YK348	746363.136	4416050.282
YK349	746366.924	4416043.193
YK350	746244.891	4415992.537
YK351	746241.973	4415999.988
YK352	746113.485	4415944.125
YK353	746111.666	4415951.980
YK354	745933.351	4415933.691
YK355	745934.167	4415925.733
YK356	746978.885	4416955.471
YK357	746979.638	4416946.552
YK358	746901.847	4416898.925
YK359	746900.819	4416907.676
YK360	746750.568	4416956.705
YK361	746751.029	4416948.139
YK362	746687.526	4416919.563
YK363	746687.249	4416928.211
YK364	746551.614	4416979.074
YK365	746547.820	4416971.953
YK366	746506.710	4417011.149
YK367	746503.368	4417003.704
YK368	746435.433	4417027.348
YK369	746433.516	4417019.580
YK370	746342.906	4417052.022
YK371	746338.262	4417044.981
YK372	746282.352	4417129.229

YK373	746274.759	4417125.947
YK374	746271.271	4417202.045
YK375	746263.646	4417198.975
YK376	746232.605	4417256.822
YK377	746225.545	4417252.952
YK378	746217.214	4417294.443
YK379	746211.257	4417287.878
YK380	746171.630	4417308.119
YK381	746163.630	4417302.166
YK382	746163.630	4417349.793
YK383	746171.630	4417356.380
YK384	746160.828	4417358.493
YK385	746091.596	4417372.038
YK386	746090.602	4417364.081
YK387	746004.780	4417376.862
YK388	746004.873	4417368.844
YK389	746130.753	4417406.051
YK390	746136.641	4417411.708
YK391	745998.523	4417506.962
YK392	745991.464	4417502.113
YK393	745987.410	4417553.002
YK394	745980.637	4417546.964
YK395	745939.783	4417570.465
YK396	745935.915	4417563.362
YK397	745830.241	4417653.018
YK398	745826.388	4417645.905
YK399	745755.625	4417680.007
YK400	745754.885	4417671.767
YK401	745661.959	4417664.131
YK402	745655.043	4417654.845
YK403	745647.671	4417780.023
YK404	745639.731	4417779.045
YK405	745821.498	4417362.392
YK406	745823.891	4417354.556
YK407	745722.641	4417306.585
YK408	745725.462	4417298.991
YK409	745535.021	4417269.061
YK410	745534.954	4417260.890
YK411	745442.727	4417289.093
YK412	745441.719	4417281.125
YK413	745337.204	4417285.094
YK414	745332.915	4417293.263
YK415	745270.385	4417194.811
YK416	745275.024	4417187.194
YK417	744915.176	4417158.089
YK418	744914.401	4417166.054
YK419	744792.146	4417151.275
YK420	744794.786	4417143.536
YK421	744608.247	4417032.407
YK422	744605.517	4417040.092
YK423	744023.494	4416943.768
YK424	744022.560	4416951.719
YK425	743717.888	4416926.569
YK426	743718.542	4416934.597
YK427	743601.110	4416958.083
YK428	743598.820	4416950.383
YK429	743473.936	4417008.953
YK430	743473.138	4417000.655
YK431	743355.955	4416986.417
YK432	743355.394	4416978.165
YK433	743217.805	4417024.469
YK434	743220.792	4417031.905

YK435	743087.451	4417094.575
YK436	743085.508	4417086.649
YK437	742959.602	4417099.902
YK438	742958.502	4417091.940
YK439	742781.060	4417142.223
YK440	742779.901	4417134.276
YK441	742591.397	4417153.009
YK442	742593.972	4417144.849
YK443	742420.229	4417007.684
YK444	742415.032	4417013.773
YK445	742273.919	4416872.804
YK446	742267.936	4416878.170
YK447	742180.422	4416746.194
YK448	742174.433	4416751.551
YK449	742074.460	4416658.909
YK450	742078.822	4416652.044
YK451	741997.302	4416619.048
YK452	741993.573	4416626.169
YK453	741926.825	4416582.437
YK454	741931.005	4416575.612
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YK456	741799.587	4416509.730
YK457	741735.201	4416485.883
YK458	741741.259	4416479.596
YK459	741697.824	4416374.436
YK460	741691.993	4416381.276
YK461	741610.952	4416353.861
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YK463	741418.920	4416207.551
YK464	741415.561	4416215.049
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YK466	741348.051	4416193.834
YK467	740213.079	4415625.130
YK468	740208.352	4415631.711
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YK471	739942.104	4415334.263
YK472	739936.913	4415340.467
YK473	739818.654	4415258.822
YK474	739813.989	4415265.347
YK475	739691.443	4415163.610
YK476	739697.492	4415158.234
YK477	739642.625	4415073.648
YK478	739636.603	4415079.065
YK479	739388.869	4414867.900
YK480	739383.304	4414873.687
YK481	739224.270	4414680.440
YK482	739218.856	4414686.399
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YK484	739063.411	4414574.294
YK485	738931.196	4414591.107
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YK491	738740.148	4414399.823
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YK505	738829.779	4414202.316
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YK507	738783.054	4414181.222
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YK575	737976.218	4413420.670
YK576	737969.501	4413416.324
YK577	737916.478	4413472.565
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YK582	737879.903	4413563.788
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YK602	737537.794	4414469.199
YK603	737491.927	4414512.449
YK604	737487.500	4414505.777
YK605	737344.111	4414601.608
YK606	737343.476	4414592.648
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YK617	736333.023	4414332.034
YK618	736332.633	4414340.067
YK619	736207.287	4414338.892
YK620	736206.130	4414346.967
YK621	736090.697	4414297.742

YK622	736090.535	4414306.169
YK623	735958.103	4414338.892
YK624	735961.291	4414346.279
YK625	735822.040	4414424.888
YK626	735816.365	4414418.905
YK627	735789.920	4414475.364
YK628	735784.360	4414469.199
YK629	735752.355	4414485.202
YK630	735751.253	4414494.697
YK631	735722.893	4414471.064
YK632	735724.922	4414462.341
YK633	735649.481	4414480.630
YK634	735653.549	4414487.875
YK635	735623.428	4414517.996
YK636	735619.761	4414510.349
YK637	735586.396	4414513.998
YK638	735586.987	4414521.981
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YK640	735589.483	4414555.661
YK641	735581.422	4414555.141
YK642	735562.006	4414689.880
YK643	735553.967	4414689.268
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YK645	735558.468	4414781.538
YK646	735518.787	4414847.475
YK647	735513.008	4414841.850
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YK649	735484.202	4414864.805
YK650	735486.865	4414953.912
YK651	735494.835	4414953.222
YK645	735558.468	4414781.538
YK646	735518.787	4414847.475
YK647	735513.008	4414841.850
YK648	735492.318	4414868.567
YK649	735484.202	4414864.805
YK650	735486.865	4414953.912
YK651	735494.835	4414953.222
YK652	735497.558	4414984.701
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YK654	735515.213	4415000.601
YK655	735515.822	4414992.203
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YK657	735545.820	4414992.949
YK658	735562.923	4415004.202
YK659	735570.271	4414999.460
YK660	735576.003	4415035.615
YK661	735588.677	4415041.401
YK662	735589.479	4415050.561
YK663	735568.775	4415041.110
YK664	735669.151	4414983.920
YK665	735676.347	4414988.449
YK666	735684.449	4414951.541
YK667	735676.635	4414949.826
YK668	735687.922	4414927.521
YK669	735690.300	4414940.288
YK670	735697.951	4414947.040
YK671	735706.663	4414944.058
YK672	735704.404	4414955.917
YK673	735696.151	4414956.492
YK674	735712.805	4415005.552
YK675	735719.169	4414999.412
YK676	735735.309	4415014.104

YK677	735734.493	4415005.235
YK678	735819.370	4414965.945
YK679	735818.982	4414957.812
YK680	735882.320	4414950.891
YK681	735881.754	4414942.801
YK682	735930.831	4414947.475
YK683	735928.624	4414955.301
YK684	735978.235	4414979.556
YK685	735981.299	4414972.148
YK686	736020.129	4414993.888
YK687	736020.726	4414985.637
YK688	736054.818	4414979.244
YK689	736055.409	4414987.273
YK690	736084.073	4414988.375
YK691	736087.750	4414980.511
YK692	736114.942	4415022.552
YK693	736117.979	4415013.979
YK694	736206.448	4415008.220
YK695	736205.978	4415000.196
YK696	736263.776	4415010.425
YK697	736267.009	4415002.543
YK698	736293.492	4415026.724
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YK700	736334.335	4415052.319
YK701	736334.922	4415043.902
YK702	736491.997	4415005.572
YK703	736491.989	4415013.732
YK704	736597.207	4415026.838
YK705	736595.622	4415034.679
YK706	735482.059	4414392.146
YK707	735474.695	4414395.845
YK708	735432.563	4414173.853
YK709	735424.650	4414175.135
YK710	735406.685	4413992.920
YK711	735414.852	4413994.217
YK712	735470.845	4413846.635
YK713	735478.791	4413848.437
YK714	735484.939	4413659.677
YK715	735477.159	4413652.807
YK716	735510.871	4413647.478
YK717	735513.655	4413655.138
YK718	735562.414	4413625.882
YK719	735563.790	4413615.727
YK720	735590.249	4413643.510
YK721	735585.970	4413650.616
YK722	735633.619	4413664.018
YK723	735632.584	4413655.416
YK724	735685.166	4413634.940
YK725	735684.180	4413626.311
YK726	735729.161	4413639.541
YK727	735726.085	4413646.975
YK728	735790.588	4413682.091
YK729	735798.005	4413677.020
YK730	735800.276	4413757.840
YK731	735807.363	4413750.192
YK732	735843.194	4413752.030
YK733	735844.484	4413760.107
YK734	735909.993	4413734.839
YK735	735907.505	4413727.224
YK736	735989.272	4413705.175
YK737	735991.729	4413712.798
YK738	736061.132	4413686.659

SWITCHYARD	TOWARDS RIGHT (Y)	UPWARDS (X)

Coordinate sequence :Lattitude,Longitude
Datum : WGS 84
Type : geographical

POWER PLANT AREA	TOWARDS RIGHT (Y)	UPWARDS (X)

YK739	736060.014	4413678.532
YK740	736123.406	4413684.044
YK741	736121.373	4413691.897
YK742	736172.808	4413714.859
YK743	736174.855	4413707.012
YK744	736255.727	4413722.397
YK745	736255.703	4413714.362
YK746	736398.107	4413700.581
YK747	736398.756	4413708.556
YK748	736523.582	4413700.295
YK749	736523.054	4413692.313
YK750	738779.056	4414475.385
YK751	738725.890	4414524.618
YK752	738720.455	4414518.749
YK753	748574.692	4424080.859
YK754	748567.707	4424240.849
YK755	748559.715	4424240.500
YK756	751156.743	4424681.895
YK757	751164.725	4424682.435

ŞALT SAHASI	SAĞA (Y)	YUKARI (X)
S1	746723.401	4415824.452
S2	746823.401	4415824.452
S3	746823.401	4415724.452
S4	746723.401	4415724.452
SM	746773.401	4415774.452

Koor. Sırası : Enlem Boylam
Datum : WGS 84
Türü : Coğrafi

SANTRAL SAHASI	SAĞA (Y)	YUKARI (X)
1	39.94240199:29.96507944	
2	39.94190511:29.96720338	
3	39.94191794:29.96918189	
4	39.94131627:29.97175329	
5	39.93957867:29.97386499	
6	39.93726111:29.97456504	
7	39.93498460:29.97366597	
8	39.93335911:29.97140883	
9	39.93310214:29.96997352	
10	39.93242202:29.96870906	
11	39.92960183:29.96479556	
12	39.92815197:29.96278287	
13	39.92782644:29.96096563	
14	39.92529206:29.95725463	
15	39.92322998:29.95439279	
16	39.92237352:29.94961443	
17	39.92304370:29.94674827	
18	39.91829058:29.92209125	
19	39.91743332:29.91731673	
20	39.91858534:29.91238360	
21	39.92084010:29.90638846	
22	39.92112625:29.90516260	
23	39.91614652:29.89997609	

24	39.91530811:29.89964640
25	39.91461755:29.89868990
26	39.90662056:29.89257922
27	39.90559138:29.89217472
28	39.90531639:29.89179395
29	39.89580781:29.89041960
30	39.89489863:29.89069560
31	39.89344980:29.89012631
32	39.88428730:29.88538349
33	39.88305977:29.88490135
34	39.88244477:29.88405021
35	39.87395447:29.87870092
36	39.87351573:29.87942342
37	39.87319646:29.88079176
38	39.86984399:29.88678605
39	39.87113844:29.88875214
40	39.87238203:29.89047403
41	39.87297429:29.89376541
42	39.87221908:29.89700012
43	39.87031879:29.89931127
44	39.86778268:29.90007960
45	39.86529032:29.89909942
46	39.86384819:29.89710248
47	39.86203989:29.89355409
48	39.86134867:29.89347054
49	39.85854604:29.89236876
50	39.85185334:29.88723438
51	39.84902276:29.88331684
52	39.84800404:29.87766125
53	39.84917694:29.87263489
54	39.85054257:29.86947804
55	39.85290403:29.86660459
56	39.85554733:29.86580243
57	39.86160945:29.86329617
58	39.86234200:29.86205924
59	39.86220713:29.86121368
60	39.86183788:29.85916532
61	39.86215195:29.85781823
62	39.86146665:29.85063063
63	39.86112220:29.84872088
64	39.86161698:29.84659783
65	39.86241546:29.84360432
66	39.86254200:29.84306068
67	39.86300732:29.83927250
68	39.86325978:29.83818882
69	39.86339640:29.83664191
70	39.85820349:29.82650833
71	39.85779536:29.82634848
72	39.85634270:29.82434159
73	39.85609165:29.82295334
74	39.85111690:29.80963186
75	39.85044186:29.80869969
76	39.85025609:29.80767339
77	39.84589523:29.80034911
78	39.84207313:29.80243629
79	39.84105607:29.80367540
80	39.83852047:29.80444704
81	39.83602715:29.80347075
82	39.83424415:29.80100826
83	39.83374701:29.79826022
84	39.83366303:29.78963810
85	39.83415988:29.78750176

86	39.83557109:29.78319535
87	39.83572392:29.78253809
88	39.83501808:29.76708264
89	39.83455423:29.76644253
90	39.83406487:29.76374223
91	39.83438695:29.76035498
92	39.83417790:29.75920173
93	39.83440127:29.75655836
94	39.83412837:29.75505318
95	39.83460553:29.75299865
96	39.83518905:29.75047467
97	39.83550722:29.74910446
98	39.83683700:29.74748248
99	39.83801019:29.74712445
100	39.85069412:29.74456399
101	39.85354472:29.74567780
102	39.85565946:29.74859573
103	39.85636629:29.75249477
104	39.85565186:29.75557172
105	39.85508127:29.75744371
106	39.85490545:29.75820080
107	39.85501133:29.76348745
108	39.85532668:29.76522817
109	39.85463992:29.76818439
110	39.85410463:29.76883717
111	39.85237753:29.78280628
112	39.85300708:29.78628472
113	39.85202014:29.79052927
114	39.85078632:29.79443226
115	39.85560225:29.80142488
116	39.85621305:29.80166386
117	39.85766611:29.80367030
118	39.85793066:29.80513176
119	39.86197644:29.81725237
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TURBINE LATTITUDE LONGITUDE

SPOTS

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TURBINE LATTITUDE LONGITUDE

PLOTS

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T40/3	39.91907867:29.89038403
T40/4	39.93388022:29.89852636
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T41/2	39.93785441:29.90828910
T41/3	39.93655531:29.91385422
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T42/2	39.93394481:29.92137188
T42/3	39.93797102:29.93174124

SWITCHYARD AREA LATTITUDE LONGITUDE

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T44/1	39.93696059:29.95024112
T44/2	39.93633200:29.95292951
T44/3	39.93678388:29.95457666
T44/4	39.93730986:29.95530677
T45/1	39.93876779:29.95713985
T45/2	39.93951752:29.95818066
T45/3	39.94037480:29.95955962
T45/4	39.94175724:29.96147895

ŞALT SAHASI	ENLEM	BOYLAM
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S2	39.93876779:29.95713985	
S3	39.93951752:29.95818066	
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SM	39.94175724:29.96147895	

ATTACHMENT 1.3

PLOT VISIT

EN-ÇEV (logo)

Date **:** January 9th, 2017
Number : DY/C/2017-0013

Subject : Plot visit
Competency Certificate Nr. :70

REPUBLIC of TURKEY BILECIK GOVERNORSHIP
ENVIRONMENT AND URBANIZATION PPROVINCE DIRECTORATE

BILECIK

ÇEKIM ENERJI VE YATIRIM URETIM VE TIC. A.S. plans to install and operate the Bozüyük Wind Energy Power Plant (90 MWm) in the Province of Bilecik, Sub- province of Bozüyük, Çamyayla, Delieelmacık, Muratdere, Erikli Villages Location.

Clause 9, paragraph 3 of the Competency Certificate Communiqué, enacted by its publication in the Official Gazette Issue number 27436 dated December 12th, 2009, states that "The institutions/ enterprises that get their competency certificates at the preparation stage of the Environmental Impact Assessment Application File or of the Environmental Impact Assessment Report or of the PTD, are obliged to send at least one of the personnel indicated in paragraphs (a), (b), (c) of the first article of Clause 5 of this communiqué, to study the project area, with the condition to inform the Environment and Forestry Province Directorate on this matter. In this respect, related to the subject project, a visit is planned to the project area on the date of January 10th, 2017, Tuesday.

For your kind information.

Respectfully,

ENERJI ÇEVRE YATIRIMLARI
DANISMANLIĞI HARITACILIK
IMAR INSAAT. A.S

Authorized signatory
ÖZER EMRAH ÖZTÜRK

(original signature)

ATTACHMENT 1.4

ENVIRONMENTAL IMPACT ASSESSMENT REPORT SPECIAL FORMAT

(logo)

REPUBLIC of TURKEY
MINISTRY OF ENVIRONMENT AND URBANIZATION
General Directorate of Environmental Impact Assessment, Permission and Auditing

Number : 48331039-220.01-E.13381 August 18th, 2017

Subject : Bozüyük Wind Energy Power Plant Project
Environmental Impact Assessment Report
Special Format

EN-ÇEV ENERJI ÇEVRE YATIRIMLARI VE DANISMANLIĞI HARITACILIK
IMAR INSAAT. A.S

The opinions and suggestions received from the public at the Public Participation Meeting held on February 2nd, 2017, related to the Bozüyük Wind Energy Power Plant (90 mwe /90 mwm) planned to be installed by Çekim Enerji Yatırım Üretim ve Ticaret A.Ş. in the Bilecik Province, Bozüyük Sub- province, Çamyayla, Muratdere, Delielmacık, Erikli Villages position and the Environmental Impact Assessment Report Special Format, the scope of which was determined by the commission as the result of the Scope and Special Format Description, take place in the System.

The Environmental Impact Assessment Report that will be compiled pursuant to the Environmental Impact Assessment Report Editing Guide published in the internet site of our Ministry (General Directorate of Environmental Impact Assessment, Permission and Auditing page) by including the Biologist, Agronomy Engineering, Forestry Engineering profession groups in the task group preparing the Environmental Impact Assessment Application File, has to be be submitted to our Ministry through the system. For your kind acknowledgement.

e-signature

Cihan TATAR
Minister A.
Assistant General Manager Rep.

Distribution:
EN-ÇEV ENERJI ÇEVRE YATIRIMLARI VE
DANISMANLIĞI HARITACILIK IMAR INSAAT. A.S

THE ORIGINAL DOCUMENT
WAS SIGNED ELECTRONICALLY
AUGUST 21ST, 2017 EROL BARIS (paraph)

ÇEKIM ENERJI YATIRIM ÜRETIM VE TICARET A.S.
Turan Güneş Bulvarı, Galip Erden Cad. No.11
ÇANKAYA/ ANKARA

328

BOZÜYÜK WIND ENERGY POWER PLANT (90 MWE /90 MWM) PROJECT ENVIRONMENTAL IMPACT ASSESSMENT REPORT
SPECIAL FORMAT

Cover page:
Project Owner's name, address, telephone, facsimile number:
Project Title:
Project price:
Clear address of the location selected for the Project (Province, Sub- province, Position):
Coordinates of the selected location, Zone:
Place of the Project within the scope of the Environmental Impact Assessment Regulation: sector, sub-sector
NACE code of the Project:
Name, address, telephone, facsimile number of the institution that prepared the File/ Report:
Number, date of the Competency Certificate:
Report Presentation date:

List of contents:
Non- technical Summary of the Project

Part I: Presentation of the project and its purpose (Description of the project subject activity, its life time, service purposes, market or service areas and its importance and necessities within this area from the economic and social point of view, at country and/ or province level:)

Part II: Location of the place selected for the project
II.1. Place of activity (Presentation of the project place at 1/50.000 or 1/100.000 scale on the Environmental Plan approved by the related Administration, on the Implementation Development Plan, together with the legends and plan notes, plotting the project zone and its close surroundings on the scaled map or sketch, plotting on the map the settlement areas located within the project area and its surroundings, indicating the distances, the region of the project zone, the names, direction and distances of the plants in the vicinity, the itineraries to be used for reaching the plant (if available, the 1/50.000 scale Environmental Plan, the 1/5.000 scale Master Development Plan and the 1/1.000 scale Implementation Development Plan should be presented together with their legends and plan notes, moreover the mentioned plan should carry the stamps "Approved by …With the decision Nr. …Dated …" and "Identical with the Original"))
II.2. The Location of the Activity Units within the scope of the Project (Indication of all the Administrative and Social Units, Technical Infrastructure Units on the Layout Plan)

Part III: Economic and social aspects of the project
III.1. Financial Sources regarding the actualization of the Project
III.2. Work Flow Chart and Timing Schedule regarding the actualization of the Project
III.3. Cost – Benefit Analysis of the Project
III.4. Other Economic, Social and Infrastructure Activities which are not within the project scope but are planned to be actualized by the Investment company or Other company, related to the actualization of the Project
III.5. Nationalization
III.6. Other issues

Part IV: Plotting the impact zone of wind power energy plant and the description of the present characteristics within the boundaries of this zone (*)
IV.1 Plotting the impact zone of the Project (It will be explained how and according to what the impact zone was plotted and the Impact zone will be shown on the Map, (Showing the Project area plotted by using the Plotting Method for the Power Plant area in the Electricity Generation Plants based on Wind Power.)
IV.1.1. The influences exerted on the Project by the mines in the Project area and in its Vicinity, Precautionary Measures to take.
IV.2. Characteristics of the Physical and Biological Environment and the Use of the Natural Resources
IV.2.1. Geological Characteristics of WIND Power Energy Plants and the EIH Line Route (the 1/25000 scale Geologic Map of the Tectonic movements, Topographic characteristics, Mineral Resources, Landslides, Unique Formations, Avalanche, Flood, Rock Falls, etc. and a Large Scale (1/5.000) Geologic Map of the Examination area, the Stratigraphic Column Sections, Geological and Geotechnical Study Reports)

(*) The impact zone has to be taken into consideration when the environmental characteristics of the area selected for this Project are presented. During the explanation of the mentioned issues in this part, in the Notes part of the report, it should be specified which information provided by the concerned state institutions and enterprises, research institutions, universities or other similar institutions was provided from which institution or source or related map, etc., is recorded in the document. In case the project owner is willing to submit information based on personal research, then, for that information which is subject to the authorization of those public institutions and enterprises, he/ she has to provide from the respective institutions and enterprises the certificates attesting the correctness of the information and has to add these certificates to the report.

IV.2.2 The current and planned Hydrologic and Hydro- geologic use of the surface and underground Water Resources (Drinking, Use, Plants watering, Electricity generation, Dam, Lake, Pond, Aquaculture production, Waterway Transportation facilities, Tourism, Water and/ or coastal use for Sports and Similar Purposes, Other uses,
IV.2.3. Soil characteristics and Status of Utilization (Classification of the Land usability of the soil, Erosion, Pasture, Field, Current utilization status of the soil, etc.)
IV.2.4. Agricultural Lands (Agricultural Development Project Lands, Special Products Plantation Lands, Size of the Irrigated and Dry land Agriculture, Product Designs and their Yearly Production Quantities)
IV.2.5. Forest Areas (Tree species and their quantities (m^3), Sizes of the Covered Lands and their Closures, Their Current and Planned Purposes of Conservation and/ or Use, 1/25000 scale Country Map indicating the Project area, the Distance from the Project Area to the Forest Lands, 1/10000 scale Forest Cadastre, and the attachment of the Approves Land Data Map.)
IV.2.6. Conservation Areas (National Parks, Nature Parks, Wetlands, Natural Monuments, Nature Reserve Areas, Wildlife Protection Areas, Biogenetic Preservation Areas, Biosphere Reserves, Natural Sites and Monuments, Archeological, Historical and Cultural Sites, Special Environment Conservation Regions, Special Protection Areas, Touristic Regions and Centers, Lands within the scope of the Pasture Law)
IV.2.7. Flora and Fauna (Local Endemic Plant Species with endemic characteristics, Animal Species living in nature, Species under protection pursuant to the national and international legislation, the rare and endangered species and their living environment, the names of the game animals, their population and the Central Hunting Commission Decisions taken for these species), showing on a map the vegetation types and their sampling areas within the project zone, the protection measures necessary to be taken for the living creatures which will be impacted by the project, the impact on the river beds (at the construction and operation stages)
IV.2.8. Lands under the jurisdiction of the state authorized bodies (Prohibited military zones, areas allocated for certain purposes to the public institutions and enterprises, areas confined by the Decree Number 7/16349 of the Council of Ministers, published in the official Gazette Number 16415 dated September 25th, 1978, etc.
IV.2.9. General Climatic Conditions of the Region, Numbered days, Temperature, Distribution of Precipitations and winds, Top (the 1960 – 2013 Bulletins of the closest Meteorology Station
IV.2.10 Other characteristics
IV.3. Characteristics of the Social Economic Environment
IV.3.1. Social infrastructure Facilities in the territory (Education, Health, Cultural Services, and the rate of utilization of these facilities
IV.3.2. The Project Area and the Utilization of the Urban and Rural lands in its close vicinity (Distribution of the settlement areas, the Present and Planned Utilization Areas, in this context the Industrial Zones, Ports, Residences, Touristic areas, etc.)
IV.3.3. Other characteristics

PART V: The impact of the project on the areas defined in part IV and the precautionary measures to take
(This part describes the impacts of the project on the physical and biological environment and explains the legal, administrative and technical measures which will be taken to prevent, minimize and improve these impacts under the topics V.1 and V.2)

V.1. Preparation of the land, the activities at the construction and installation stages, the impacts on the physical and biological environment and the precautionary measures to be taken
V.1.1. Within the scope of the jobs concerning the preparation of land, the location and size of the excavation area, among the materials to be used for excavation, the transportation, storage, etc. of those materials that are flammable, explosive, harmful and toxic and their utilization
V.1.2. The places where excavation material residues such as soil, stones, sand, etc. will be transported and for which purposes they would be used
V.1.3. Proceedings regarding the construction of the activity units
V.1.4. Dust spreading operations such as breaking, grinding and storage during the project
V.1.5. The amount and specifications of the waste material to result within the scope of the project and its method of disposal

V.1.6. The amount of water to be used within the scope of the project, where from and how it will be supplied, which is the process that the sewer water resulting from then utilization of the water will pass through and how it will be released to the receiver environment and the specifications of this water
V.1.7 Proceedings regarding the grounding in the wind power energy plant and the installation of the lightening conductor
V.1.8. The sources and level of the sound that will be created due to the jobs which will be executed related to the preparation of the land and during the construction of the facilities
V.1.9 The natural plant species to be removed in order to provide the land necessary for the construction site and for preparing the land and the size of the area where these operations will be executed,
V.1.10. The size of the agricultural lands that will be disposed in order to provide the land necessary for the construction site and for preparing the land, their land usability and species of agricultural products, Permissions to be obtained and Warranties, amount of vegetable soil to be peeled off the surface, where and how it will be preserved, method of reconsideration, road to be followed regarding the cultivated lands and agricultural product which will be impacted by the construction works
V.1.11. The area of the site to be established for the personnel who will do all the work starting from the preparation of the land until all the units will be ready for operation and where from and how the other technical/ social infrastructure needs will be supplied
V.1.12. Among the jobs to be performed starting from the preparation of the land until all the units will be ready for operation, the jobs related to human health and those risky and harmful for the environment
V.1.13 Concerning the impact exerted upon the material, the determination of the level and expansion size of the impact upon the cultural and natural heritage available at the surface and underground (upon the traditional urban texture, archeological remains, natural values that have to be protected),
V.1.14. Other activities,

V.2 The activities at the operation level of the project, their influences upon the physical and biological environment and the precautionary measures to be taken
V.2.1. The characteristics, dimensions, capacities, etc. of the activity units, other information
V.2.2. What kind of maintenance job will be done for the wind power energy plant, materials to be used, kind and amount of residues to come out, their specifications, dimensions, characteristics and how they will be disposed,
V.2.3.The electrical and magnetic fields created, their intensity impact, precautionary measures to be taken.
V.2.4. Measures to be taken against reflection of light,
V.2.5. Probability of risks endangering the safety (the evaluation report of the birds' migration itineraries, etc. for the WPEP (Wind Power Energy Plants) Projects should be submitted attached to the Environmental Impact Assessment Report),
V.2.6. The influences of the line and transformer upon the communication facilities (PTT lines, Radio, TV transmitters, etc.)
V.2.7. Possible impact upon the forest lands and the description of the precautionary measures to be taken against these impacts, the precautionary measures to be taken against forest fires,
V.2.8. The noise sources that will be created during the operation of the project units and the precautionary measures to be taken
V.2.9. Creation of landscape elements in the project area and the land arrangements to be made for the other purposes,
V.2.10. Other activities

V.3. Environmental cost – profit analysis

Part VI: The lasting impacts and the impacts that will occur after the business is shut down and the precautionary measures to be taken against these impacts
VI.1. Land improvement
VI.2 Other studies

Part VII: The alternatives of the project
(the location selection, technology and precautionary measures alternatives will be compared in this part and the choices will be listed in the order of their preference.)

Part VIII : Monitoring program
VIII.1. The monitoring program proposed for activity construction, the monitoring program proposed for the activity operation and for the after operation and the emergency response plan,
VIII.2. In case result of the Environmental Impact Assessment will be positive, the program regarding the actualization of the issues in the fourth paragraph of the Competency Communiqué, under the topic "Obligations of the Institutions/ Enterprises granted with the Competency Certificate"

Part IX : Public participation
(How and using which methods were informed the local people who would probably be influenced by the project, the reflection in the Environmental Impact Assessment Report of the public opinion and the explanations given related to the subject)

Part X: Conclusions
(A Summary of all explanations, a General Evaluation listing the important environmental impacts of the project and, in case of project actualization, mentioning to which degree it was successful in preventing the negative environmental impacts, the Selection among the alternatives within the project scope and the reasons of these selections)

Attachments: (that part of the information, documents and techniques obtained from certain institutions to use for the preparation of the report, but that had not been included in the text)

Notes and sources: presentation of the persons who prepared the environmental impact assessment report (name, surname, curriculum vitae resume of maximum 1 page for one person, their references and the signature mentioning the responsibility for report) (/ in the meeting for acknowledgement and definition of the scope and special format, in addition to the professional group to prepare the environmental impact assessment report, the commission decided to have also an agronomy engineer, a forestry engineer and a biologist. the curriculum vitae and notary attested diploma, signature circular are attached to the cover letter.

ATTACHMENT 2

IF AVAILABLE, THE ENVIRONMENTAL PLAN, LAND DEVELOPMENT PLAN, LAYOUT PLAN OR PLAN AMENDMENT OFFERS CONCERNING THE LOCATION CHOSEN FOR THE PROJECT

2.1 **1/100.000 scale Environmental plan, Plan legend and the relevant plan provisions**

2.2 **1/25.000 scale Topographic map**

1/25.000 scale Topographic map showing the water resources

2.3 **Layout plan**

2.4 **1/25.000 scale Geological map**

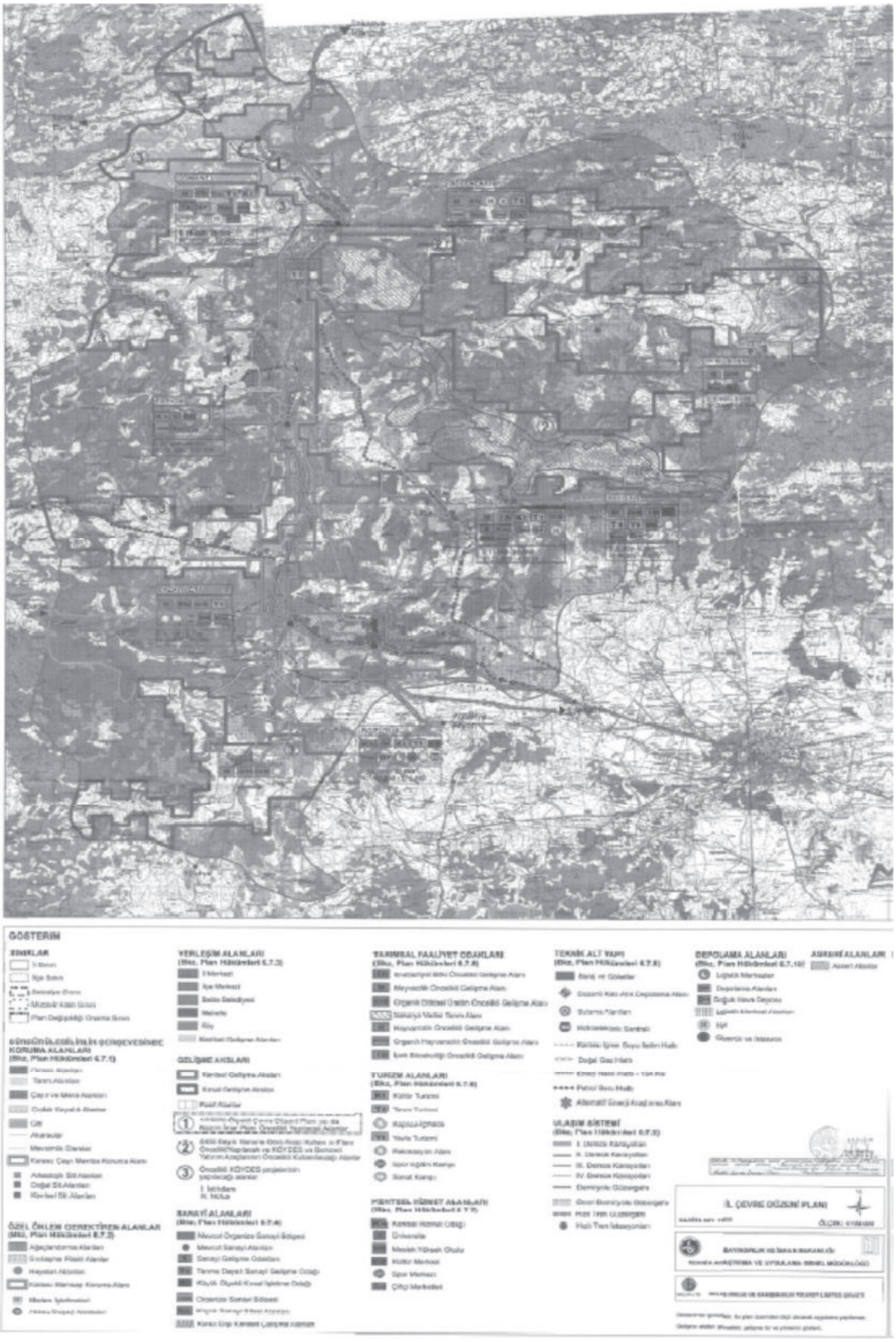
1/25.000 scale Active fault map

1/500.000 scale Landslide map

2.5 **1/100.000 scale Land Assets map**

ATTACHMENT 2.1

1/100.000 SCALE ENVIRONMENTAL PLAN, PLAN LEGEND AND THE RELEVANT PLAN PROVISIONS


GÖSTERİM
İL ÇEVRE DÜZENİ PLANI
ÖLÇEK: 1/100.000

Agricultural buildings not qualified as facilities can be built. These buildings cannot be changes for other utilization purposes.

10. In the Master Plan and Implementary Development Plan the "Areas under the risk of Inundation" will be marked and the opinion of the General Directorate of Water Affairs will be solicited.

11. The "Areas under disaster risk" and the "Areas under liquefying risk" will be marked on the Master Plan and Implementary Development Plan and the opinion of the Prime Ministry Disaster and Emergency Presidency will be solicited.

12. In case of possible changes of the administrative borders after the approval of this plan, the new administrative borders will be designed without further need for plan amendments.

13. For any matters not included in this plan and plan implementations provisions, the current Laws, Statute, Regulations, Communiqués and standards will be in force. After the approval date of this plan, any amendments of the laws, statute, regulations, communiqués and standards and new legal texts will be valid in the planning area without further need for plan or plan provision amendment.

14. If needed within the scope of this plan, subscale plans concerning the utilization of the social reinforcement areas of security, health, education, etc., large urban green areas, of all kinds of waste retrieval facilities concerning the entire city or region/ basin and, integrated with these, of the recycling facilities, purification facilities, social and technical infrastructure, railroads, airports, dams, of energy generating and distribution will be prepared by the concerned agency, according to the principles of the plan protection, development and planning, pursuing the public benefits, taking into consideration the opinions of the concerned institutions and enterprises, at the scale of 1/100.000 without any need for environmental plan amendments. The prepared plans will not be approved before getting the suitable opinion of the Ministry of Environment and Urbanization. The approved plans are sent to the Ministry of Environment and Urbanization in order to be recorded in the database in numerical context. The subject facilities/ facility areas cannot be utilized for other purposes than of their own.

    The selection of location for the integrated waste retrieval or recycling facilities that include physical/ chemical/ biological pretreatment, decision will be taken considering the principle of waste disposal at the closest facility and the waste amount in the region.

" Bilecik 1/100.000 scale Environmental Plan" to be used in the "Bozüyük Wind Energy Power Plant" Project planned to be installed by Çekim Enerji Yatırım Üretim ve Ticaret A.Ş. within the borders of the Bilecik Province, Bozüyük Sub-province. Identical with the original provision number 14.

ÖZGE DEMIRTAS – City Planner March 19th, 2018
(signature)

This document was undersigned by safe electronic signature pursuant to the electronic signature law number 5070

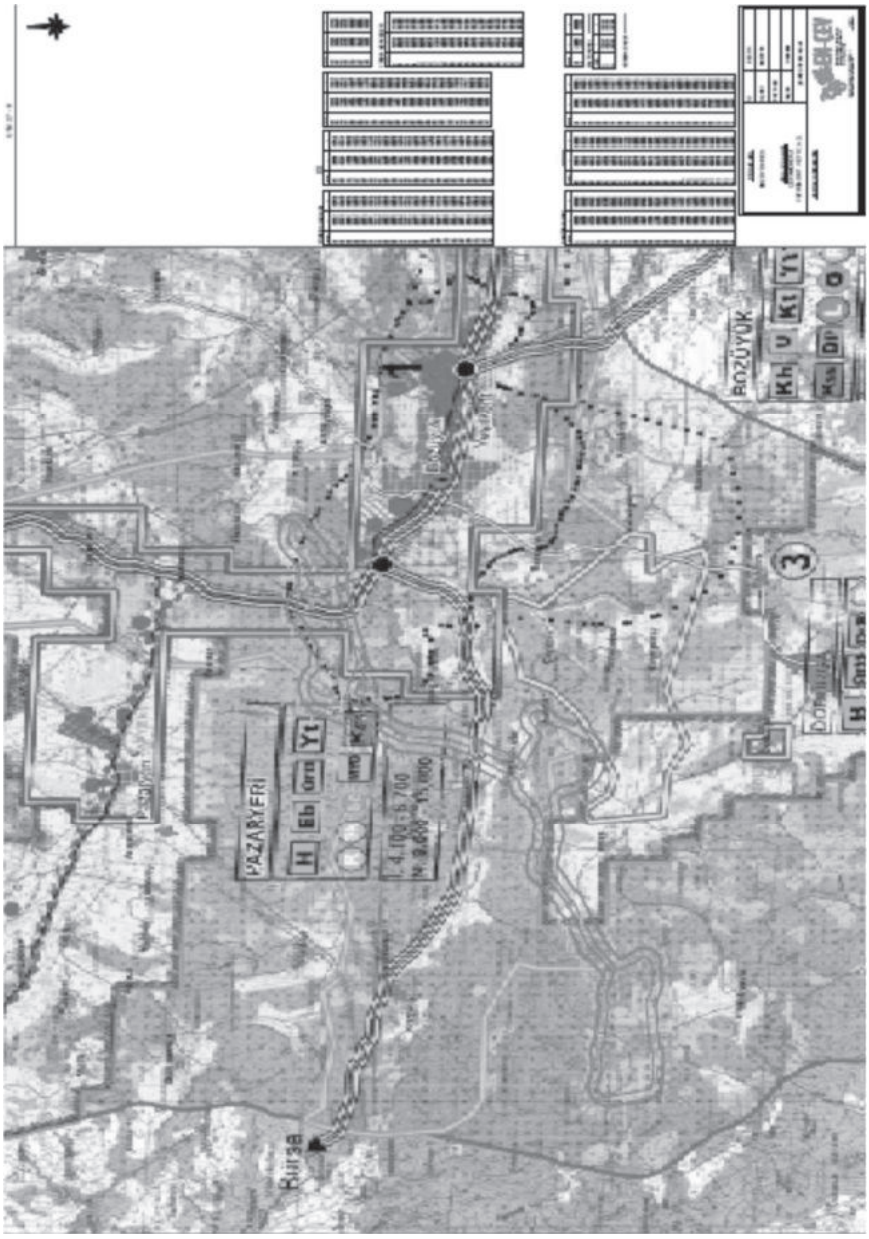
HALKBANK **March 16th, 2018**

BANK RECEIPT OF THE **ENVIRONMENT AND URBANIZATION FEE** OF 400 TL PAID FOR THE **BOZÜYÜK WIND ENERGY POWER PLANT PROJECT**

TÜRKIYE HALK BANKASI

GAZIOSMANPAŞA BRANCH

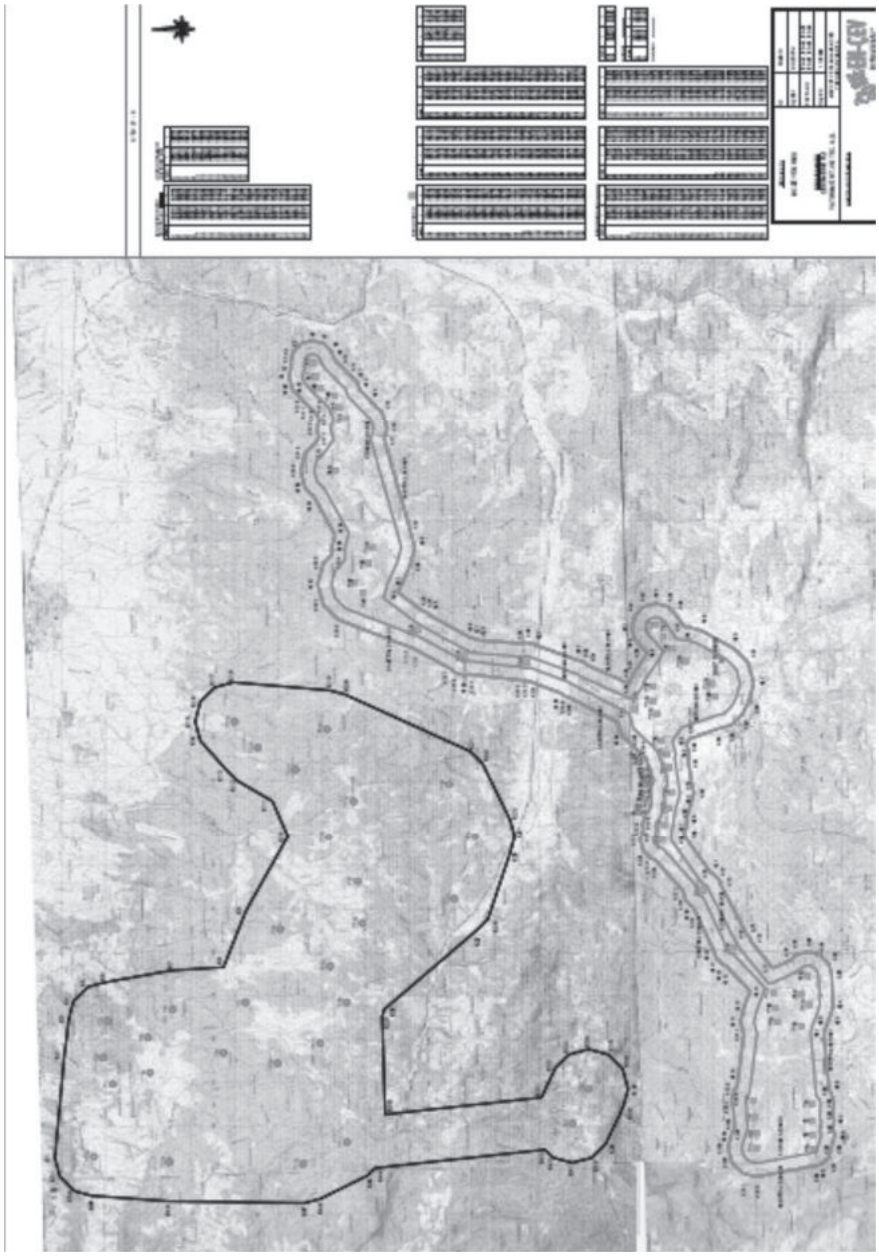
ENVIRONMENTAL PLAN

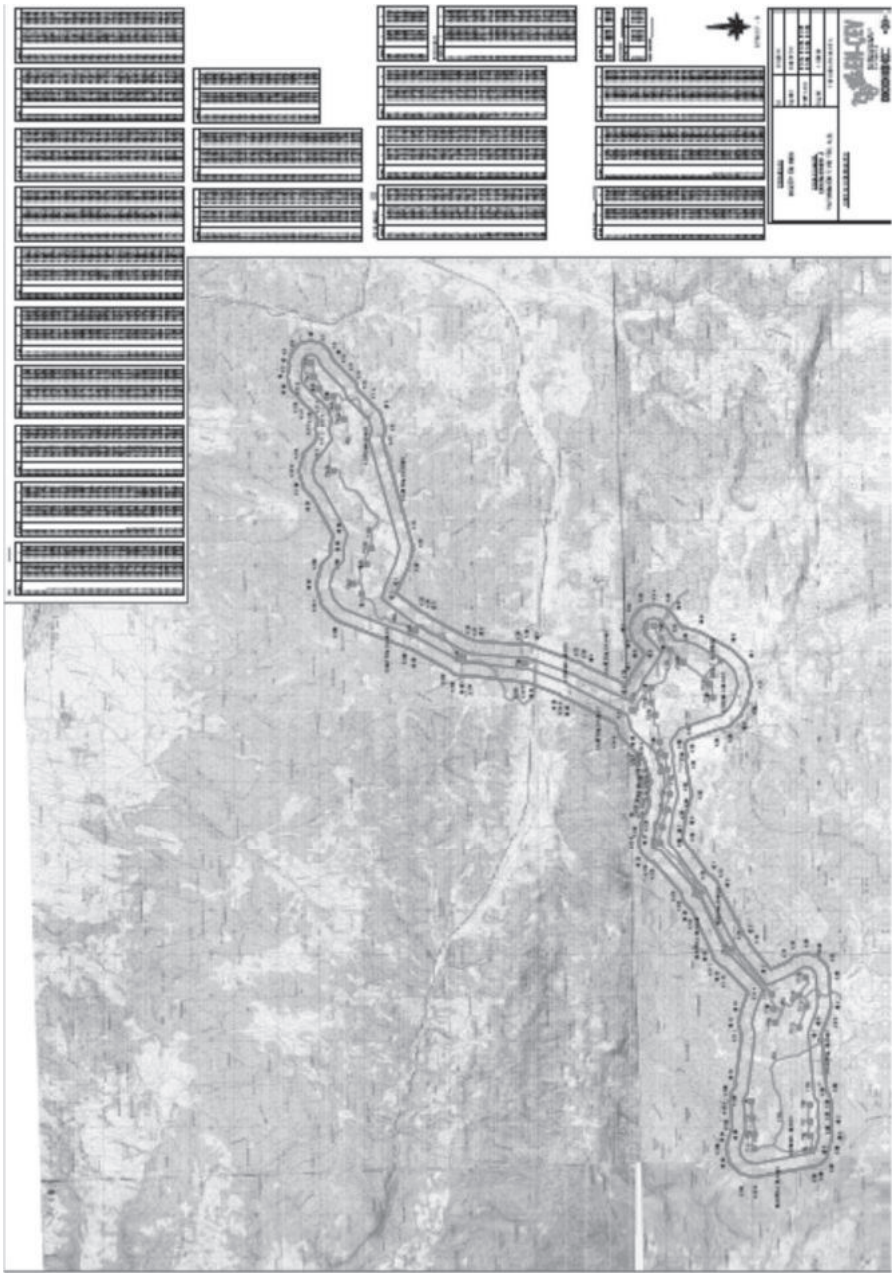


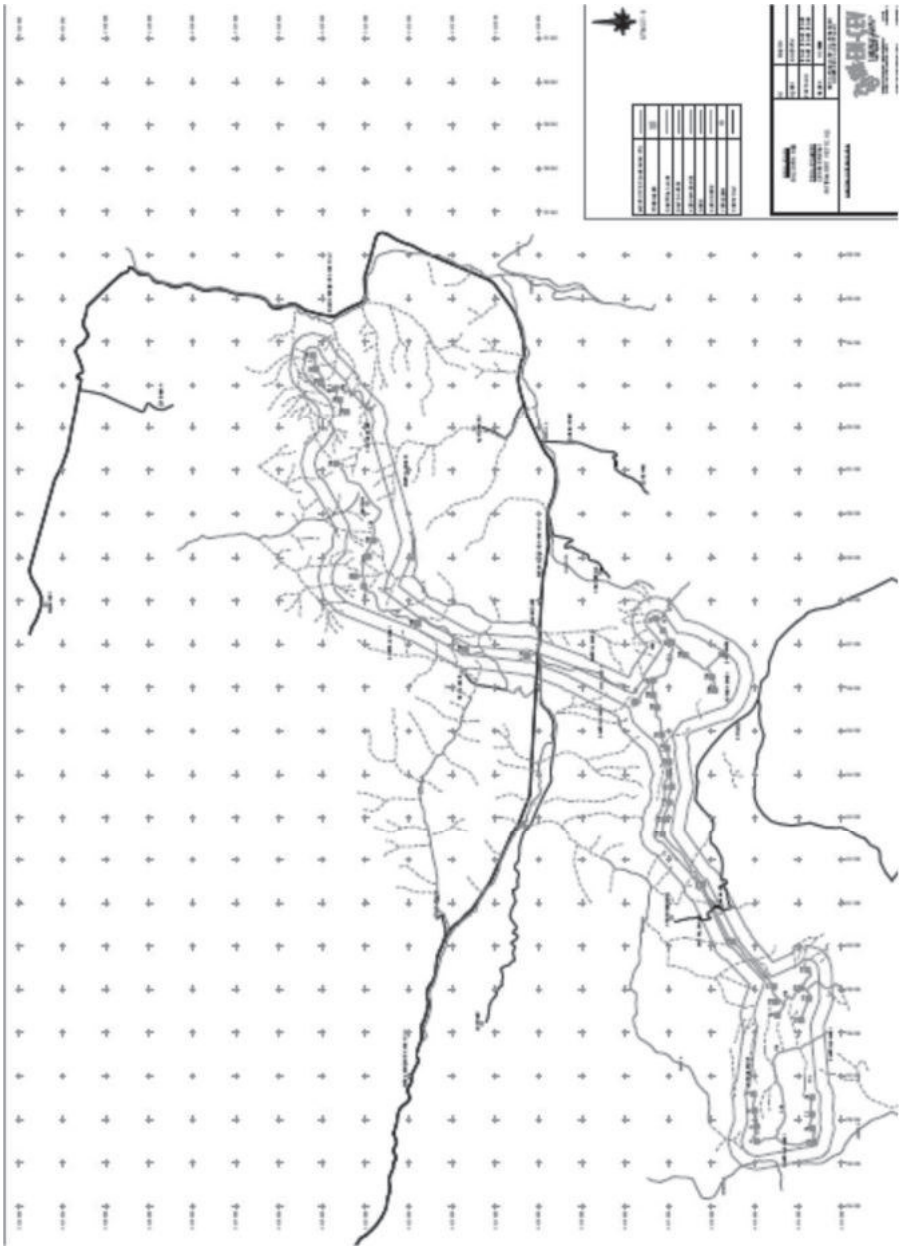
ATTACHMENT 2.2

1/25.000 SCALE TOPOGRAPHIC MAP

1/25.000 SCALE TOPOGRAPHIC MAP SHOWING THE WATER RESOURCES

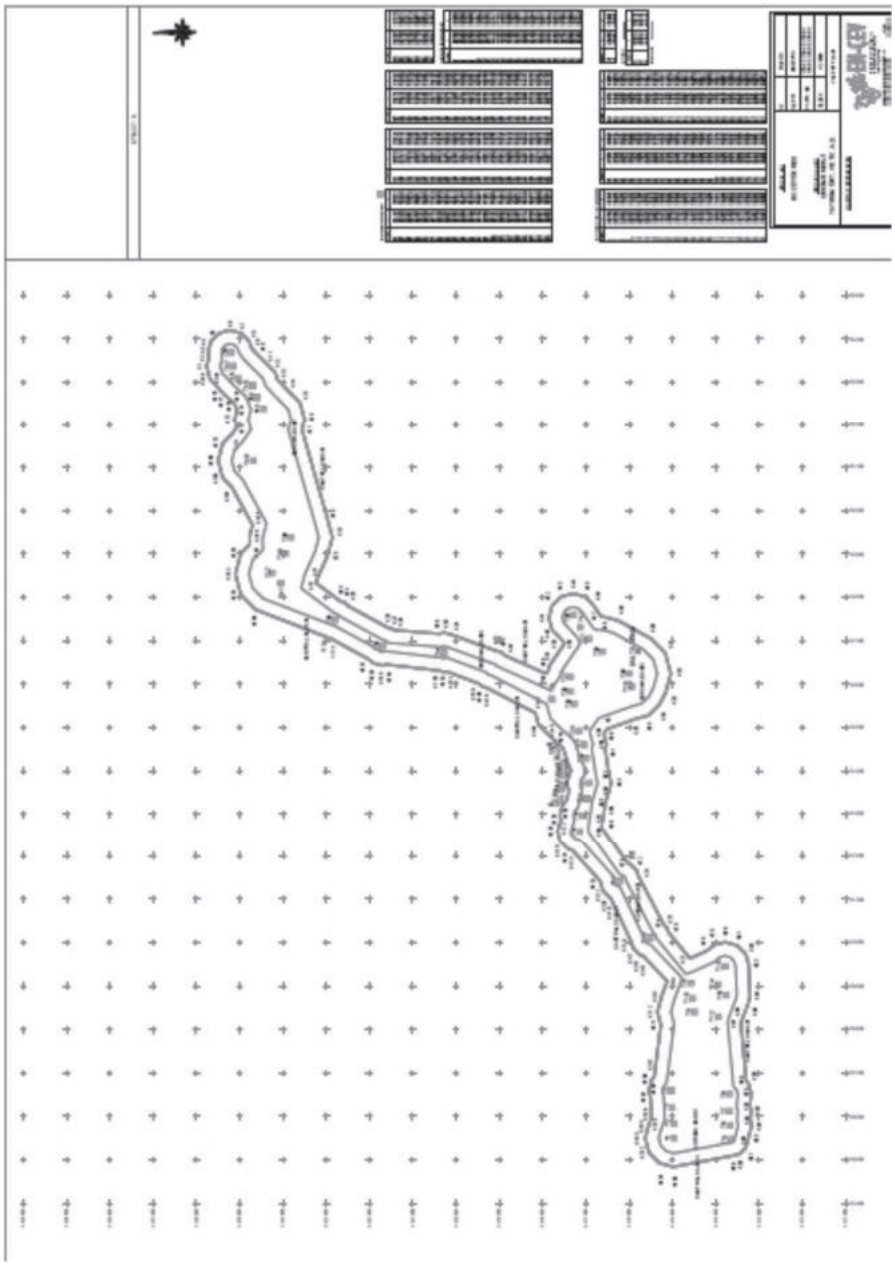






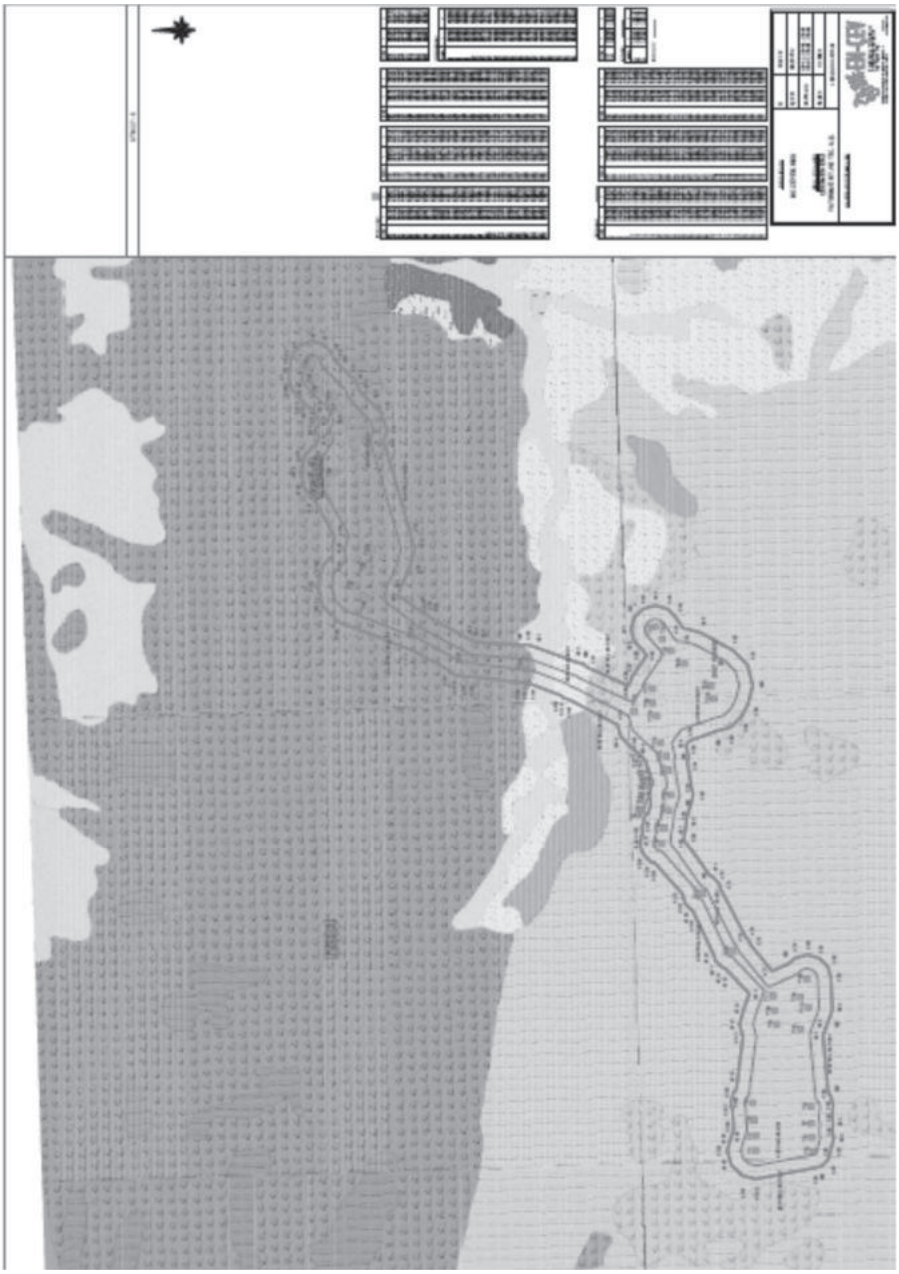
ATTACHMENT 2.3

LOCATION PLAN

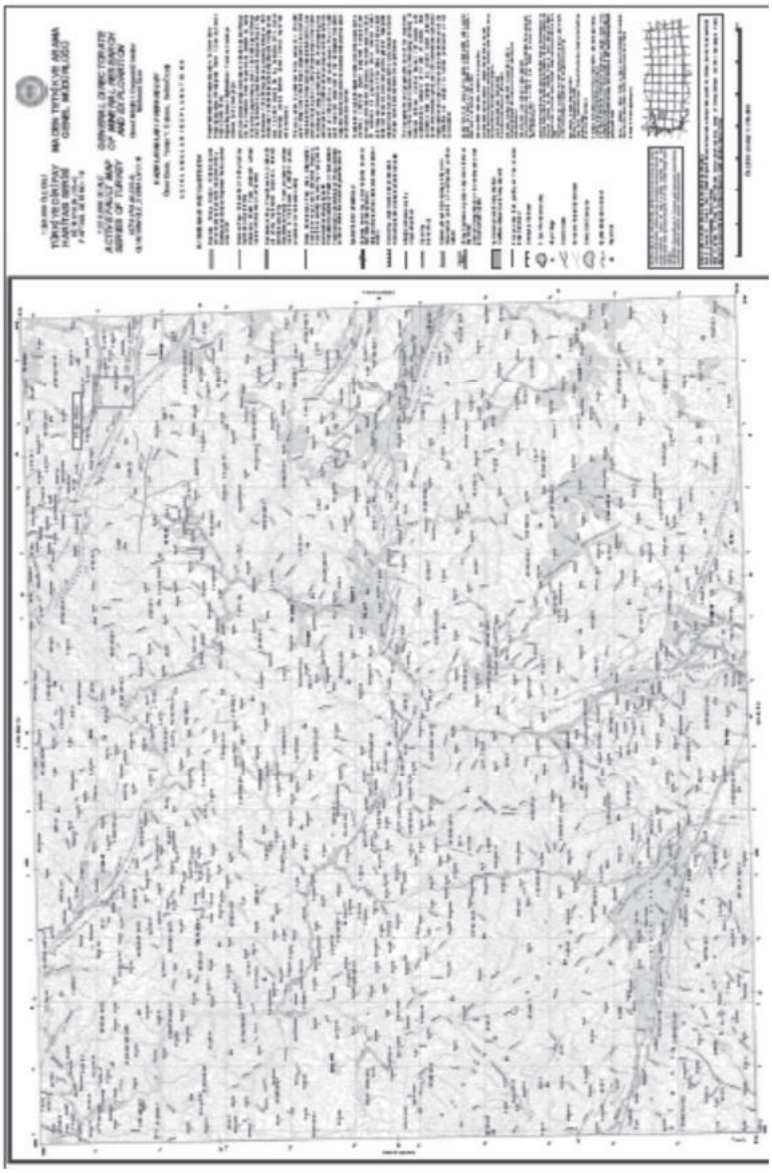


ATTACHMENT 2.4

1/25.000 SCALE GEOLOGICAL MAP
1/25.000 SCALE ACTIVE FAULT MAP
1/500.000 SCALE LANDSLIDE MAP

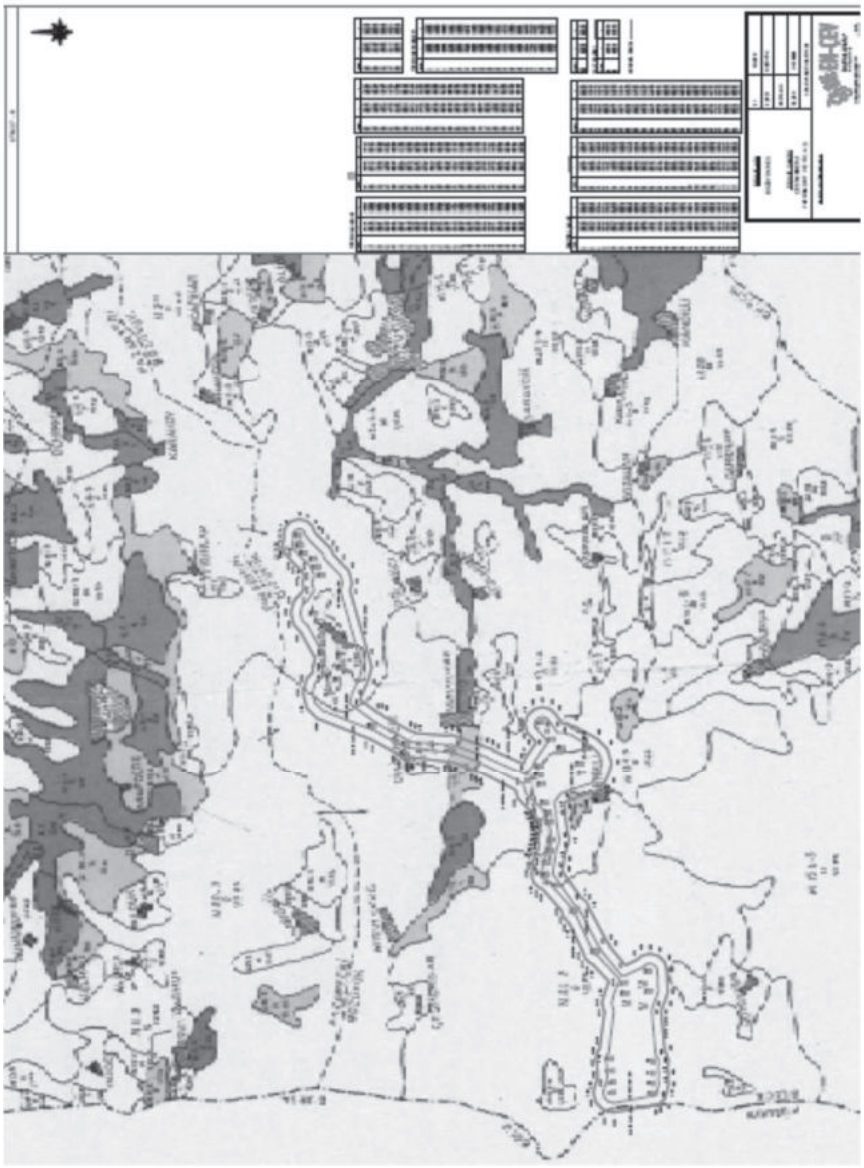


TÜRKİYE HEYELAN ENVANTERİ HARİTASI / LANDSLIDE INVENTORY MAP OF TURKEY
ANKARA
Proje Alanı



ATTACHMENT 2.5

1/100.000 SCALE LAND ASSETS MAP



ATTACHMENT 3

DOCUMENTS PREVIOUSLY OBTAINED FROM THE AUTHORITIES CONCERNING THE PROJECT

3.1 Environmental Impact Assessment not necessary decision document number 678-1139 dated June 19th, 2009

3.2 Production License

3.3 Production License Amendment Petition letter

3.4 Production License Amendment (EPDK)

3.5 Leak proof septic faucet plan

3.6 Business Deadline Plan

3.7 Approved Meteorological Bulletin

- The highest precipitation values observed in standard times

- Peak Situations

ATTACHMENT 3.1

ENVIRONMENTAL IMPACT ASSESSMENT NOT NECESSARY DECISION DOCUMENT NUMBER 678-1139 DATED JUNE 19th, 2009

(logo)
REPUBLIC OF TURKEY
Ministry of Environment and Forestry

REPUBLIC OF TURKEY
GOVERNORSHIP OF BILECIK
PROVINCE DIRECTORATE OF ENVIRONMENT AND FORESTRY

Decision date : June 19th, 2009
Decision number: 678/1139

"ENVIRONMENTAL IMPACT ASSESSMENT CERTIFICATE"

The study- assessment concerning the "90 MW Bozüyük Wind Energy Power Plant" Project enlisted in Attachment II of Regulations for Environmental Impact Assessment enacted by publication in the Official Gazette Issue number 26939 dated July 17th, 2008 was done and the precautionary measures against the environmental impacts foreseen in Project Presentation File were deemed sufficient. Besides, since it was convened that the preparation of an Environmental Impact Assessment Report is not necessary, our Governorship took the "Decision that the Environmental Impact Assessment report in not necessary" pursuant to Clause 17 of the Regulations for the Environmental Impact Assessment".

(official stamp and original signature)
Hakan KUBALI
in name of the Governor
Governor Assistant

Project owner : Çekim Enerji Yatırım Üretim ve Ticaret A.Ş.
Project Location : Pazaryeri/ BILECIK

Note: Turbine coordinates are on the back of the document

1	736970,910	4429825,083
2	737574,642	4430047,511
3	738415,245	4429943,519
4	737233,779	4428964,259
5	738045,496	4429010,478
6	738683,892	4428447,187
7	738848,546	4426764,248
8	737691,922	4427273,809
9	737445,230	4426020,127
10	735140,071	4425437,771
11	735641,544	4424418,648
12	737914,350	4425033,357
13	738852,590	4424430,780
14	740526,863	4425959,464
15	739681,639	4424810,929
16	740668,408	4424070,852
17	741630,913	4424175,999
18	743515,482	4424269,015
19	745185,711	4424875,635
20	742666,213	4424843,282
21	744251,515	4425607,624
22	744757,032	4426473,070
23	745363,653	4427014,985
24	741234,091	4421947,365
25	742685,412	4421461,592
26	743905,841	4422058,313
27	736073,506	4419218,641
28	736862,137	4418846,815
29	735303,712	4430258,399
30	735181,675	4428519,369

(logo)
REPUBLIC OF TURKEY
Ministry of Environment and Forestry

REPUBLIC OF TURKEY
GOVERNORSHIP OF BILECIK
Province Directorate of Environment and Forestry

Number: B18.4.İÇO.4.11.03-ÇED-228.09/678-1139 June 19th, 2009
Subject : Opinion on the Environmental Impact Assessment

ÇEKIM ENERJI YATIRIM ÜRETIM VE TICARET A.Ş.

The Project Presentation File of the **"90 MW Bozüyük Wind Energy Power Plant"** Project planned to be installed pursuant to Clause 15 of the Regulations for the Environmental Impact Assessment in the Bilecik Province, Pazaryeri Sub-province, Bostanlıkm Tepe, Bediralan Tepe, Bayalık Tepe, Yelligedik Tepe, Tuzla Hacıveli Tepe, Yellieğrek Tepe, Araptarlası Tepe position, submitted to our Governorship, was studied and evaluated.

Our Governorship took the **"Decision that the Environmental Impact Assessment report in not necessary"** for **"90 MW Bozüyük Wind Energy Power Plant"** Project the pursuant to Clause 17 of the Regulations for the Environmental Impact Assessment.

Compliance is required with the Project Presentation File and with the issues touched in its attachments and with the Environmental Law number 2872 and the concerned regulations enacted based on this law, it is also required to get all the necessary permissions from the concerned institutions/ enterprises, to submit to our Governorship and to the Ministry of Environment and Forestry the reports regarding the start up, operation and post operation periods of the investment made according to the permissions and permits obtained pursuant to Clause 18 of the Regulations for Environmental Impact Assessment.

For your information and action.

(official stamp and original signature)
Hakan KUBALI
in name of the Governor
Governor Assistant

ATTACHMENTS:
Attachment 1 : Project Presentation File
Attachment 2 : Environmental Impact Assessment not necessary document
Attachment 3 : Project Presentation File (CD)

DISTRIBUTION:
- Ministry of Environment and Forestry Environmental impact assessment and Planning General Directorate (attachment 3)
- Çekim Enerji Yatirim Üretim ve Ticaret A.Ş. (attachment 1, attachment 2, attachment 3)
DOKAY- ÇED Çevre Mühendisliği Ltd Şti. (attachment 1, attachment 3)

ATTACHMENT 3.2

PRODUCTION LICENSE

REPUBLIC of TURKEY
ENERGY MARKET REGULATORY AUTHORITY

PRODUCTION LICENSE

The production facility within the scope of this License utilizes Renewable Energy Sources.

License Number : EÜ/3382-5/2045
Date : August 18th, 2011

This License was given with the decision number 3382/5 dated August 18th, 2011 of the Energy Market Regulatory Authority, to Çekim Enerji Yatırım Üretim ve Ticaret Anonim Şirketi for carrying out production activities as of August 18th, 2011 for a period of 49 years, under the scope of the Bozüyük Wind Energy Power Plant, based on wind energy, in the Province of Bilecik, Sub- province of Pazarköy.

(original signature)

Hasan KÖKTAŞ
President

This License with its general and special provisions is an inseparable whole

GENERAL PROVISIONS

1- Activities able to carry out under license

The license holder may carry out all the market activities subject of license, related to the installation of the facility, commissioning of the facility, production of electrical energy, activities for selling the produced energy and/ or capacity to legal persons licensed for wholesale sales, to legal persons licensed for retail sales and to the free consumers.

2- Basic obligations of the license holder

The License holder fulfills the below basic obligations while carrying out the market activities:

a) To comply with the laws, regulations, communiqués, circulars related to the electricity market, with the decisions of the Energy Market Regulatory Agency and with the provisions of this license,

b) To comply with the provisions of other legislations necessitates by the activity under license,

c) To offer to TEIAŞ and/ or legal persons holders of distribution license, the supplementary services necessary to secure the consistent implementation of the transmission and distribution activities at a price including all the costs related to providing the subject services,

d) To provide the details of the costs relates to the offered services, in case required by the Energy Market Regulatory Agency (Agency),

e) To pay fees to TEIAŞ and/ or legal persons holders of distribution license, operators of the distribution system/ systems, based on the transmission and/ or distribution tariffs estimated pursuant to the provisions of the Electricity Market Tariff Regulations,

f) To communicate the Annual maintenance schedule compliant with the concerned legislation to TEIAS and/ or to the distribution license holder legal persons carrying out activities in the region where the production facilities under this license are located,

g) To keep the production facility under this license in the functional status suitable for fulfilling the obligations undertaken in the market, except for the force majeure circumstances and the planned annual maintenance schedule,

h) In case any unscheduled maintenance due to situations caused by unpredictable breakdowns or situations predisposed to breakdowns, except the force majeure situations, is done without any notice to TEIAS and/ or to the distribution license holder legal persons carrying out activities in the region where the production facilities under this license are located, a justified notification will be sent to the Agency in order to provide the prevention of any negative impact on the market and to give information about the out of order status,

i) In case the force majeure situations, except the planned annual maintenance schedule and unplanned maintenances, require stopping the production activities, to send the petition requesting the approval for stopping the production activities to the Agency at least one hundred twenty days prior to the requested stop date,

j) To follow all the instructions given by the Electricity Market Network Regulations related to the fulfillment of the obligations assumed by the National Load Dispatching Center regarding the system security, within the frame of force majeure situations and other situations under the TEIAS license and other related legislation provisions, that create threat for the system stability and security,

k) To follow the instruction given by the National Load Dispatching Center related to the fulfillment of the obligations assumed regarding the system security or to bear, within the frame of the financial settlement regulations, the costs incurred by not dispatching the electrical energy due to the system restrictions,

l) To give the load pick up and load relieve offers to the Market Financial Settlement Center just in time pursuant to the Balancing and Settlement Regulations and to follow properly the load pick up and load relief instructions given by the National Load Dispatching Center,

m) To report in writing to the Agency the the facts that hinder or jeopardize carrying the activities under this license, the impact of these facts upon the activities under license, the measures taken to minimize or eliminate these impacts and in which time and under which circumstances the impacts will be completely overcome.

n) To submit to the Market Financial Settlement Center the information and documents required within the frame of the Balancing and Settlement Regulations,

o) To submit all the information about the free consumers, to whom electrical energy and/ or capacity is sold, to the distribution license holder legal persons carrying business activity in the region where the free consumers are located,

p) To keep the production facility, the legal ledgers and records ready for auditing any time within the frame of the legislation provisions, to open then to audit upon demand and to submit to the Agency in time all kinds of information and documents required by the Agency for carrying its own activity.

3- Counter Installation

The License holder is obliged to install the counters foreseen by legislation in order to be able to sell electrical energy and/ or capacity through bilateral agreement and/ or partnership relation.

4- Annual License Fee

The annual License Fee attested pursuant to the concerned provisions of the Electricity Market License Regulations is remitted by the license holder to the Agency account.

5- Other fees

The license holder remits the license renewal fee, license amendment fee and the license multiplication fee to the Agency account, pursuant to the concerned provisions of the Electricity Market License Regulations.

6- License amendment

This License may be amended upon the license holder's demand or in situation imposed by the implementations within the scope of the concerned legislation or in case of legal changes.

Any license amendment done upon the license holder's demand or in situation imposed by the implementations within the scope of the concerned legislation, should not contain any provisions deteriorating the free competition terms.

In case the license holder needs a certain time for fulfilling the new and/ or additional obligations due to the license amendment, the subject period is determined by the Agency decision and is mentioned in the license amendment.

In case time extension is requested by the license holder for completing the installation, but for reasons not caused by the license holder legal person, the time extension application can be sent before the expiry of the time given for each phase of the installation completion time. Should the justification presented by the legal person be deemed appropriate, the periods foreseen for the completion of installation will be extended within the frame of the license amendment.

7- License renewal

The license holder should apply in writing to the Agency for license renewal maximum one year, minimum 9 months prior to the expiry date of the license.

8- License Expiry

This license expires by itself in case the license holders goes bankrupt or at the end of its validity if not extended and in case the license holder demands its termination, it expires upon the Council decision.

In case the license holder demands the termination of the activity under license, the application should be submitted in writing to the Agency together with the justifications, minimum one hundred eighty days prior to the requested termination date. Under this application, the obligations assumed by the license holder at the requested termination date and the measures foreseen for the fulfillment of these obligations are to explain. If the Council will need any additional information and documents necessary for being able to take a decision regarding the termination request, the Agency will request them from the license holder.

If the termination of this license is found suitable by the Council decision taken after the assessment done, the validity will be terminated at the requested date. If the Council decides the termination of the license will create a disadvantageous situation for the consumers and market circumstances, it will inform the license holder presenting the arguments and will postpone the requested expiry date to another future date.

With the approval of the Council, the license holder may sell, transfer the production facility under license or transfer it to another legal person willing to continue the activity under license by another arrangement. The legal person who will take over the production facility in this way, should get a license from the Agency prior to the actualization of the transfer. The license of the legal person who will take over the production facility under this license, will be enacted as soon as the transfer proceedings are completed and this license is terminated.

9- The assignment of the rights under license

The license holder will be able to assign the rights under this license to the third parties only after getting the permission of the Agency.

10- Cancellation of the license

This license can be cancelled only pursuant to the provisions of Clause 11 of the Law number 4628 and within the frame of the Electricity Market License Regulations.

11- Invalidation of the rights and obligations under this license

As long as not specified in the special provisions of this license or as loons as the license is not expired or cancelled, the license holder's right and responsibilities under this license are valid.

12- Safety

The license holder takes measures for the protection of the environment and of the occupational health and work safety.

The license holder operates the production facility safely and takes all the safety measures required within the frame of the legislation provisions.

The license holder takes all the measures necessary to prevent any possible damages to the public, environment, real and legal persons, to prevent life and property losses during the construction period, as well as during the investment period.

13- Separation of accounts and the cross subvention ban

The license holder keeps separate accounts for the activities carried out under the general provisions and special provisions of this license and for the activities carried outside the market and does not establish any cross subvention between these activities.

14- Auditing

In case the audit outcome reveals that the financial status of the license holder has deteriorated to the extend that is threatens the safe continuity of the activity under license and/ or the fulfillment of the undertaken obligations, and this is determined also by the audit report prepared with the condition of getting the license holder's defense, the license holder will take all the measures compliant with the Council decision in order to prevent any outcomes to the disadvantage of the consumers and of the market conditions.

The Council might decide that license holder's activities and implementations, as well as transactions, accounts and financial statements are audited by independent audit companies and/ or persons or institutions compatible for technical audit. The fee of such auditing services will be on the license holder's account. However, if deemed necessary by the Agency, the auditing can be done on the Agency's account.

15- Resolution of disputes

The disputes between the license holder and TEIAS and the distribution license holder legal persons regarding the implementation of link and system utilization agreement provisions or not being able to reach a consensus on the amendment to do on the agreement provisions, will be solved within the frame of the concerned legislation provisions. The decision taken by the Council within maximum thirty days will be bounding for then parties.
The court cases initiated by the license holder against the Council decisions will be carried to the State Council as the court of first instance.

16- Urgent action

In force majeure cases and in extraordinary situations the license holder can take the necessary measures when she/ he believes that action must be taken regarding any matter that would disrupt basically the effective operation of the facility under this license. The license holder will inform in detail the event that required urgent action and the measures taken to the Agency and pursuant to the concerned legislation provisions to TEIAS and/ or the distribution license holder legal persons, within seven days from the date the event had occurred.

17- Service outsourcing

The license holder may proceed with outsourcing regarding the services under this license. This situation does not imply the transfer of the license holder's obligations under this license.

18- Share transfer

Pursuant to the concerned legislation provisions, the license holder is obliged to get the Agency's approval concerning any changed to do in the partnership structure. If the Council approves the partnership change, then this license will be amended.

19- The merger of legal persons

In case another legal person, holder of a license, is willing to take over all the actives and passives of the license holder as a whole, it is obligatory to get the Agency's approval. If the Agency approves the merger application, then this license will be cancelled.

20- Notifications

All the notifications made reciprocally between the license holder and the Agency will be made pursuant to the provisions of the Communiqué Law number 7201, to the address added to the license special provisions.

Any changes of the notification address will be communicated to the Agency minimum three working days prior to the actualization of the change. In case the notification is not sent during the foreseen period, then all the notifications sent to the old address between the date of address change and the notification date are valid.

21- Interpretation of terms, concepts and abbreviations

As long as the contrary is not stipulated explicitly in the general and special provisions of this license, the terms, concepts and abbreviations mentioned in this license will carry the meaning defined in the legislation concerning the electricity market.

22- Implementation of the license provisions

The controversies and disputes regarding the implementation of the provisions of this license will be solved according to the decisions taken by the Council.

SPECIAL PROVISIONS

1- Information about the production facility

This License was granted for the production facility owned by Çekim Enerji Yatırı Üretim ve Ticaret Anonim Şirketi and about which the information is below:

Province	: Bilecik
Sub- province	: Pazarköy
Notification address	: Turan Güneş Bulvarı 15. Cad. No. 11 Yıldız/ Çankaya Ankara
Type of the facility	: Renewable
Energy source	: Wind
Number of units	: 30
Installed unit power	: 3.000 Kw
Total installed facility power	: 90 MW
Foreseen average annual production	: 323.000.000 kWh/ year
System link point and voltage levels	: Bozüyük OSB TM, 154 kV
Facility completion period	: 70 months
Facility completion date	: June 18th, 2017

2- Enforcement of the license

This license comes into force on the date of August 18th, 2011 and the rights and obligations of the license holder become valid from the date the license comes into force.

The company will submit the application for the project approval to the Ministry of Energy and natural Resources until the end of the pre-construction period.

3- Validity of the license

This License is valid for 49 (forty nine) years starting on the date of August 18th, 2011.

4- Real and legal shareholder persons who are holding directly or indirectly 10 percent or more of the legal entity

Direct shareholder partners:	Share ratio (%)
- Türkerler İnşaat Turizm Madencilik Enerji Üretim Ticaret ve Sanayi A.Ş.	50
- Kazım TÜRKER	49,4
Indirect shareholder partners:	**Share ratio (%)**
_ Kazım TÜRKER (including his spouse and children)	49,8

5- The sheet/sheets names of the facility location, unit coordinates and power plant corner coordinates

Name of the 1/25.000 sheet name : Kutahya-i23-b1, Kütahya-i23-a2, Kütahya-i23-b2

Unit coordinates

	E	N
T1	736970,910	4429825,083
T2	737574,642	4430047,511
T3	738415,245	4429943,519
T4	737233,779	4428964,259
T5	738045,496	4429010,478
T6	738683,892	4428447,187
T7	738848,546	4426764,248
T8	737691,922	4427273,809
T9	737445,230	4426020,127
T10	735140,071	4425437,771

	E	N
T16	740668,408	4424070,852
T17	741630,913	4424175,999
T18	743515,482	4424269,015
T19	745185,711	4424875,635
T20	742666,213	4424843,282
T21	744251,515	4425607,624
T22	744757,032	4426473,070
T23	745363,653	4427014,985
T24	741234,091	4421947,365
T25	742685,412	4421461,592

T11	735641,544	4424418,648
T12	737914,350	4425033,357
T13	738852,590	4424430,780
T14	740526,863	4425959,464
T15	739681,639	4424810,929

T26	743905,841	4422058,313
T27	736073,506	4419218,641
T28	736862,137	4418846,815
T29	735303,712	4430258,399
T30	735181,675	4428519,369

Power plant corner coordinates:

	E	N
K1	735277,959	4431162,081
K2	737606,936	4430945,803
K3	738472,760	4430838,691
K4	738870,536	4430732,107
K5	739203,833	4430398,810
K6	739308,292	4430008,964
K7	739582,270	4428482,939
K8	739656,059	4427271,995
K9	740956,872	4426750,164
K10	742683,289	4425777,963
K11	743522,261	4426143,521
K12	743997,902	4426957,820
K13	744250,871	4427210,788
K14	744917,038	4427805,898
K15	745363,653	4427925,568
K16	745818,944	4427803,573
K17	746152,241	4427470,276
K18	746266,950	4427042,175
K19	746082,449	4424823,967
K20	745988,699	4424474,085
K21	744676,079	4421584,671
K22	744382,581	4421291,174
K23	743091,103	4420659,714
K24	742685,412	4420551,009
K25	742298,898	4420654,575

	E	N
K27	740493,927	4421443,650
K28	738684,843	4423565,145
K29	738517,787	4423609,907
K30	736275,271	4423538,637
K31	736664,683	4419932,644
K32	737337,328	4419615,503
K33	737650,725	4419302,106
K34	737772,720	4418846,815
K35	737650,725	4418391,524
K36	737317,428	4418058,227
K37	736862,137	4417936,232
K38	736458,520	4418044,381
K39	735598,315	4418449,953
K40	735284,918	4418763,350
K41	735162,923	4419218,641
K42	735284,918	4419673,932
K43	735466,081	4419855,095
K44	735042,945	4423773,367
K45	734874,679	4423941,634
K46	734338,291	4425031,712
K47	734239,537	4425400,267
K48	734281,817	4428531,904
K49	734406,468	4430308,178
K50	734515,124	4430713,690
K51	734848,421	4431046,987

6- License amendments

Amendment		
Item number	Date and Number	Coverage
1	Council decision number 3649 dated January 18th, 2012 and Consent number 295 dated March 1st, 2912 of the Agency Presidency	**Status before amendment;** Facility completion period : 48 months (16 months for the pre-construction period and 32 months for the construction period) Facility completion date : August 18th, 2015 **Status after amendment;** Facility completion period : 60 months (22 months for the pre-construction period and 38 months for the construction period) Facility completion date : August 18th, 2016 Pursuant to the Presidency Consent the pre-construction period was changed to be 22 months, the construction period to be 38 months and the facility completion date to be August 18th, 2015
2	Council decision number 5317 dated November 25th, 2014 and Consent number 295 dated March 1st, 2912	**Status before amendment;** Facility completion period : 60 months (22 months for the pre-construction period and 38 months for the construction period) Facility completion date : August 18th, 2016

	of the Agency Presidency	**Status after amendment;** Facility completion period : 70 months Facility completion date : June 18th, 2017 Within the scope of the Temporary Clause 9 of the Electricity Market Law number 6446 and of the Temporary Clause 15, article two paragraph (a) of the Electricity Market License Regulations the pre-construction period was amended to be May 2nd 2014 and, under the Consent number 5317-2 dated November 25th, 2014 of the Agency Presidency, 10 more months were added to the pre- construction period that was amended to be March 2nd, 2017. Consequently, the facility completion date also was amended taking into consideration the 10 months additional period.

ATTACHMENT 3.3

PRODUCTION LICENSE AMENDMENT APPLICATION LETTER

Number: TUR/MER/NRJ/ARB/572 September 1st, 2016
Subject : Request for changing the location of the Bozüyük Wind Energy Power Plant

REPUBLIC of TURKEY
ENERGY MARKET REGULATORY AGENCY
Head of the Electricity Market Department

Ref.: a) Opinion letter number 5766 dated July 31st, 2012 of the Bilecik Directorate of Forstry Administrations
b) Our company request letter number 57651 dated April 27th , 2016 for changing the facility location
c) Our company request letter number 59961 dated August 22nd , 2016 for changing the facility location

Our company holds the Production License number EÜ/3382-5/2045 dated August 18th, 2011 for the Bozüyük Wind Energy Power Plant of 90 MW power, planned to install in the Bilecik Province, Pazarköy Sub- province.

At the stage of getting the required permissions, the Bilecik Directorate of Forstry Administrations informed in their letter under ref a) they think that the actualization of the subject project is inconvenient because there are bonitet fertile grove forests in the planned area of the project.

However, our Company took into consideration the opinion of the Bilecik Directorate of Forstry Administrations and prepared a new settlement plan for our project and requested and area change with our letter under ref b).

On the other side, as pointed out in our letter under ref c), we abandoned some part of our power plant area presented in our letter under ref b) that was within the borders of the Bursa Province and revised the power plant area and the turbine locations. Moreover, the turbine types were changed and now there are 40 turbines GE 103-1.7 and 8 turbines GE 120-2.75.

Due to the reasons above explained, we would kindly request the amendment of our License of the Bozüyük Wind Energy Power Plant, so that is covers the revised power plant area, turbine locations and turbine specifications of which the information and documents are submitted attached to this letter.

(barcode of the Energy Market Regulation Authority)

Respectfully
Çiğdem POYRAZOĞLU
(signature over company stamp)

Attachments:
1) Opinion letter number 5766 dated July 31st, 2012 of the Bilecik Directorate of Forstry Administrations (ref a)
2) Our company request letter number 57651 dated April 27th , 2016 for changing the facility location (ref b)
3) Our company request letter number 59961 dated August 22nd , 2016 for changing the facility location (ref c)
3) Information Sheet of the Production Facility based on Wind Energy (4 sheets)
4) Declaration that the facility change does not result in the infringement of any rights (1 sheet)
5) 1/25000 scale map showing the location of the production facility
6) CD (4 pieces)

REPUBLIC of TURKEY
MINISTRY OF FORESTRY AND WATER AFFAIRES
Bursa Province Directorate of Forestry Bilecik Directorate of Forstry Administrations

July 31st, 2012

Number : B.23.1.OGM.1.09.20.00.08.255.99/S766
Subject : Land Development Plan (Çekim Enerji Yatırım, Üretim ve Tic.A.Ş.)

BILECIK SPECIAL PROVINCIAL ADMINISTRATION
(Land development and Urban Improvement Directorate)

Ref. : a) Letter number 5446 dated June 27th, 2012 of the Bilecik Special Provincial Administration Land development and Urban Improvement Directorate
b) Letter number 2316-8693 dated July 11th, 2012 of Bursa Province Directorate of Forestry

The public agencies were requested their opinion regarding the preparation of the land development plan to prepare regarding the Production activity of the "BOZÜYÜK WIND ENERGY POWER PLANT" project that Çekim Enerji Yatırım, Üretim ve Tic.A.Ş plans to actualize within the civil borders of the Pazaryeri Sub- province, Bilecik Province.

Since 1/5000 and 1/1000 scale Master Development and Implementary Development plans will be made in the subject areas defined together with the draft development plan and its coordinates on the map attached to the letter under ref a), the opinion of our agency was requested concerning the suitability of planning the mentioned place as a Wind Energy Power Plant Production Center.

The subject matters were studied by the Cadastre Properties Chief and Pazaryeri Forestry Administration Chief under the leadership of the Assistant Manager of our Unit and the report issued after the evaluation of the results is submitted attached.

For your information and action.

Necdet Öztürk (original signature)
Unit Manager

ATTACHMENTS:
1. 1 Study Report

DISTRIBUTION :
For action:
- Bilecik Special Province Administration
- Bursa Regional Directorate of Forestry

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OPINION REPORT

DIRECTIVE **:** The directive number B.23.1.OGM.1.09.20.00.08.255.99/5379 DATED July 19th, 2012 of the Bilecik Forestry Administration Directorate

SUBJECT : The public agecy was requested its opinion concerning the suitability of planning the mentioned place as a Wind Energy Power Plant Production Center since a land development plan is to prepare regarding the Production activity of the "BOZÜYÜK WIND ENERGY POWER PLANT" project consisting of 30 turbines that Çekim Enerji Yatırım, Üretim ve Tic.A.Ş plans to actualize within the civil borders of the Pazaryeri Sub- province, Bilecik Province.

STUDY AND CONCLUSION: The study of directive letter of the Bilecik Forestry Administration Directorate and its attachments and of the CD contents revealed that the Bozüyük Wind Energy Power Plant project is located in the task area of the Muratdere, Bozüyük and Pazaryeri Forestry Administration sub divisions of our Bilecik Forestry Administration Directorate and Inegöl Central Administration Subdivision of the Inegöl Forestry Administration Directorate. It was observed that the major part of the project area is in the Pazaryeri Forestry Administration task area, in the Bozcaarmut, Sarıdayı Villages and in the Pazaryeri sub-province Center. The forest areas of the Pazaryeri Forestry Administration in the mentioned Bozcaarmut, Sarıdayı Villages and in the Sub-province Center civil borders are bonitet fertile grove forests. In case the forest areas, where the project is planned, will be administered as forestry exploitations, they will provide more economic revenues than the Wind Energy Power plant. Furthermore the project area has a specific local climate and special mixed forests important from ecological viewpoint and is hosting wildlife that is an important factor for preserving the ecological equilibrium. It is obvious that, in case the project actualizes, it will have a negative impact on the forests within the public borders of Bozcaarmut, Sarıdayı villages and Pazaryeri Sub-province center, that are forests with special ecological importance and high economic value, as well as on the areas outside the project area .

Due to the above reasons, the place is unsuitable for planning a wind energy power plant production center from the forestry point of view.

We prepared and undersigned this opinion report ourselves. July 26th, 2012

(original signature)	(original signature)	(original signature)
Ahmet ÖZDEMIR Assistant Manager signature	Alper AKSU Cadastre Property Chief signature	Sabri SATIS Pazaryeri Forestry Administration Chief signature

Number: TUR/MER/NRJ/ARB/308 April 27th, 2016
Subject : Request for changing the location of the Bozüyük Wind Energy Power Plant

REPUBLIC of TURKEY
ENERGY MARKET REGULATORY AGENCY
Head of the Electricity Market Department

Ref.: a) Our company License application number 47773 dated November 11th , 2007
b) Our company bank receipt number 580851 dated December 26th , 2007 of the License application fee
c) Opinion letter number 5766 dated July 31st, 2012 of the Bilecik Directorate of Forestry Administration

Our company holds the Production License number EÜ/3382-5/2045 dated August 18th, 2011 for the Bozüyük Wind Energy Power Plant of 90 MW power, planned to install in the Bilecik Province, Pazarköy Sub- province.

We made our License application dated November 11th, 2007 as per the ref a) and paid the License application fee as per ref b). Within this context, Bilecik Directorate of Forestry Administration in their letter under ref c) pointed out that, since there are Level I Bonitet fertile grove forests in the area of project implementation, the actualization of the project is not suitable.

Taking into consideration the opinion mentioned above of the Bilecik Directorate of Forestry Administration, our Company prepared a revised location plan within the borders of the power plant shown in our production license, but outside the grove forest area declared unsuitable by the Bilecik Directorate of Forestry Administration. Within this scope, in the revised plan of the Bozüyük Wind Energy Power Plant of 90 MW power, the number of turbines increased from 30 to 90 without any change in the installed power.

We kindly request the amendment of our present production license in line with the area and turbine locations indicated for the Bozüyük Wind Energy Power Plant.

Respectfully
Ali Rıza BEŞERLER
(signature over company stamp)

ATTACHMENTS :

1. Letter of Bilecik Directorate of Forestry Administration dated July 26th, 2012 (ref c)

2. Our company License application number 47773 dated November 11th , 2007 (ref a)

3. Our company bank receipt number 580851 dated December 26th , 2007 of the License application fee (ref b)

4. Chart with the information required according to the Regulations about the Technical Assessment of the Applications for License for Production based on Wind Energy (4 sheets).

5. 1/25000 scale Sheet indicating the new location of the Power Plant (4 sheets)

6. Declaration showing that there is no right infringement (1 sheet)

7. CD containing the attachments (4 pieces)

Number: TUR/MER/NRJ/ARB/558 August 22nd, 2016
Subject : Request for changing the location of the Bozüyük Wind Energy Power Pant

REPUBLIC of TURKEY
ENERGY MARKET REGULATORY AGENCY
Head of the Electricity Market Department

Ref.: Our company letter number 57651 dated April 27th, 2016 requesting the Amendment of the Facility Location

Our company holds the Production License number EÜ/3382-5/2045 dated August 18th, 2011 for the Bozüyük Wind Energy Power Plant of 90 MW power, planned to install in the Bilecik Province, Pazarköy Sub- province.

In our reference we requested from your agency the amendment of the facility location of our Bozüyük Wind Energy Power Plant.

On the other side, due to the zone restrictions, we abandoned the section of our power plant area that işs inside the borders of the Bursa Province and revised the power plant area and the turbine locations. Besides, we changed the types of the turbines used in our project and rearranged them as 40 turbines GE103-1.7 and 8 turbines GE120-2.75.

We would like to inform you that for the reasons explained above, we will submnit the revised project of our new location until the date of September 2nd, 2016.

(barcode of the Energy Market Regulation Authority)

Respectfully
Çiğdem POYRAZOĞLU
(signature over company stamp)

Attachments:
1) Notary attested Mandate, Signature Circular, Signature declaration

INFORMATION SHEET FOR THE PRODUCTION FACILITY BASED ON WIND ENERGY

Applicant legal person		ÇEKİM ENERJİ YATIRIM ÜRETİM VE TİCARET A.Ş.
Applicant legal person's correspondence information and e-mail address		Turan Güneş Bulvarı, Galip Erdem Caddesi No.:11, Çankaya/ Ankara cekimenerji@hs02.kep.tr
Name of the facility		BOZÜYÜK WIND ENERGY POWER PLANT
Location of the Production Facility	Province	BILECIK
	Sub- province	BOZÜYÜK
Number of units		48 pieces
Installed power of the units		40 pieces of 1.7 MWm each, 8 pieces of 2.75 MWm each
Total installed power of the production facility [1]		90 MWm 90 MWe
Maximum production volume of the current installed power [2]		323.000.000 kWh/ year
Link point or link zone of the foreseen system [3]		BOZÜYÜK OSM TM
Current physical status of the production facility [4]		PROJECT
Name of the sheet/ sheets of the location of the planned production facility		KÜTAHYA İ23-a3, KÜTAHYA İ23-b1, KÜTAHYA İ23-b2, KÜTAHYA İ23-b3, KÜTAHYA İ23-b4
Foreseen project capacity factor [5]		41%

TURBINE INFORMATION

Turbine number	Unit coordinates (UTM 6 degrees- ED 50 Datum)		Unit Power (MWm)	Hub Height (m)	Turbine rotor blade diameter (m)	Turbine location zone middle longitude (6 degrees ED50)
	East (right value)	North (upward value)				
T1	735503.000	4414966.000	1.7	80	103	27
T2	735841.000	44149664.000	1.7	80	103	27

T3	736207.000	4415010.000	1.7	80	103	27
T4	736596.000	4415036.000	1.7	80	103	27
T5	735480.000	4413643.000	1.7	80	103	27
T6	735798.005	4413677.020	1.7	80	103	27
T7	736125.000	4413686.000	1.7	80	103	27
T8	736516.000	4413686.000	1.7	80	103	27
T9	738405.592	4414484.473	1.7	80	103	27
T10	738719.806	4414529.691	1.7	80	103	27
T11	739067.000	4414568.000	1.7	80	103	27
T12	738295.000	4413935.000	1.7	80	103	27
T13	738792.559	4413756.569	1.7	80	103	27
T14	739034.143	4413943.839	1.7	80	103	27
T15	739451.240	4413785.493	1.7	80	103	27
T16	740104.646	4415514.571	2.75	85	120	27
T17	741422.332	4416211.831	2.75	85	120	27
T18	742593.000	4417142.000	1.7	80	103	27
T19	742962.000	4417093.000	1.7	80	103	27
T20	743360.000	4416977.000	1.7	80	103	27
T21	743719.000	4416925.000	1.7	80	103	27
T22	744292.000	4416986.000	1.7	80	103	27
T23	744610.000	4417033.000	1.7	80	103	27
T24	744919.252	4417158.380	1.7	80	103	27
T25	745540.606	4417260.059	1.7	80	103	27
T26	745829.648	4417352.754	1.7	80	103	27
T27	746168.918	4417351.147	1.7	80	103	27
T28	745938.682	4415931.358	1.7	80	103	27
T29	746241.823	4415998.076	1.7	80	103	27
T30	746749.000	4416611.000	1.7	80	103	27
T31	747045.540	4416925.317	1.7	80	103	27
T32	747530.027	4417295.223	1.7	80	103	27
T33	746341.284	4419176.674	2.75	85	120	27
T34	746733.343	4420279.321	2.75	85	120	27
T35	746882.290	4421698.131	2.75	85	120	27
T36	747486.042	4422797.557	2.75	85	120	27
T37	748537.609	4424136.460	1.7	80	103	27
T38	748985.313	4423914.712	1.7	80	103	27
T39	749383.235	4423815.779	1.7	80	103	27
T40	751156.000	4424683.000	1.7	80	103	27
T41	751803.422	4424269.265	1.7	80	103	27
T42	752126.000	4424305.000	1.7	80	103	27
T43	752388.119	4424441.045	1.7	80	103	27
T44	752662.000	4424600.000	1.7	80	103	27

T45			1.7	80	103	27
T46			1.7	80	103	27
T47			2.75	85	120	27
T48			2.75	85	120	27

POWER PLANT AREA INFORMATION

Power Plant area Corner number	Corner coordinates of the power plant area (UTM 6 degrees – ED 50 Datum)		Middle longitude of the corner zone (6 degrees – ED 50)
	East (right value)	North (upwards value)	
K1	753373.979	4425761.726	27
K2	753557.310	4425712.602	27
K3	753726.332	4425719.654	27
K4	753948.292	4425660.180	27
K5	754135.178	4425473.294	27
K6	754203.584	4425218.003	27
K7	754135.178	4424962.711	27
K8	753948.292	4424775.825	27
K9	753826.576	4424743.211	27
K10	753721.024	4424664.109	27
K11	753396.966	4424339.896	27
K12	753230.292	4424173.222	27
K13	753076.172	4424131.926	27
K14	752768.321	4423840.046	27
K15	752531.292	4423603.017	27
K16	752126.001	4423494.420	27
K17	751878.553	4423560.723	27
K18	749788.257	4422963.722	27
K19	749383.235	4422855.196	27
K20	748957.363	4422969.309	27
K21	748436.737	4423202.908	27
K22	748330.918	4423231.262	27
K23	747905.557	4422664.014	27
K24	747880.399	4422570.022	27
K25	747801.123	4422490.702	27
K26	747307.527	4421585.967	27
K27	747276.647	4421470.593	27
K28	747245.081	4421439.010	27
K29	747161.766	4420379.615	27
K30	747188.635	4420279.448	27
K31	747145.163	4420117.031	27

K32	746772.472	4419086.744	27
K33	746735.641	4418949.139	27
K34	746665.053	4418878.513	27
K35	746237.939	4417921.209	27
K36	746301.309	4417874.495	27
K37	746419.496	4417842.827	27
K38	746944.263	4417487.215	27
K39	747107.797	4417636.355	27
K40	747250.619	4417779.177	27
K42	747530.028	4417854.044	27
K43	747809.438	4417779.177	27
K44	748013.980	4417574.635	27
K45	748088.847	4417295.225	27
K46	748013.980	4417015.816	27
K47	747848.340	4416850.176	27
K48	747551.282	4416639.589	27
K49	747546.620	4416562.623	27
K50	747462.435	4416248.440	27
K51	747047.174	4415491.248	27
K52	746722.115	4415166.190	27
K53	746241.823	4415037.496	27
K54	745807.538	4415153.862	27
K55	745532.546	4415296.785	27
K56	745278.267	4415551.045	27
K57	745200.218	4415842.284	27
K58	744964.213	4416508.382	27
K59	744855.786	4416586.313	27
K60	744783.927	4416569.023	27
K61	744610.001	4416522.420	27
K62	744493.640	4416553.598	27
K63	743881.164	4416457.871	27
K64	743719.001	4416414.420	27
K65	743535.620	4416463.556	27
K66	743276.699	4416544.041	27
K67	743229.744	4416556.608	27
K68	742904.023	4416597.955	27
K69	742810.424	4416623.035	27
K70	742677.605	4416633.998	27
K71	741828.931	4416030.036	27
K72	741816.689	4415984.296	27
K73	741650.086	4415817.602	27
	741532.192	4415785.978	27

K74	740409.804	4415197.788	27
K75	740332.400	4415120.342	27
K76	740245.233	4415096.960	27
K77	739633.705	4414593.184	27
K78	739825.613	4414174.484	27
K79	739935.192	4414064.905	27
K80	740010.060	4413785.496	27
K81	739935.192	4413506.086	27
K82	739730.650	4413301.544	27
K83	739497.187	4413238.988	27
K84	738759.552	4413206.597	27
K85	738574.992	4413256.049	27
K86	738201.551	4413401.223	27
K87	738144.772	4413416.437	27
K88	736824.481	4413297.014	27
K89	736771.292	4413243.825	27
K90	736541.870	4413182.351	27
K91	736250.870	4413209.146	27
K92	736152.886	4413182.892	27
K93	735925.891	4413200.707	27
K94	735798.005	4413166.440	27
K95	735620.538	4413213.992	27
K96	735402.533	4413272.119	27
K97	735284.180	4413303.831	27
K98	735140.829	4413447.182	27
K99	735106.185	4413576.477	27
K100	734843.815	4414977.800	27
K101	734929.392	4415297.176	27
K102	735171.827	4415539.612	27
K103	735503.001	4415628.349	27
K104	735768.701	4415557.155	27
K105	735930.819	4415498.755	27
K106	735996.197	4415481.237	27
K107	736448.151	4415506.969	27
K108	736596.001	4415546.585	27
K109	736851.292	4415478.180	27
K110	736908.985	4415420.487	27
K111	738110.150	4415265.895	27
K112	738405.592	4415345.058	27
K113	738772.183	4415246.831	27
K114	739110.417	4415120.301	27
K115	739691.970	4415673.664	27

K116	739710.290	4415742.112	27
K117	739876.893	4415908.805	27
K118	740001.007	4415942.098	27
K119	741023.825	4416423.864	27
K120	741027.976	4416439.372	27
K121	741194.579	4416606.066	27
K122	741409.568	4416663.735	27
K123	742126.328	4417305.878	27
K124	742150.823	4417397.294	27
K125	742337.709	4417584.180	27
K126	742593.001	4417652.585	27
K127	742773.603	4417604.193	27
K128	742865.178	4417577.642	27
K129	742962.001	4417603.585	27
K130	743217.292	4417535.180	27
K131	743295.623	4417456.849	27
K132	743444.141	4417409.740	27
K133	743475.035	4417401.471	27
K134	743582.775	4417399.084	27
K135	743719.001	4417435.585	27
K136	743974.292	4417367.180	27
K137	744001.053	4417340.420	27
K138	744027.686	4417343.653	27
K139	744064.247	4417380.234	27
K140	744203.908	4417417.697	27
K141	744421.986	4417493.207	27
K142	744500.102	4417514.138	27
K143	744524.409	4417526.901	27
K144	744575.173	4417577.664	27
K145	744757.728	4417789.363	27
K146	745060.315	4418091.950	27
K147	745335.093	4418165.577	27
K148	745915.201	4419285.675	27
K149	745946.928	4419404.215	27
K150	746010.776	4419468.098	27
K151	746293.361	4420222.128	27
K152	746278.052	4420279.198	27
K153	746312.565	4420408.145	27
K154	746452.346	4421603.514	27
K155	746426.999	4421698.006	27
K156	746487.934	4421925.668	27
K157	746567.210	4422004.988	27

K158	747060.806	4422909.723	27
K159	747075.043	4422962.915	27
K160	747717.655	4424628.688	27
K161	748057.318	4424968.351	27
K162	748537.610	4425097.045	27
K163	749017.901	4424968.351	27
K164	749222.887	4424763.366	27
K165	749420.478	4424766.383	27
K166	749669.845	4424699.565	27
K167	750541.339	4425175.617	27
K168	750750.709	4425384.988	27
K169	751156.001	4425493.585	27
K170	751561.292	4425384.988	27
K171	751781.081	4425165.199	27
K172	751931.005	4425063.336	27
K173	752126.001	4425115.585	27
K174	752358.058	4425053.406	27
K175	752497.161	4425108.234	27
K176	752557.620	4425168.694	27
K177	752708.905	4425335.740	27
K178	752795.088	4425421.923	27
K179	752909.769	4425521.005	27
K180			27

WIND MEASUREMENT STATION INFORMATION			
Wind Measurement Station number	Coordinates of the Wind Measurement Station (UTM 6 degrees – ED 50 Datum)		Middle longitude of the Wind Measurement Station (6 degrees – ED 50)
	East (right value)	North (upwards value)	

SWITCHYARD INFORMATION			
Switchyard Coordinates	Coordinates of the Switchyard (UTM 6 degrees – ED 50 Datum)		Middle longitude of the Switchyard (6 degrees – ED 50)
	East (right value)	North (upwards value)	
ŞM	746430.000	4416292.000	27

ÇEKİM ENERJİ YATIRIM ÜRETİM VE TİCARET A.Ş.

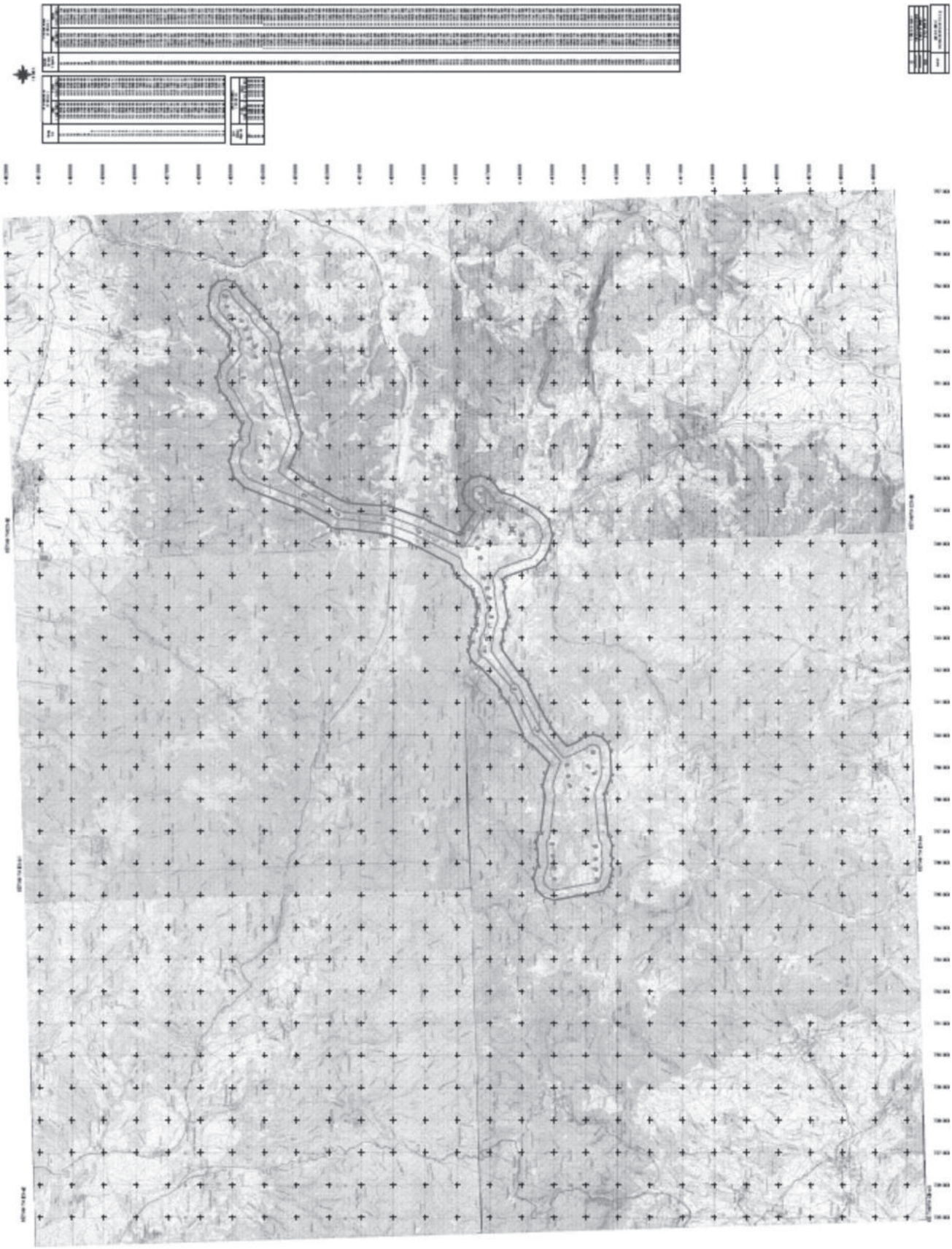
90 MW BOZÜYÜK WIND ENERGY POWER PLANT

DECLARATION ABOUT NO INFRINGEMENT OF RIGHTS CONCERNING THE FACILITY AMENDMENT

We declare that there is no infringement of the third persons' rights concerning the amendment of the Production License number EÜ/3382-5/2045 dated August 18[t]

[h], 2012 of the 90 mw Bozüyük Wind energy Power Plant of our company Çekim Enerji Yatirim Üretim ve Ticaret A.Ş. requested from your Agency according to the provisions of article nine of Clause 24 of the Electricity Market License Regulations and the second article of the Temporary Clause 9, amendment being due to the location change of the facility subject of the production license. **September 1st, 2016.**

Respectfully
Çiğdem POYRAZOĞLU
(signature over company stamp)



ATTACHMENT 3.4

AMENDMENT OF THE PRODUCTION LICENSE (ENERGY MARKET REGULATORY AGENCY)

(logo)

REPUBLIC of TURKEY
ENERGY MARKET REGULATORY AGENCY
Head of the Electricity Market Department

Number: 32380407-110.01.01.01.01

Subject : Bozüyük Wind Energy Power Plant

To ÇEKİM ENERJİ YATIRIM ÜRETİM VE TİCARET ANONİM ŞİRKETİ
Turan Güneş Bulvarı, Galip Erdem Caddesi No.:11, Çankaya/ Ankara

Ref.: a) Your letter dated June 23rd , 2014, barcode BG6PLHNK
a) Your letter dated January 26th, 2016, barcode BGND09EU
a) Your letter dated April 27th, 2016, barcode BG4978BZ
a) Your letter dated September 1st , 2016, barcode BGK4FP83

Attached is the Agency decision number 6776-16 taken on December 22nd, 2016 concerning your request written in your referred letters for changing the power plant area in your production license number EÜ/3382-5/2045 dated August 18th, 2011 given for the Bozüyük Wind Energy Power Plant of 90 MWm/ 90MWe planned to install in the Bilecik Province, Pazarköy Sub- province. (Attachment 1)

The Agency decision number 6776-16 taken on December 22nd, 2016 foresees to make the amendment of the license by the Agency provided that the Company declares the fulfillment of its following obligations to the Agency :

* In **90 (ninety) days** from the date when the decision to take within the scope of the Environmental Impact Assessment Regulations , informing that the obligation related to the license amendment is deemed suitable was communicated to the Company,

* In case the project is assessed within the scope of the List of Projects requiring Environmental Impact Assessment of the Environmental Impact Assessment Regulations, to submit the Council decision in **1 (one) year** from the date when the decision taken by the Council within the scope of the Environmental Impact Assessment Regulations is communicated to the Company,

* To present the Technical Interaction Permission pursuant to the Electricity Market License Regulations within **180 (one hundred eighty) days** from the date when this obligation was communicated to the Company,

and in case the Company fails to fulfill its obligations within the stipulated period, the Agency decides that the license amendments application is to be considered rejected.

For your information and action,

Electronic signature
Haci Ali ULUTAŞ
i.a. President
Head of Agency

Attachment: Agency decision number 6776-16 dated December 22nd, 2016

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REPUBLIC of TURKEY
ENERGY MARKET REGULATORY AGENCY

DECISION MODEL

MEETING DATE : December 22nd, 2016
DECISION NUMBER : 6776-16

Within the frame of the consultation number 32380407-110.01.01.01-48169 dated December 15th, 2016 of the Energy Market Agency Presidency to the presidency Authority concerning the production license number EÜ/3382-5/2045 dated August 18th, 2011 granted **to ÇEKİM ENERJİ YATIRIM ÜRETİM VE TİCARET ANONİM ŞİRKETİ (Company)** for the **Bozüyük Wind Energy Power Plant Project**;

- Among the License special provisions the following were changed as below:
  - the facility sub- province from *"Pazarköy"* to "*Bozüyük"*,
  - the number of units from "*30 (thirty)"* to "*48(forty eight)",*
  - the installed power from *"3000 kW"* to *"(40 x 1,7 MWm/MWe + 8 x 2.75 MWm/MWe),"*
  - the system link and voltage level from *"Bozüyük OSB TM, 154kV*" to ***"154kV, Seyitömer-Bzüyük TM EİH input – output link"***,
  - the name of the 1/25.000 scale sheet from *"Kütahya I23-b1, Kütahya I23-a2, Kütahya I23-b2"* to "*Kütahya I23-a3, Kütahya I23-b1, Kütahya I23-2, Kütahya I23-b3, Kütahya I23-b4*",
  - the facility completion period from "70 (seventy) months" to total 74 (seventyfour) months of which 36 (thirty six) month are for the pre-construction and 38 (thirty eight) months are for the construction period",
  - the unit coordinates from

	E	N		E	N
T1	736970,910	4429825,083	T16	740668,408	4424070,852
T2	737574,642	4430047,511	T17	741630,913	4424175,999
T3	738415,245	4429943,519	T18	743515,482	4424269,015
T4	737233,779	4428964,259	T19	745185,711	4424875,635
T5	738045,496	4429010,478	T20	742666,213	4424843,282
T6	738683,892	4428447,187	T21	744251,515	4425607,624
T7	738848,546	4426764,248	T22	744757,032	4426473,070
T8	737691,922	4427273,809	T23	745363,653	4427014,985
T9	737445,230	4426020,127	T24	741234,091	4421947,365
T10	735140,071	4425437,771	T25	742685,412	4421461,592
T11	735641,544	4424418,648	T26	743905,841	4422058,313
T12	737914,350	4425033,357	T27	736073,506	4419218,641
T13	738852,590	4424430,780	T28	736862,137	4418846,815
T14	740526,863	4425959,464	T29	735303,712	4430258,399
T15	739681,639	4424810,929	T30	735181,675	4428519,369

To

	E	N		E	N
T1	735503,000	4414966,000	T25	745540,606	4417260,059
T2	735841,000	4414964,000	T26	745829,648	4417352,754
T3	736207,000	4415010,000	T27	746168,918	4417351,147
T4	736596,000	4415036,000	T28	745938,682	4415931,358
T5	735480,000	4413643,000	T29	746241,823	4415998,076
T6	735798,005	4413677,020	T30	746749,000	4416611,000

T7	736125,000	4413686,000		T31	747045,540	4416925,317
T8	736516,000	4413686,000		T32	747530,027	4417295,223
T9	738405,592	4414484,473		T33	746341,284	4419176,674
T10	738719,806	4414529,691		T34	746733,343	4420279,321
T11	739067,000	4414568,000		T35	746882,290	4421698,131
T12	738295,000	4413935,000		T36	747486,042	4422797,557
T13	738792,559	4413756,569		T37	748537,609	4424136,460
T14	739034,143	4413943,839		T38	748985,313	4423914,712
T15	739451,240	4413785,493		T39	749383,235	4423815,779
T16	740104,646	4415514,571		T40	751156,000	4424683,000
T17	741422,332	4416211,831		T41	751803,422	4424269,265
T18	742593,000	4417142,000		T42	752126,000	4424305,000
T19	742962,000	4417093,000		T43	752388,119	4424441,045
T20	743360,000	4416977,000		T44	752662,000	4424600,000
T21	743719,000	4416925,000		T45	752925,000	4424702,000
T22	744292,000	4416986,000		T46	753099,490	4425028,854
T23	744610,000	4417033,000		T47	753373,978	4425151,140
T24	744919,252	4417158,380		T48	753693,000	4425218,000

- the Power Plant corner coordinates from

To

	E	N			E	N
K1	735277,959	4431162,081		K27	740493,927	4421443,650
K2	737606,936	4430945,803		K28	738684,843	4423565,145
K3	738472,760	4430838,691		K29	738517,787	4423609,907
K4	738870,536	4430732,107		K30	736275,271	4423538,637
K5	739203,833	4430398,810		K31	736664,683	4419932,644
K6	739308,292	4430008,964		K32	737337,328	4419615,503
K7	739582,270	4428482,939		K33	737650,725	4419302,106
K8	739656,059	4427271,995		K34	737772,720	4418846,815
K9	740956,872	4426750,164		K35	737650,725	4418391,524
K10	742683,289	4425777,963		K36	737317,428	4418058,227
K11	743522,261	4426143,521		K37	736862,137	4417936,232
K12	743997,902	4426957,820		K38	736458,520	4418044,381
K13	744250,871	4427210,788		K39	735598,315	4418449,953
K14	744917,038	4427805,898		K40	735284,918	4418763,350
K15	745363,653	4427925,568		K41	735162,923	4419218,641
K16	*745818,944*	*4427803,573*		*K42*	*735284,918*	*4419673,932*
K17	746152,241	4427470,276		K43	735466,081	4419855,095
K18	746266,950	4427042,175		K44	735042,945	4423773,367
K19	746082,449	4424823,967		K45	734874,679	4423941,634
K20	745988,699	4424474,085		K46	734338,291	4425031,712
K21	744676,079	4421584,67		K47	734239,537	4425400,267
K22	744382,581	4421291,174		K48	734281,817	4428531,904
K23	743091,103	4420659,714		K49	734406,468	4430308,178
K24	742685,412	4420551,009		K50	734515,124	4430713,690
K25	742298,898	4420654,575		K51	734848,421	4431046,987
K26	740771,898	4421165,679				

	E	N			E	N
K1	753373,979	4425761,726		K91	736250,870	4413209,146

K2	753557,310	4425712,602		K92	736152,886	4413182,892
K3	753726,332	4425719,654		K93	735925,891	4413200,707
K4	753948,292	4425660,180		K94	735798,005	4413166,440
K5	754135,178	4425473,294		K95	735620,538	4413213,992
K6	754203,584	4425218,003		K96	735402,533	4413272,119
K7	754135,178	4424962,711		K97	735284,180	4413303,831
K8	753948,292	4424775,825		K98	735140,829	4413447,182
K9	753826,576	4424743,211		K99	735106,185	4413576,477
K10	753721,024	4424664,109		K100	734843,815	4414977,800
K11	753396,966	4424339,896		K101	734929,392	4415297,176
K12	753230,292	4424173,222		K102	735171,827	4415539,612
K13	753076,172	4424131,926		K103	735503,001	4415628,349
K14	752768,321	4423840,046		K104	735768,701	4415557,155
K15	752531,292	4423603,017		K105	735930,819	4415498,755
K16	752126,001	4423494,420		K106	735996,197	4415481,237
K17	751878,553	4423560,723		K107	736448,151	4415506,969
K18	749788,257	4422963,722		K108	736596,001	4415546,585
K19	749383,235	4422855,196		K109	736851,292	4415478,180
K20	748957,363	4422969,309		K110	736908,985	4415420,487
K21	748436,737	4423202,908		K111	738110,150	4415265,895
K22	748330,918	4423231,262		K112	738405,592	4415345,058
K23	747905,557	4422664,014		K113	738772,183	4415246,831
K24	747880,399	4422570,022		K114	739110,417	4415120,301
K25	747801,123	4422490,702		K115	739691,970	4415673,664
K26	747307,527	4421585,967		K116	739710,290	4415742,112
K27	747276,647	4421470,593		K117	739876,893	4415908,805
K28	747245,081	4421439,010		K118	740001,007	4415942,098
K29	747161,766	4420379,615		K119	741023,825	4416423,864
K30	747188,635	4420279,448		K120	741027,976	4416439,372
K31	747145,163	4420117,031		K121	741194,579	4416606,066
K32	746772,472	4419086,744		K122	741409,568	4416663,735
K33	746735,641	4418949,139		K123	742126,328	4417305,878
K34	746665,053	4418878,513		K124	742150,823	4417397,294
K35	746237,939	4417921,209		K125	742337,709	4417584,180
K36	746301,309	4417874,495		K126	742593,001	4417652,585
K37	746419,496	4417842,827		K127	742773,603	4417604,193
K38	746944,263	4417487,215		K128	742865,178	4417577,642
K39	747107,797	4417636,355		K129	742962,001	4417603,585
K40	747250,619	4417779,177		K130	743217,292	4417535,180
K41	747530,028	4417854,044		K131	743295,623	4417456,849
K42	747809,438	4417779,177		K132	743444,141	4417409,740
K43	748013,980	4417574,635		K133	743475,035	4417401,471
K44	748088,847	4417295,225		K134	743582,775	4417399,084
K45	748013,980	4417015,816		K135	743719,001	4417435,585
K46	747848,340	4416850,176		K136	743974,292	4417367,180
K47	747551,282	4416639,589		K137	744001,053	4417340,420
K48	747546,620	4416562,623		K138	744027,686	4417343,653
K49	747462,435	4416248,440		K139	744064,247	4417380,234
K50	747047,174	4415491,248		K140	744203,908	4417417,697
K51	746722,115	4415166,190		K141	744421,986	4417493,207
K52	746241,823	4415037,496		K142	744500,102	4417514,138
K53	745807,538	4415153,862		K143	744524,409	4417526,901

K54	745532,546	4415296,785	K144	744575,173	4417577,664
K55	745278,267	4415551,045	K145	744757,728	4417789,363
K56	745200,218	4415842,284	K146	745060,315	4418091,950
K57	744964,213	4416508,382	K147	745335,093	4418165,577
K58	744855,786	4416586,313	K148	745915,201	4419285,675
K59	744783,927	4416569,023	K149	745946,928	4419404,215
K60	744610,001	4416522,420	K150	746010,776	4419468,098
K61	744493,640	4416553,598	K151	746293,361	4420222,128
K62	743881,164	4416457,871	K152	746278,052	4420279,198
K63	743719,001	4416414,420	K153	746312,565	4420408,145
K64	743535,620	4416463,556	K154	746452,346	4421603,514
K65	743276,699	4416544,041	K155	746426,999	4421698,006
K66	743229,744	4416556,608	K156	746487,934	4421925,668
K67	742904,023	4416597,955	K157	746567,210	4422004,988
K68	742810,424	4416623,035	K158	747060,806	4422909,723
K69	742677,605	4416633,998	K159	747075,043	4422962,915
K70	741828,931	4416030,036	K160	747717,655	4424628,688
K71	741816,689	4415984,296	K161	748057,318	4424968,351
K72	741650,086	4415817,602	K162	748537,610	4425097,045
K73	741532,192	4415785,978	K163	749017,901	4424968,351
K74	740409,804	4415197,788	K164	749222,887	4424763,366
K75	740332,400	4415120,342	K165	749420,478	4424766,383
K76	740245,233	4415096,960	K166	749669,845	4424699,565
K77	739633,705	4414593,184	K167	750541,339	4425175,617
K78	739825,613	4414174,484	K168	750750,709	4425384,988
K79	739935,192	4414064,905	K169	751156,001	4425493,585
K80	740010,060	4413785,496	K170	751561,292	4425384,988
K81	739935,192	4413506,086	K171	751781,081	4425165,199
K82	739730,650	4413301,544	K172	751931,005	4425063,336
K83	739497,187	4413238,988	K173	752126,001	4425115,585
K84	738759,552	4413206,597	K174	752358,058	4425053,406
K85	738574,992	4413256,049	K175	752497,161	4425108,234
K86	738201,551	4413401,223	K176	752557,620	4425168,694
K87	738144,772	4413416,437	K177	752708,905	4425335,740
K88	736824,481	4413297,014	K178	752795,088	4425421,923
K89	736771,292	4413243,825	K179	752909,769	4425521,005
K90	736541,870	4413182,351	K180	753068,687	4425679,923

Since the above amendment was deemed suitable and the Licence fee of 34.800 (thirty four thousand eight hundred) TL pursuant to Clause 43 of the Electricity Market License Regulations was paid and the documents proving that this amount was deposited in the Agenbcy Bank accounts were submitted to the agency with the barcode BGNFEAZ9Z dated February 19th, 2016 and BGNDHVK7 dated December 13th, 2016, decision was to approve the amendments on the condition :

- To present the decision expected to take within the scope of the Environmental Impact Assessment Regulations,

within **90 (ninety) days** from the date when the license amendment suitability is communicated to the Company,

-In case the project is assessed within the scope of the List of Projects requiring Environmental Impact Assessment of the Environmental Impact Assessment Regulations, to submit the the Council decision in **1 (one) year** from the date when decision is taken by the Council within the scope of the Environmental Impact Assessment Regulations is communicated to the Company,

REPUBLIC of TURKEY
ENERGY MARKET REGULATORY AGENCY

- To present the Technical Interaction Permission pursuant to the Electricity Market License Regulations within **180 (one hundred eighty) days** from the date when this obligation was communicated to the Company

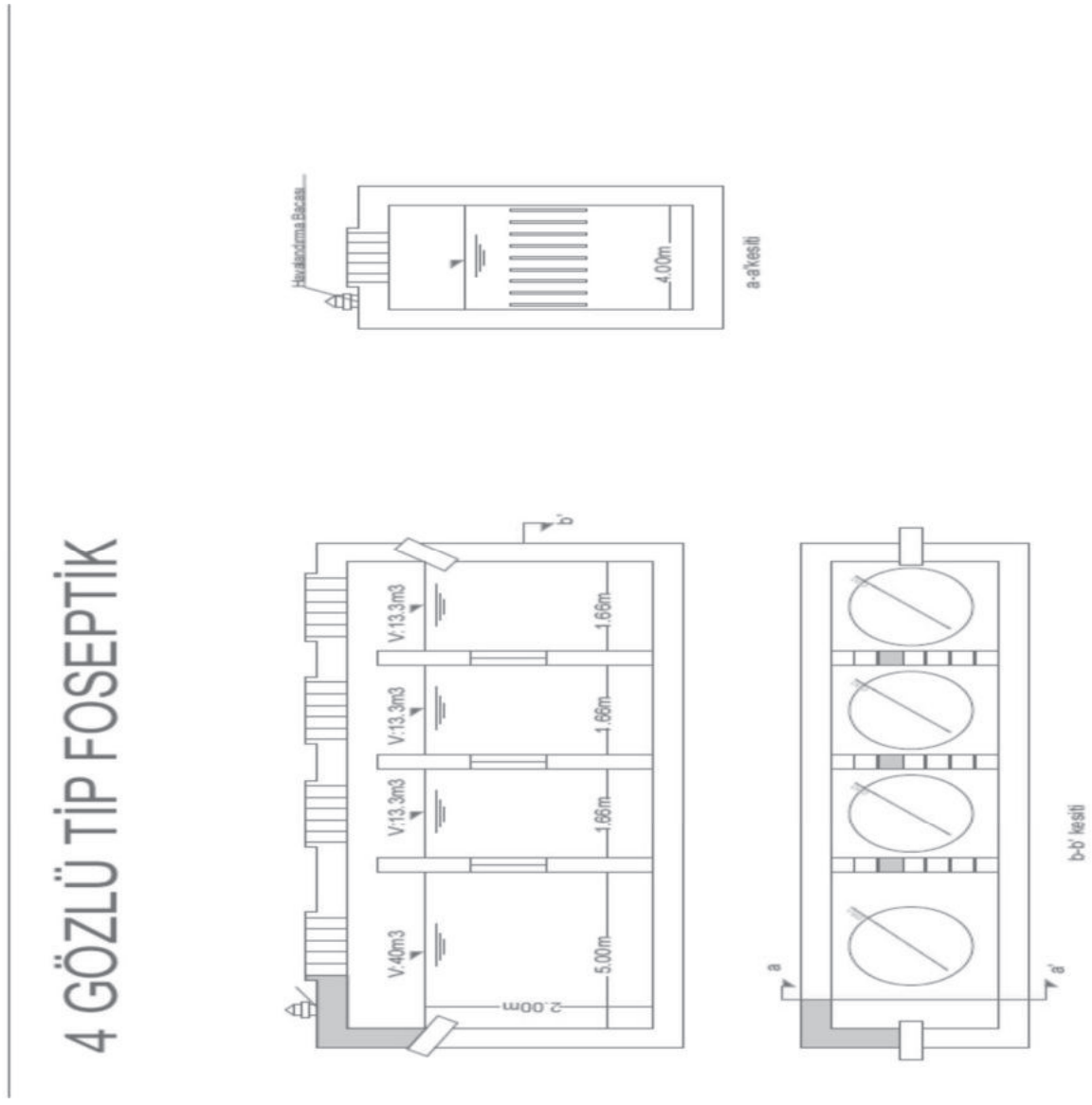
and in case the Company fails to fulfill its obligations within the stipulated period, the Agency decides that the license amendments application is to be considered **rejected,**

- and decided that the fulfillment of the Company obligations within the scope of the first article of Clause 9 of the Electricity Market Law number 6446 and the second article of the temporary Clause 15 of the Regulations will be evaluated at the end of the preconstruction period defined after the location change and the necessary procedure will be implemented .

Mustafa YILMAZ (signature)
President

ATTACHMENT 3.5

LEAK PROOF SEPTIC FAUCET PLAN



SEPTIC FAUCET WITH 4 SECTIONS

ATTACHMENT 3.6

BUSINESS DEADLINE PLAN

BOZÜYÜK WIND ENERGY POWER PLANT (90 MW)
BUSINESS DEADLINE PLAN

Nr.	PROJECT DETAILS	
LICENSE AMENDMENT PROCEEDING AND PROCEDURES		
I	Getting the permission for technical interaction analysis	
II	Getting the Environmental Impact Assessment Positive Decision Document	
III	Finalization of the License amendments	
PRECONSTRUCTION PERIOD (36 MONTHS)		
I	Getting the current ready maps and having the maps approved	
II	Preliminary project tasks	
	- Road projects	
	- Single line scheme	
	- General layout plan	
	- Other technical projects	
III	Permission & Land development & Expropriation tasks	
	- Preparation of files	
	- Getting the agency opinions necessary for development plan preparations	
	- Getting the MIGEM special area permission	
	- Ground study tasks basic for construction	
	- Preparation of the Geological and Geotechnical report basic for land development	
	- Getting the preliminary forestry permission	
	- Getting the approval of the land development plan	
	- Getting the final forestry permission	
	-Projects preliminary approval of ETKB	
	- Expropriation Proceedings	
IV	Signing the Link and System Utilization Agreement with TEIAS	
V	Preparation of the preconstruction Period file and its presentation to EPDK	
CONSTRUCTION PERIOD		
I	Turbine acquisition	
II	Final project tasks	
	- preparation of the electricity projects	
	- road works	
	- installation of the switchyard	
	- preparation of he basic projects	
	- preparation of the energy transmission lines project	
	- getting the approvals of the projects	
III	Construction tasks	
	- collection of the offers and determination of the contractor	
	- road works	
	-installation of the switchyard	
	- energy transmission line Environmental Impact Assessment	
	- turbine foundation works	
	- turbine interconnections	
	- installation and commissioning of the turbines	
	- installation of other equipments	
IV	Commissioning proceedings	
	- tests	
	- trial production	
	- transfer to commercial operations	
	OPERATION PERIOD (49 YEARS)	

ATTACHMENT 3.7

Approved Meteorological Bulletin
- The highest precipitation values observed in standard time
- Peak Situations

(logo)

REPUBLIC of TURKEY
MINISTRY OF FORESTRY AND WATER AFFAIRES
Meteorology General Directorate
Meteorological Data Processing Department

Number : 95579059-107-E.11999 March 26th, 2018
Subject : Meteorological information (Environmental Impact Assessment)

EN-ÇEV ENERJİ ÇEVRE YATIRIMLARI VE DANIŞMANLIĞI
HARİTACILIK İMAR İNŞAAT A.Ş.

Mahatma Gandi Cad. No.: 92/2
06680 Gaziosmanpaşa/ ANKARA

Ref.: Petition dated March 19th, 2018 of En-Çev Enerji Çevre Yatirimlari ve Danışmanlığı registered under number 11275 EBYS

The information requested in your referred petition was extracted from the records of our Bozüyük Meteorology Station and is submitted attached.

For you information

Cemal OKTAR
i.a. General Manager
Head of the Meteorological Data Processing Department

Attachment:
- The highest precipitation values observed at standard times (1 page)
- Precipitation- Intensity- Repetition Curve (1 page)
- Peak (Extraordinary event) report (1 page)

It is the same as the electronically signed original
HÜSEYİN KONANÇ
March 26th, 2018

METEOROLOGY GENERAL DIRECTORATE
THE HIGHEST PRECIPITATION VALUES OBSERVED AT STANDARD TIMES AT
THE BOZÜYÜK METEOROLOGY STATION

OBSERVATION

YEAR MINUTE HOUR

GOZLEM	DAKIKA				SAAT										
YILI	5	10	15	30	1	2	3	4	5	6	8	12	18	24	24 +
2010	3,1	5,6	6,2	6,3	6,9	9,2	10,9	12,2	13,5	13,6	13,6	15,0	15,5	45,5	*
2009	7,2	11,2	15,4	24,4	25,5	26,7	26,7	26,7	26,7	26,8	26,8	26,8	26,8	36,2	
2008	6,2	8,3	10,6	14,4	14,4	14,4	14,4	14,4	14,5	14,5	14,5	14,5	14,5	37,1	*
2007	7,1	10,1	13,3	17,4	17,5	17,6	17,7	17,8	17,8	17,8	21,1	21,3	21,5	29,4	
2006	2,2	4,2	5,8	6,7	7,9	8,2	11,9	12,2	12,2	12,2	13,6	16,3	18,1	18,3	
2005	3,2	6,5	8,4	11,6	11,7	11,8	21,9	22,4	22,6	22,6	27,7	35,8	36,1	56,0	
2004	3,2	5,0	6,2	8,3	8,9	14,6	16,4	16,5	16,5	16,5	16,7	18,1	24,1	42,2	*
2003	3,9	7,0	8,2	10,7	11,7	13,7	13,9	15,2	15,3	15,3	17,9	25,9	31,0	45,5	
2002	8,6	14,5	17,4	26,8	43,3	54,4	55,4	55,4	55,8	56,0	56,1	56,2	56,2	56,2	
2001	2,7	4,2	5,2	6,4	8,0	8,1	9,9	10,2	10,2	10,6	13,2	17,8	19,8	31,8	*
2000	17,6	29,7	41,9	66,5	95,0	110,0	111,2	116,2	116,3	116,3	116,5	116,5	116,6	116,6	
1999	9,4	18,2	22,1	27,1	29,0	30,2	30,2	30,2	30,2	30,3	30,3	30,3	30,3	30,3	
1998	2,9	4,1	6,1	9,3	10,6	12,6	15,6	18,4	20,4	23,8	29,6	30,7	33,5	37,2	
1997	4,5	5,2	6,3	11,4	18,0	22,9	28,0	32,4	33,4	33,4	36,2	41,2	43,6	44,3	
1996	2,1	4,0	6,1	8,2	8,8	8,9	12,0	15,4	15,7	15,7	17,5	19,5	19,9	26,2	
1995	4,1	6,2	6,4	7,9	12,3	15,6	15,9	17,7	18,0	18,0	18,1	18,1	18,7	31,0	
1994	6,5	6,5	6,5	7,2	7,2	9,5	9,5	10,5	11,4	14,0	17,6	21,1	24,0	31,6	
1993	8,2	14,1	16,2	22,9	35,9	38,6	39,5	39,7	39,7	39,7	39,7	39,7	39,8	41,0	
1992	9,3	9,4	9,4	10,3	10,5	12,8	17,6	19,0	19,7	22,7	27,6	30,6	32,6	41,1	
1991	5,0	6,0	6,5	7,7	12,4	19,7	21,6	23,2	23,4	23,7	23,7	27,1	28,8	30,0	
1990	2,5	5,0	5,5	7,4	9,2	11,2	18,0	13,4	14,8	18,4	20,5	23,6	29,8	32,9	
1989	4,8	5,2	5,2	7,8	11,5	13,5	13,6	19,4	20,0	20,0	23,4	31,3	37,6	44,5	
1988	6,8	7,0	7,9	10,1	14,3	17,3	18,3	18,6	18,6	18,8	21,9	22,2	22,7	25,3	
1987	4,1	5,5	7,6	11,2	12,9	14,7	15,0	19,1	21,5	23,6	24,6	25,9	27,9	30,5	
1986	8,5	13,7	14,9	15,0	15,0	16,0	16,5	17,9	18,5	19,4	19,4	19,4	19,4	28,6	
1985	11,6	11,6	11,6	11,6	13,6	19,5	20,0	20,2	20,2	20,2	20,2	20,2	20,2	26,2	
1984	3,5	3,8	3,8	4,0	7,5	13,3	18,7	22,1	24,3	25,4	29,6	41,0	51,6	63,4	
1983	9,3	11,7	15,2	20,8	20,9	20,9	20,9	20,9	21,0	21,3	21,3	21,3	21,3	27,7	
1982	8,7	13,0	17,6	21,4	22,4	22,5	22,5	22,5	22,5	22,5	22,6	22,6	22,6	24,1	
1981	9,2	11,7	15,6	17,0	17,7	17,8	22,2	26,2	28,2	29,3	29,6	30,2	38,4	38,6	
1980	3,2	6,3	8,0	10,6	11,8	13,8	14,2	15,3	17,1	18,2	19,4	19,6	27,5	28,1	
1979	4,3	5,5	7,6	9,2	9,6	16,2	16,5	17,8	18,9	20,8	20,8	21,1	27,6	33,9	
1978	5,5	8,0	12,5	17,0	18,3	18,7	18,9	18,9	19,3	19,3	19,3	19,3	19,3	23,3	
1977	8,2	8,7	9,0	10,4	14,1	14,3	14,6	14,6	15,4	16,4	16,5	20,7	32,9	35,1	
1976	1,8	2,8	3,5	4,6	11,7	12,2	12,6	12,6	12,6	12,6	12,6	12,6	15,3	31,7	*
1975	4,5	8,5	9,0	9,1	9,1	9,3	13,2	13,6	13,7	13,8	13,8	13,8	14,8	27,6	
1974	3,0	5,9	8,4	8,4	9,7	12,5	13,3	14,8	16,1	18,7	25,6	38,2	40,4	40,4	
1973	8,7	9,9	13,4	21,1	24,5	26,5	26,8	26,8	29,8	29,8	29,8	29,8	29,8	29,8	
1972	5,9	10,9	12,2	14,2	22,3	24,1	25,2	25,5	25,5	26,7	29,9	36,6	40,6	40,6	
1971	3,6	7,1	10,2	11,7	12,8	14,5	15,3	19,3	19,8	20,3	21,1	21,1	21,3	24,7	
1970	6,9	7,0	7,0	7,4	7,4	7,8	9,9	11,0	11,5	11,7	12,7	17,1	19,6	34,7	*
1969	3,8	5,7	6,1	8,3	9,3	11,6	11,8	12,8	14,7	14,7	15,7	15,7	15,7	20,2	
1968	10,1	17,6	29,4	29,6	29,5	32,0	37,3	38,0	38,3	38,4	38,4	38,4	38,4	47,8	
1967	3,5	5,4	6,9	7,2	7,2	7,2	7,8	8,0	8,0	9,7	10,0	10,1	12,3	12,5	
1966	7,3	14,6	17,7	22,5	40,3	49,1	52,0	52,0	52,0	52,0	52,0	52,0	52,0	52,6	
1965															
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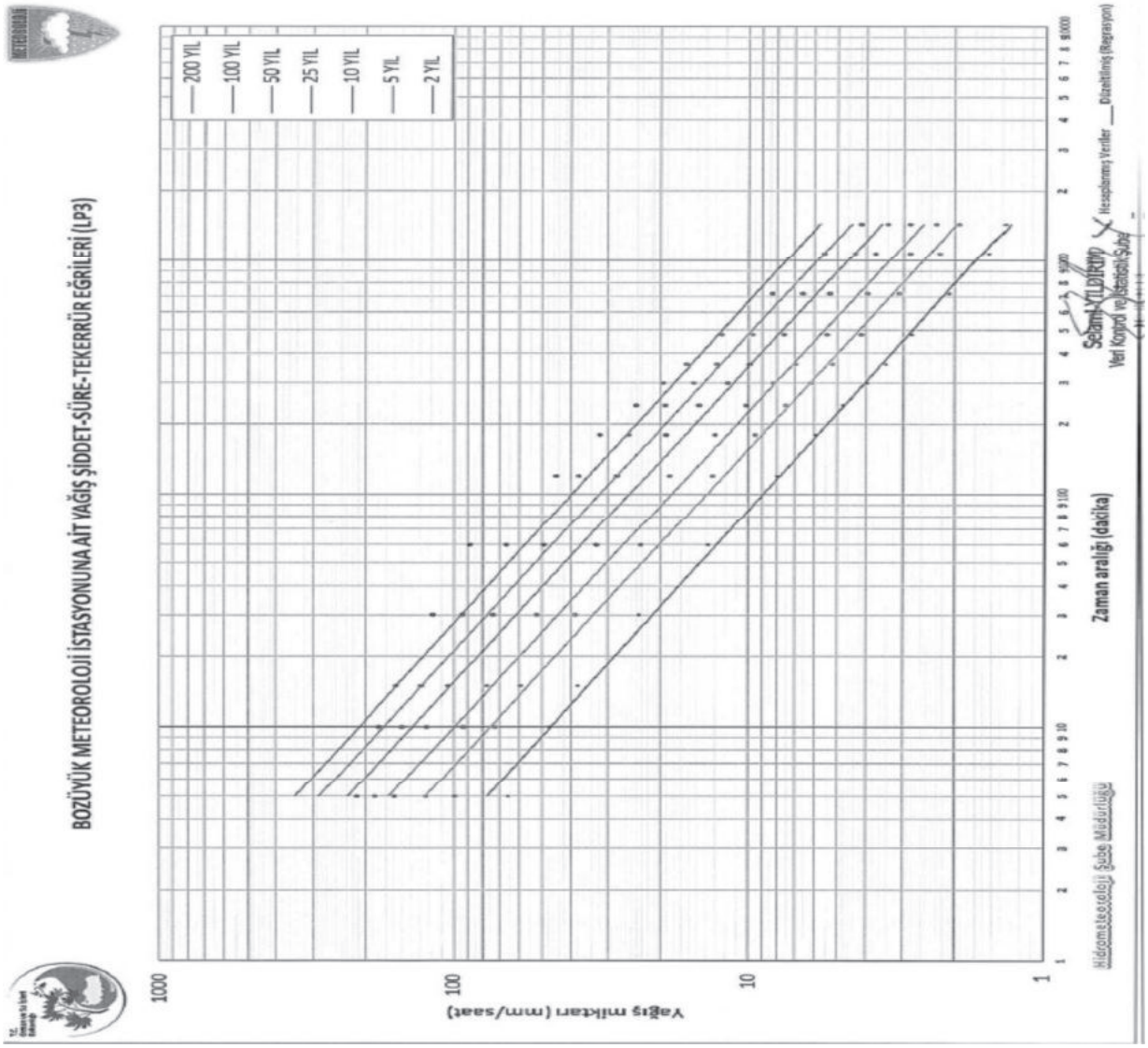
1938															
N	39	39	39	39	39	39	39	39	39	39	39	39	39	39	45
Y-ORT	6,1	9,2	11,3	14,8	18,5	21,3	23,1	24,4	25,0	25,7	27,2	29,4	31,8	36,6	36,7
Y-EB	17,6	29,7	41,9	66,5	95,0	110,0	111,2	116,2	116,3	116,3	116,5	116,5	116,6	116,6	116,6
Std.S	3,17	5,12	6,87	10,71	15,49	17,67	17,78	18,16	18,01	17,76	17,47	17,49	17,50	17,15	16,05
Car.K	1,32	1,94	2,50	3,15	3,49	3,62	3,61	3,77	3,79	3,84	3,82	3,47	3,17	2,83	2,95
UDF	LP3	LP3	LP3	LP3	LP3	LP3	LP3	LP3	LP3	LP3	LP3	LP3	LP3	LP3	LP3
2 YIL	5,4	7,8	9,5	11,8	14,8	15,9	17,8	19,1	19,8	20,5	22,3	24,5	27,3	32,7	33,3
5 YIL	8,3	12,0	14,6	19,3	23,3	26,5	28,5	30,0	30,7	31,2	33,3	36,6	40,2	45,9	46,1
10 YIL	10,4	15,4	19,2	26,0	32,6	37,0	39,0	40,6	41,2	41,5	43,5	47,4	50,8	55,2	56,3
25 YIL	13,2	20,5	28,0	36,8	45,3	51,7	57,4	58,8	59,1	59,4	60,5	63,1	66,9	68,0	70,7
50 YIL	15,4	24,9	32,6	46,7	56,3	64,9	76,0	76,7	77,0	77,0	77,2	78,3	78,6	81,0	82,6
100 YIL	17,7	29,8	39,6	58,6	68,2	89,4	95,5	95,1	97,2	97,3	98,9	99,7	99,8	100,0	100,1
PLF	0,18	0,28	0,35	0,49	0,55	0,73	0,77	0,79	0,80	0,81	0,84	0,89	0,93	1,00	1,02
PLV	0,18	0,27	0,33	0,42	0,50	0,57	0,62	0,66	0,67	0,70	0,74	0,79	0,86	1,00	1,00

Compliant with the records
Selami YILDRIM
Data Control and Statistics Department Head Assistant

PRECIPITATION INTENSITY – DURATION – REPETITION CURVES (LP3) OBSERVED AT THE BOZÜYÜK METEOROLOGY STATION

Precipitation amount (mm/hour)



Compliant with the records
Selami YILDRIM
Data Control and Statistics Department Head Assistant

REPUBLIC of TURKEY
MINISTRY OF FORESTRY AND WATER AFFAIRES
METEOROLOGY GENERAL DIRECTORATE

BOZÜYÜK PEAK EVENTS (EXTRAORDINARY EVENTS) OVER LONG YEARS

YEAR	DATE	PLACE	PROVINCE	EVENT	COMMENTS
1977		BOZÜYÜK	BILECIK	Hail	Hail damagedthe agricultural products
1978		BOZÜYÜK	BILECIK	Hail	Hail damaged the agricultural products
1982		BOZÜYÜK	BILECIK	Rain and flood	Settlement places were damaged by floods
1983		BOZÜYÜK	BILECIK	Snow Blizzard	The highway traffic was disrupted due to snow, settlement places were damaged by storm
2000		BOZÜYÜK	BILECIK	Rain and flood	Floods damaged the agricultural products
2001		BOZÜYÜK	BILECIK	Storm	The storm broke tree branches, damaged houses and work places
2002		BOZÜYÜK	BILECIK	Snow	Trafiic stopped on the roads.
2005		BOZÜYÜK	BILECIK	Stırm	Tree branches were broken
2008		BOZÜYÜK	BILECIK	Storm	Tree branches were broken
2008		BOZÜYÜK	BILECIK	Hail	Trees in blossom have shed.
2008		BOZÜYÜK	BILECIK	Storm	Settlement places were damaged
2009		BOZÜYÜK	BILECIK	Rain and flood	Settlement places were damaged
2009		BOZÜYÜK	BILECIK	Rain and flood	The flood removed the soil
2009		BOZÜYÜK	BILECIK	Sorm	Tree branches were broken
2010		BOZÜYÜK	BILECIK	Storm	Tree branches were broken
2010		BOZÜYÜK	BILECIK	Storm	Tree branches were broken
2010		BOZÜYÜK	BILECIK	Storm	Tree branches were broken
2010		BOZÜYÜK	BILECIK	Storm	The communication and transmission lines were damaged
2011		BOZÜYÜK	BILECIK	Hail	The highway traffic was disrupted
2011		BOZÜYÜK	BILECIK	Hail	Tree branches were broken
2011		BOZÜYÜK	BILECIK	Hail	The vegetable gardens were damaged
2001		BOZÜYÜK	BILECIK	Storm	Tree branches were broken

Compliant with the records
Selami YILDRIM
Data Control and Statistics Department Head Assistant

ATTACHMENT 4

OPINIONS OF THE AUTHORITIES

4.1 General Directorate of Mining Affaires

4.2 Highways the 14th Region Directorate

4.3 State Railways Administration General Directorate Studies and Projects Department Itinerary Branch Directorate

4.4 Republic of Turkey Governorship of Bilecik Environment and Urbanization Province Directorate

4.5 Directorate of Eskişehir Regional Council for the Protection of Cultural Assets

4.6 Dodurga Municipality

4.7 Forestry General Directorate

4.8 Opinion of the Province Directorate of Food, Agriculture and Livestock

4.9 Governorship of Bilecik Directorate of Disaster and Emergency

4.10 Institutional opinion of the Republic of Turkey Province Special Administration

4.11 Minutes of the Public Participation Meeting

ATTACHMENT 4.1

GENERAL DIRECTORATE OF MINING AFFAIRES

(logo)

REPUBLIC OF TURKEY
MINISTRY OF ENERGY AND NATURAL RESOURCES
General Directorate of Mining Affairs

Number : 91510499-101.27.05-E.444892 December 5th, 2017
Subject : Bozüyük Wind Energy Power Plant Revision

EN-ÇEV ENERJİ ÇEVRE YATIRIMLARI VE DANIŞMANLIĞI HARİTACILIK İ MAR İNŞAAT A.Ş.
Mahatma Gandi Cad. No.: 92/2 06680 G.O.P./ ANKARA

Ref.: Your company letter number 91966 dated October 18th, 2017

In your letter referred above, your requested our Agency opinion concerning concerning the installation of the Bozüyük Wind Energy Power Plant within the borders of the Bilecik Province, by Çekim Enerji Yatırım Üretim ve Tic. A. Ş.

The investigations made in the records of our General Directorate revealed that opinion concerning the revised project was requested from our General Directorate with your letter number 19316 dated March 9th, 2017; the reply was sent to Çekim Enerji Yatırım Üretim ve Tic. A. Ş. With our letter number 419388 dated July 7th, 2017; the project area was registered in our records as Bozüyük Wind Energy Power Plant soecial permission area (972,69 ha) number ER:3281236; the investigations conducted on spot within the frame of the coordinates of the revised project area sent attached to the referred petition, demonstrated that turbine number T33 location coincides with the the exploitation permission area of the Group IV Operation Permit zone number S:84965 (ER:3334631); that turbine installation is planned on the reserve area on which the current borings are located; in case turbines will be installed here then the mining operations would not be possible; moreover, the switchyard area of the Wind Energy Power Plant is planned also in the same place; by changing the turbine T33 and the switchyard areas and making a partial revision, both activities can be carried together, and the actualization of the project within the coordinates of the 999,75 ha area consisting of two polygons, the coordinates of which are given attached, is suitable.

The revised project area of the Wind Energy Power Plant was not registered in the records of our General Directorate as area closed to mining but as the **Bozüyük Wind Energy Power** Plant Project special permission area number **ER:3281236 (999,75 ha)**.The mining permit applications to make for this area will be accorded a 1(one) year period for obtaining permission from the concerned authorities pursuant to article three of clause 7 of the Mining Law 3213, and the permit and application holders will be informed that, in case they intend to carry mining activities in this area, they will not be able to start up anything before getting permissions from YEGM or from our General Directorate.

For your information

electronic signature

Murat Halit DURCEYLAN
i.a Minister
Head of Department

Attachment : Coordinates

Area of the identified terrain: 999.95 ha
This information is valid as of the date of November 28th, 2017 16:11:40 hrs
USER: Omer YILDIRIM
Sheets : I23B1, I23B2, I23B3, I23B4

POLİGON 1
Y1: 753693 X1: 4425418
Y2: 753793 X2: 4425391
Y3: 753866 X3: 4425318
Y4: 753893 X4: 4425218
Y5: 753866 X5: 4425118
Y6: 753793 X6: 4425045
Y7: 753693 X7: 4425018
Y8: 753646 X8: 4424982
Y9: 753049 X9: 4424487
Y10: 752512 X10: 4424226
Y11: 752250 X11: 4424090
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Y13: 752002 X13: 4424090
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STATUS: TENDER RESULT

STATUS: TENDER RESULT

(logo) (emblem)

REPUBLIC OF TURKEY
MINISTRY OF ENERGY AND NATURAL RESOURCES
General Directorate of Mining Affairs

Number : 91510499-101.27.99-E.413140 March 15th, 2018
Subject : Bozüyük Wind Energy Power Plant Revision

EN-ÇEV ENERJİ ÇEVRE YATIRIMLARI VE DANIŞMANLIĞI HARİTACILIK İ MAR İNŞAAT A.Ş.
Mahatma Gandi Cad. No.: 92/2 06680 G.O.P./ ANKARA

Ref.: Your petition number 4487 dated January 11th, 2018

In your letter referred above, you informed that the "Bozüyük Wind Energy Power Plant Project" of 90 MW powewr , planned to install within the Bozüyük sub-province has the Production License number EÜ/3382-5/2045 dated August 18th, 2011, that the Wind Energy Power Plant area is to get amended and you requested the revised area to be recorded as special permission area in the system records of our General Directorate.

The investigations made in the records of our General Directorate revealed that opinion concerning the subject project was requested from our General Directorate and the reply was sent with our letter number 444892 dated December 5th, 2017, stating that the project is suitable as two polygons with a total area of 999,75 ha.

The revised project area of the Wind Energy Power Plant was not registered in the records of our General Directorate as area closed to mining but as the **Bozüyük Wind Energy Power** Plant Project special permission area number **ER:3281236 (999,75 ha)**.The mining permit applications to make for this area will be accorded a 1(one) year period for obtaining permission from the concerned authorities pursuant to article three of clause 7 of the Mining Law 3213, and the permit and application holders will be informed that, in case they intend to carry mining activities in this area, they will not be able to start up anything before getting permissions from YEGM or from our General Directorate.

For your information

electronic signature

Murat Halit DURCEYLAN
i.a Minister
Head of Department

SAHA_3281236POLIGON1.txt

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SAHA_3281236POLIGON2.txt

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:745541:4417910
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ATTACHMENT 4.2

THE 14th REGION DIRECTORATE OF HIGHWAYS

GENERAL DIRECTORATE OF HIGHWAYS

(logo)

REPUBLIC OF TURKEY
GENERAL DIRECTORATE OF HIGHWAYS
The 14th Region Directorate of Highways

Number : 84113134-611.02/E.378269 November 13th, 2017
Subject : Bozüyük Wind Energy Power Plant

EN-ÇEV ENERJİ ÇEVRE YATIRIMLARI VE DANIŞMANLIĞI HARİTACILIK İ MAR
İNŞAAT A.Ş.
Mahatma Gandi Cad. No.: 92/2 06680 G.O.P./ ANKARA

Ref.: Your letter number DY/Ç/2017-278 dated October 17th, 2017

In your letter referred above, your requested our Agency opinion concerning the planned installation and operation of the "Bozüyük Wind Energy Power Plant (90 MW) Project" by Çekim Enerji Yatırım Üretim ve Tic. A. Ş. within the borders of the Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bilecik Province.

The study of the 1/25.000 scale topographical map sent attached to the referred letter concluded that the turbines are out of the current and planned State and Province highways, as well as out of the (Ankara- Izmir) Ayr. – Bursa itinerary the project of which is running on, that the minimum distance conditions, defined in the letter number 223836, dated July 4th, 2014 of the General Directorate of Highways, are fulfilled.

For your information.

Murat Olgun ARMUTLU
i.a. Regional Director
Regional Director Assistant

"This document was signed by safe electronic signature"

(logo)

REPUBLIC OF TURKEY
GENERAL DIRECTORATE OF HIGHWAYS
The 14th Region Directorate of Highways

Number : 84113134-045/E.34222 January 25th, 2018
Subject : Bozüyük Wind Energy Power Plant

EN-ÇEV ENERJİ ÇEVRE YATIRIMLARI VE DANIŞMANLIĞI HARİTACILIK İ MAR
İNŞAAT A.Ş.
Mahatma Gandi Cad. No.: 92/2 06680 G.O.P./ ANKARA

Ref.: Your letter number /007 dated January 5th, 2018

In your letter referred above, to which you have attached the corner coordinates and layout plan including the roads between the turbines of the "Bozüyük Wind Energy Power Plant (90 MW) Project" that is planned to be installed and operated by Çekim Enerji Yatırım Üretim ve Tic. A. Ş. within the borders of the Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub- province, Bilecik Province, you requested our Agency opinion necessary for your Environmental Impact Assessment studies.

The turbine locations planned within the project scope remain outside our current and planned highway itineraries. However, the Wind Energy Power Plant project area is in the section between Km:88+000 – Km:90+000 of the Bursa- Eskişehir Highway Project. The mentioned highway section is shown in the attach CD and it is required to keep outside he highway nationalization borders pursuant to the provisions of the Regulations for the Electricity High Voltage Facilities, to comply with the provisions of the Highways Traffic Law, of the regulations and legislation enacted based on this law and at the operation stage of the project to get the approval of our administration for using the highway.

For your information.

Murat Olgun ARMUTLU
i.a. Regional Director
Regional Director Assistant

ATTACHMENT: CD (1 piece)

419

(logo)

REPUBLIC OF TURKEY
MINISTRY OF TRANSPORTATION, NAVIGATION AND COMMUNICATIONS
General Directorate of Highways
Department of Studies, Projects and Environment

Number : 60915996-611.02/E.386504 November 25th, 2018
Subject : Bozüyük Wind Energy Power Plant Project

EN-ÇEV ENERJİ ÇEVRE YAT. DAN. HAR. İMAR İNŞAAT A.Ş.
Mahatma Gandi Cad. No.: 92/2
06680 G.O.P./ ANKARA

Ref.: a) Your letter number /277 dated October 17th, 2017
b) Our letter number 60915996-611.02/162996 dated May 26th, 2017

In your letter under ref a) it is stated that the basic turbine coordinates of the "Bozüyük Wind Energy Power Plant (90 MW) Project" that is planned to be installed and operated by Çekim Enerji Yatırım Üretim ve Tic. A. Ş. within the borders of the Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub-province, Bilecik Province, were revised taking into consideration the issues mentioned in our letter under ref b).

The study based on the newly defined coordinates revealed that the revised turbine coordinates are out of the current and planned State and Province highways, as well as out of the (Ankara- Izmir) Ayr. – Bursa itinerary, the project of which is running on, the minimum distance conditions of our highways are fulfilled.

The following issues have to be indicated in the Environmental Impact Assessment Report of the Project:

* The distance to the line of the roads running parallel to the line within the project scope during the construction and operation phases should be indicated on the 1/25000 scale topographic map,
* To inform if a connection road with the highway will be built within the project scope during the construction and operation phases; if it will be built, to guarantee that an application for getting the permission for building passage roads using the available crossroads, will be submitted to the Highways 14th Region Directorate to obtain their opinion, if no roads will be built to specify this in the report,
* To guarantee that the highways or related facilities (roads, bridges, viaducts, tunnels, etc) will not be damaged during the transportation of the construction materials or during the other works, if any damage would occur this would be born by the project owner within the frame of the protocol to be signed with our the Highways 14th Region Directorate,
* To guarantee that all the required traffic safety measures at the road entry and exit during the construction period will be taken in line with the opinion of the the Highways 14th Region Directorate, *
To guarantee that compliance will be provided with all the laws and regulations passed related to the Traffic Law number 2918 during the construction and operation phases,
* It should be pointed out that, along with compliance with the minimum distance conditions, situations such as turbine parts falling down, ice masses breaking and falling away, will be evaluated by the administrations that approved the plans and projects basic for the construction permit of the Wind Energy Power Plant and gave the construction, building utilization and operation permit, taking into consideration the minimum distance from the road to the closest turbine specified in the law and regulations.

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(logo)

REPUBLIC OF TURKEY
MINISTRY OF TRANSPORTATION, NAVIGATION AND COMMUNICATIONS
General Directorate of Highways
Department of Studies, Projects and Environment

* To get the opinion of our Agency in case there will be any change in the Bozüyük Wind Energy Power Plant or if any project capacity increase will be planned in the coming years, after the actualization of the project.

For your information and action

Mehmet TUTUŞ
i.a. General Manager
Assistant General Manager

ATTACHMENT: Opinion of the Highways the 14th Region Directorate (1 page)

"This document was signed by safe electronic signature"

421

(logo)

REPUBLIC OF TURKEY
MINISTRY OF TRANSPORTATION, NAVIGATION AND COMMUNICATIONS
General Directorate of Highways
Department of Studies, Projects and Environment

Number : 62888455-755.01/ E.67821 February 2nd , 2018
Subject : Bozüyük Wind Energy Power Plant Project

EN-ÇEV ENERJİ ÇEVRE YAT. DAN. HAR. İMAR İNŞAAT A.Ş.

Ref.: Your letter number /006 dated January 5th, 2018

In your letter referred above, you requested our Agency opinion necessary for your Environmental Impact Assessment studies concerning the "Bozüyük Wind Energy Power Plant (90 MW) Project" that is planned to be installed and operated by Çekim Enerji Yatırım Üretim ve Tic. A. Ş. within the borders of the Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub- province, Bilecik Province.

The turbine locations planned within the project scope remain outside our current and planned highway itineraries. However, the Wind Energy Power Plant project area is in the section between Km:88+000 – Km:90+000 of the Bursa- Eskişehir Highway Project. It is required to keep outside he highway nationalization borders pursuant to the provisions of the Regulations for the Electricity High Voltage Facilities, to comply with the provisions of the Highways Traffic Law, of the regulations and legislation enacted based on this law and at the operation stage of the project to get the approval of our administration for using the highway.

For your information and action.

Ibrahim KAYA
i.a. General Manager
Head of the Department of Studies, Projects and Environment

"This document was signed by safe electronic signature"

ATTACHMENT 4.3

State Railways Administration General Directorate
Studies and Projects Department
Itinerary Branch Directorate

(logo)

REPUBLIC of TURKEY
STATE RAILWAYS ADMINISTRATION GENERAL DIRECTORATE
STUDIES AND PROJECTS DEPARTMENT
PLANNING AND COORDINATION BRANCH DIRECTORATE

Number: 99517575-045.01-E.472147 December 11th, 2017
Subject : Bozüyük Wind Energy Power Plant

EN-ÇEV ENERJİ ÇEVRE YAT. LTD.ŞTI.

Ref.: Letter of En-Çev Enerji Çevre Yat. Ltd. Şti number 276 dated October 17th, 2017

The referred letter mentions that the construction of a Wind Energy Power Plant is planned in the Bilecik Province, Bozüyük Sub- province. The results of the studies conducted in the area specified between the kilometers within the scope of the project submitted attached to your letter, show that , as it can be seen in the attached file, our Organization has to take into consideration the Bozüyük Logistic Center Project of which the development plan process is running on. Besides, the distance between the subject area and the closest section of our line was identified is 980 m.

We request you to act according to standard TS 13643 (the passages crossing under or above the fixed assets under the property or the utilization of the concerned railway administration, but that do nor cross the railway line, are out of this scope), to take into consideration that additional line might be built, to protect our borders, to respect the railway corridor widths and approaching distances specified in the circular letter number 828, to comply with the safety distances to keep in the facilities pursuant to the obligatory Standard number TS 11939/T3 of the Ministry of Science, Industry and Technology approved on November 13th, 2014 for railway security, regarding the flammable, explosive materials that could cause threat from the human and goods safety viewpoint and to take the necessary measures for providing the safety of the railway infrastructure.

e- signature
Mustafa KORUCU
Department Head Assistant

e- signature
Muzaffer ERGIŞI
Department Head

Attachments:

1- Development Plan
2- Circular Letter number 828 of the Republic of Turkey State Railways

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(logo)

REPUBLIC OF TURKEY
STATE RAILWAYS ADMINISTRATION GENERAL DIRECTORATE
STUDIES AND PROJECTS DEPARTMENT
ITINERARY BRANCH DIRECTORATE

Number : 8532978-755.01[755.01] E.31.806 January 19th , 2018
Subject : Bozüyük Wind Energy Power Plant Project

EN-ÇEV ENERJİ ÇEVRE YAT. DAN. HAR. İMAR İNŞAAT A.Ş.
(Mahatma Gandi Cad. No.: 92/2 06680 G.O.P./ ANKARA)

Ref.: Your letter number DY/Ç/2018-005 dated January 5th, 2018

In your letter referred above, you requested our Agency opinion concerning the "Bozüyük Wind Energy Power Plant (90 MW) Project" that is planned in the location of the Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub- province, Bilecik Province.

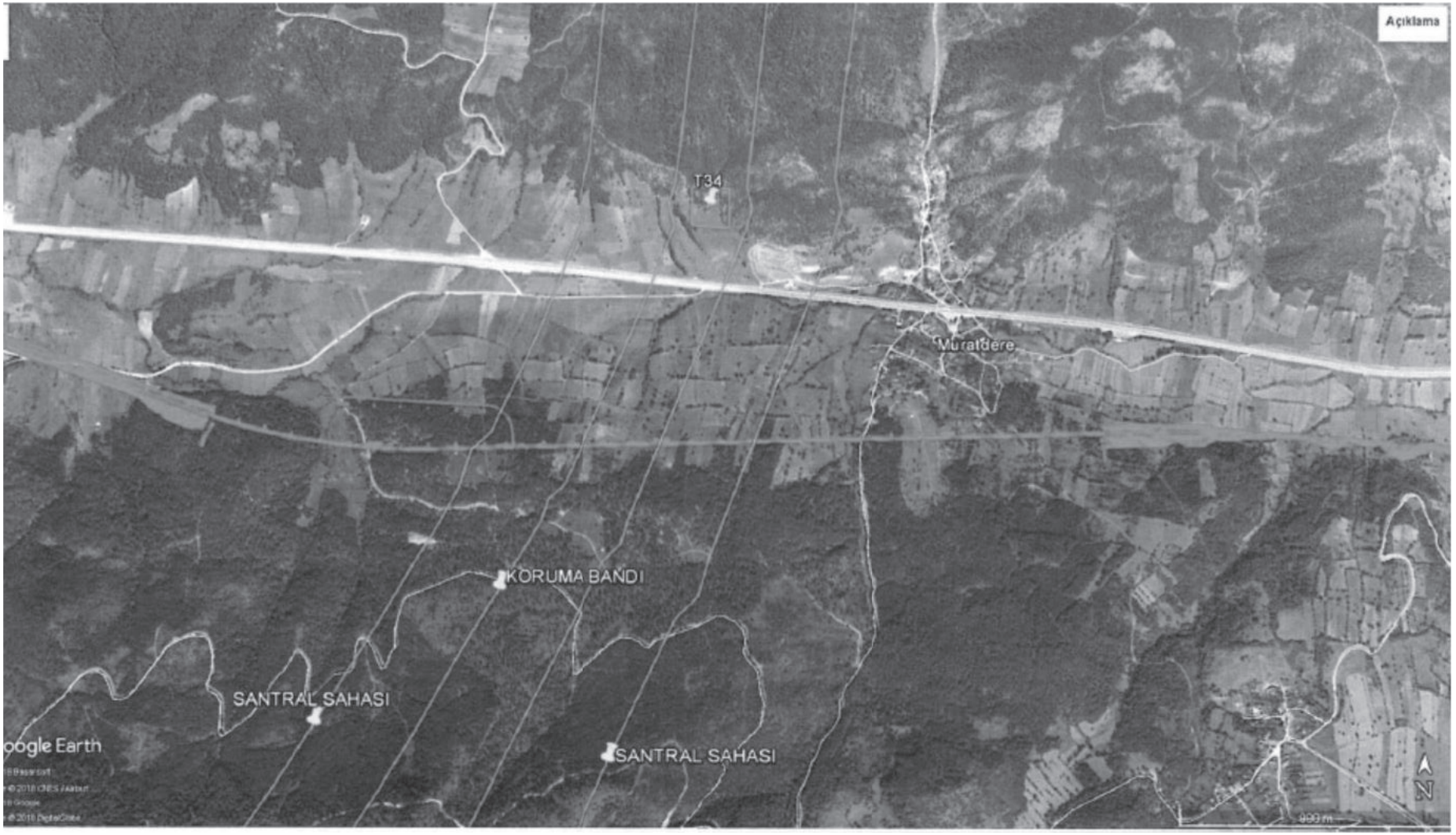
In the mentioned area there is the "Yenişehir - Bozüyük Railway Project" of which the preliminary project at 1/25.000 scale was completed by our Organization. Although the subject power plant area is intersecting the railway itinerary between Km:67+200 – 68+500, since the area remains above the railway tunnel and no construction is planned there, we think that at this stage it is suitable to plan the subject power plant. For your information and action.

e- signature
Burak AĞLAÇ
Department Head Assistant

e- signature
Muzaffer ERGIŞI
Department Head

Attachment: Satellite view (1 sheet)

425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Muratdere
KORUMA BANDI
SANTRAL SAHASI
SANTRAL SAHASI
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ATTACHMENT 4.4

REPUBLIC OF TURKEY GOVERNORSHIP OF BILECIK
ENVIRONMENT AND URBANIZATION PROVINCE DIRECTORATE

(logo)

REPUBLIC OF TURKEY
GOVERNORSHIP OF BILECIK
Environment and Urbanization Province Directorate

Number: 36541948-250-E.4403 October 24th, 2017
Subject : Preservation Area Affairs (Institutional opinion)

ÇEKIM ENERJI YATIRIM ÜRWETİM VE TİCARET A.Ş.
Turan Güneş Bulvarı, Galip Erdem Cad., No. 11 ÇANKAYA/ ANKARA

Ref.: Your letter number 274 dated October 17th, 2017

In your letter it is requested to inform if the "Bozüyük Wind Energy Power Plant (90 MW) Project" that is planned in the area of Çamyayla, Delielmacık, Muratdere, Erikli Villages in the Bozüyük Sub- province, Bilecik Province is in any natural protection area.

The results of the study show that in the project area (Çamyayla, Delielmacık, Muratdere, Erikli Villages) attached to the referred letter, there is not any Natural Protection Area and/ or Natural Assets registered pursuant to the "Regulations for the procedures and principles regarding the identification, registration and approval of the protected areas" enacted b y publication in the Official Gazette Issue number 28358 dated July 19th, 2012. However, regarding the planned investment it is required to comply with the provisions of the Environmental Law number 2872 and Law number 5491 for the amendment of this law and with the concerned provisions of the Regulations passed/ to pass in connection to this law and to obtain the permissions foreseen within the frame of the other legislation in force, not to deteriorate the ecological balance, to obey the measures for the protection and development of the environment, in case any natural assets is encountered during the activity (cave, waterfall, etc.) to request again the opinion of our Province Directorate.

For your information

e- signature
Ömer BOLAT
Environment and Urbanization Province Director

The original document is electronically signed
Ismail Öztürk (signature)
Correspondence Staff

October 24th, 2017

Photograph of the envelope of the letter sent to

Çekim Enerji Yatırım Üretim ve Ticaret A.Ş.

by the Bilecik Province Environment and Urbanization Directorate

(logo)

REPUBLIC OF TURKEY
GOVERNORSHIP OF BILECIK
Environment and Urbanization Province Directorate

Number: 19400938-250-E.187 January 12th, 2018
Subject : Institutional opinion

ÇEKIM ENERJI YATIRIM ÜRETİM VE TİCARET A.Ş.
Turan Güneş Bulvarı, Galip Erdem Cad., No. 11 ÇANKAYA/ ANKARA

Ref.: Petition number 2018-003 dated January 1st, 2018 of EN-ÇEV Ebnerji Çev.Yat.Dan.Har.Im.Inş.A.Ş.

In your referred pwetititon it is requested to inform if the area of the roads between the turbines in the project area of the Wind Energy Power Plant (90 MW) facility planned in the area of Çamyayla, Delielmacık, Muratdere, Erikli Villages in the Bozüyük Sub- province, Bilecik Province is in any grade 1 natural protection area.

In the project area defined in the coordinates submitted in the CD attached to the referred letter, there is not any Grade 1 Natural Protection Area and/ or Natural Assets registered pursuant to the "Regulations for the procedures and principles regarding the identification, registration and approval of the protected areas" enacted b y publication in the Official Gazette Issue number 28358 dated July 19th, 2012. However, regarding the planned investment it is required to comply with the provisions of the Environmental Law number 2872 and Law number 5491 for the amendment of this law and with the concerned provisions of the Regulations passed/ to pass in connection to this law and to obtain the permissions foreseen within the frame of the other legislation in force, not to deteriorate the ecological balance, to obey the measures for the protection and development of the environment, in case any natural assets is encountered during the activity (cave, waterfall, etc.) to request again the opinion of our Province Directorate.

For your information

e- signature
Ömer BOLAT
Environment and Urbanization Province Director

ATTACHMENT 4.5

DIRECTORATE OF ESKIŞEHIR REGIONAL COUNCIL FOR THE PROTECTION OF CULTURAL ASSETS

REPUBLIC OF TURKEY
MINISTRY OF CULTURE AND TOURISM

General Directorate of Cultural Assets and Museums
Directorate of Eskişehir Regional Council for the Protection of Cultural Assets

Number: 42244183-168.01.07[11.01.94]- 5071 November 9th, 2017
Subject : "Bozüyük Wind Energy Power Plant (90 MWe/MWm) Project"
Çamyayla, Delielmacık, Muratdere, Erikli Villages,
Bozüyük Sub- province, Bilecik Province

EN-ÇEV ENERJİ ÇEV.YAT. VE DAN.HAR. İMAR INŞ. A.Ş.
Mahatma Gandi Cad. No.: 92/2 06680 G.O.P. Çankaya/ ANKARA

Ref.: a) Letter number 000045-220.01-E.1176 dated January 19th, 2017 of the Environmental Impact Assessment, Permission and Auditing General Directorate
b) Our letter number 42244183-168.01.07[11.01.94]-3100 dated July 5th, 2017
c) The petition dated October 17th, 2017 of En-Çev Enerji Çevre Yatırımları ve Danışmanlığı Haritacılık İmar İnşaat A.Ş.

Due to the revision of the turbine coordinates of the "Bozüyük Wind Energy Power Plant (90 MW) Project" that is planned by Çekim Enerji Yatırım Üretim ve Ticaret A.Ş. in the area of Çamyayla, Delielmacık, Muratdere, Erikli Villages in the Bozüyük Sub- province, Bilecik Province, in the petition under ref "c" our opinion regarding the last coordinates within the project scope is requested to be communicated.

With the letter under ref "a" the Environmental Impact Assessment Application file of the mentioned project was sent and as the result of the archive scanning for the turbine location coordinates indicated in the Environmental Impact Assessment Application File and the inspection made on site it was concluded that there is no overlapping with any registered cultural assets pursuant to the scope of the Law number 2863 and with our letter under ref "b" we informed our opinion to all the concerned institutions.

Since in the investigations made on site regarding the revised coordinates communicated with the letter under ref "c", there were no cultural assets in the subject project areas where physical intervention and construction works will be done, as mentioned in the Environmental Impact Assessment Application file, the statement *"In case that in the course of the activities run within the project scope, there will be identified any areas defined as "Cultural Assets", "Natural Assests", "Grade 1 Natural Protected Area" and "Preservation Area" in Clause 3, article one, sub clause title "Definitions" paragraph (a) sub paragraphs 1, 2, 3 and 5 of the Cultural and Natural Assets Protection Law number 2863"* should be preserved in the Environmental Impact Assessment Report and it is found suitable to make the implementation provided that, in case of turbine location changes, opinion will be asked again for the new locations.

For your kind information and action

Mehmet Süleyman EKŞI (signature)
Director of the Regional Council

DISTRIBUTION:
Action:
En-Çev Enerji Çev.Yat. ve Dan. Har. İmar İnş. A.Ş.
Mahatma Gandi Cad. No.: 92/2 06680
G.O.P. Çankaya/ ANKARA

Information:
Bilecik Governoship
(Culture and Tourism Regional Directorate)

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REPUBLIC OF TURKEY
MINISTRY OF CULTURE AND TOURISM

General Directorate of Cultural Assets and Museums
Directorate of Eskişehir Regional Council for the Protection of Cultural Assets

Number: 42244183-168.01.07[11.01.94]- 531 February 3rd, 2017
Subject : Bozüyük Wind Energy Power Plant (90 MWe/MWm) Project
Çamyayla, Delielmacık, Muratdere, Erikli Villages,
Bozüyük Sub- province, Bilecik Province

MINISTRY OF ENVIRONMENT AND URBANIZATION
(Environmental Impact Assessment, Permission and Auditing General Directorate) ANKARA

Ref.: Letter number 0000454-220.01-E.1176 dated January 1st, 2017 of the Environmental Impact Assessment, Permission and Auditing General Directorate

In the referred letter, our opinion within the frame of the legal authorities, duties and responsibilities of our institution, was requested regarding the Environmental Impact Assessment Application File in our On line Environmental Impact Assessment Process Management System of the Bozüyük Wind Energy Power Plant (90 MWe/ MWm)) Project that is planned by Çekim Enerji Yatırım Üretim ve Ticaret A.Ş. in the area of Çamyayla, Delielmacık, Muratdere, Erikli Villages in the Bozüyük Sub- province, Bilecik Province.

The archive scanning made for the turbine location coordinates indicated in the Environmental Impact Assessment Application File and the inspection made on site it was concluded that there is no overlapping with any registered cultural assets pursuant to the scope of the Law number 2863 and, taking into consideration that the inventory studies in our country have not been completed yet, it is requested that at the stage of preparing the Environmental Impact Assessment Report, a new application should be made to tour Directorate with the final and precise coordinates of the power plant area and turbine locations in order to get our Directorate opinion. No construction and physical intervention should be made in the subject area prior to getting our Directorate opinion regarding the final project.

For your kind information and action

Mehmet Süleyman EKŞI (signature)
Director of the Regional Council

DISTRIBUTION:
Action:
- Ministry of Environment and Urbanization
(Environmental Impact Assessment, Permission and Auditing General Directorate)/ANKARA
- Çekim Enerji Yatırım Üretim ve Ticaret A.Ş.
Turan Güneş Bulvarı, Galip Erdem Cad. No.:11
Çankaya/ANKARA
- En-Çev Enerji Çev.Yat. ve Dan. Har. İmar İnş. A.Ş.
Mahatma Gandi Cad. No.: 92/2 06680 G.O.P. Çankaya/ ANKARA

Information:
- General Directorate of Cultural Assets and Museums/ ANKARA
- Bilecik Governoship
(Culture and Tourism Province Directorate)
(Environment and Culture Province Directorate)

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REPUBLIC OF TURKEY
MINISTRY OF CULTURE AND TOURISM

General Directorate of Cultural Assets and Museums
Directorate of Eskişehir Regional Council for the Protection of Cultural Assets

Number: 42244183-150-E.151557 February 19th, 2018
Subject : 11.01.94 …Bozüyük Wind Energy Power Plant
(90 MWe/MWm) Project Çamyayla, Delielmacık, Muratdere,
Erikli Villages, Bozüyük Sub- province, Bilecik Province

EN-ÇEV ENERJİ ÇEVRE YATIRIMLARI VE DANIŞMANLIK HARITACILIK İMAR INŞAAT A.Ş.
Mahatma Gandi Cad. No.: 92/2 06680 Çankaya/ ANKARA

Ref.: a) The letter dated January 5th, 2018 of En-Çev Enerji Çevre Yatırımları ve Danışmanlığı Haritacılık İmar İnşaat A.Ş.
b) Our letter number 42244183-168.01.07[11.01.94]-3100 dated July 5th, 2017
c) Our letter number 42244183-168.01.07[11.01.94]-5071 dated October 11th, 2017

In the letter under ref "c" our opinion was requested regarding the power plant area, turbines and the road between the turbines within the scope of the Bozüyük Wind Energy Power Plant (90 MW) Project" that is planned to install by Çekim Enerji Yatırım Üretim ve Ticaret A.Ş. in the area of Çamyayla, Delielmacık, Muratdere, Erikli Villages in the Bozüyük Sub- province, Bilecik Province.

With the letter under ref "a" our opinion resulting from the land inspection made within the scope of the Environmental Impact Assessment Application File was communicated; later due to the erevision of the turbine locations a new land inspection was made and our opinion regarding the turbine location revision was communicated to the concerned institutions with our letter under ref "b".

With the letter under ref "c" our opinion about the roads between turbines was requested; the investigations made on site showed that there are no cultural assets on the surface of that area.

Furthermore, it has been found out that our opinion regarding the turbine locations attached to the letter under ref "c" had been informed with our letters under ref "a" and ref "b".

Since in the investigations made on site regarding the revised coordinates communicated with the letter under ref "c", there were no cultural assets in the subject project areas where physical intervention and construction works will be done, as mentioned in the Environmental Impact Assessment Application file,

Within this scope, it is suitable to make implementation at the coordinates communicated attached to letter under ref "c", to take intro consideration the statement *"In case that in the course of the activities run within the project scope, there will be identified any areas defined as "Cultural Assets", "Natural Assets", "Grade 1 Natural Protected Area" and "Preservation Area" in Clause 3, article one, sub clause title "Definitions"*

paragraph (a) sub paragraphs 1, 2, 3 and 5 of the Cultural and Natural Assets Protection Law number 2863" written in Environmental Impact Assessment Application File provided that, in case of any revision of the turbine locations and/ or road itineraries, our opinion will be asked again for the revised locations.

For your kind information and action.

electronic signature

Mehmet Süleyman EKŞI
Director of the Regional Council

Distribution:
Action:
EN-ÇEV ENERJİ ÇEVRE YATIRIMLARI VE DANIŞMANLIK HARITACILIK İMAR INŞAAT A.Ş
Mahatma Gandi Cad. No.: 92/2 06680 Çankaya
/ ANKARA

Information:
ESKIŞEHIR GOVERNOSHIP
(Culture and Tourism Regional Directorate)

ATTACHMENT 4.6

DODURGA MUNICIPALITY

(logo)

REPUBLIC of TURKEY
MAYORALTY OF THE DODURGA MUNICIPALITY
Technical Works Division

Number: 98937630-314.01-E.234 November 16th, 2017 Subject : Municipality Services

EN-ÇEV Enerji Çevre Yatirimlari ve Danışmanlık Haritacilik Imar Inşaat A.Ş.

In your letter number DY/Ç/2017-280 dated October 17th, 2017 you informed that Çekim Enerji Yatırım Üretim ve Ticaret A.Ş is planning the installation and operation of the Bozüyük Wind Energy Power PLant (90 MWm) in Çamyayla, Delielmacık, Muratdere, Erikli Villages in the Bozüyük Sub- province of our Province.

Since our Municipality does not possess any sewage cleaning trucks, the domestic liquid wastes collected in the leak proof septic faucet/ faucets to build within the project scope, will not be emptied by us. In our sub- province there are private companies that offer chargeable sewage cleaning truck rental services. The domestic solid wastes that would result at the operation and construction stage will be collected by yourselves in the area indicated by our Municipality and will be cleared from that area by the Municipality teams at certain time intervals. The drinking and consumption water needed within the project scope will be supplied by yourselves from the source points indicated by our Municipality.

For your information

e signature
Selim TUNA
Mayor

(Hereby is attested that this document was
SIGNED ELECTRONICALLY
STAMP November 16th, 2017
signature)

Halil Ibrahim SABANCA - Chief Clerk
(signature)

ATTACHMENT 4.7

FORESTRY GENERAL DIRECTORATE

438

(logo)

REPUBLIC OF TURKEY
FORESTRY GENERAL DIRECTORATE
Bursa Forestry Regional Directorate

Number: 76372497-255.03-E917335 May, 2nd, 2018
Subject : Çekim Enerji Yatırım Üretim ve Ticaret A.Ş
/ Wind Energy Power Plant Project (611.02.-2017-23)

FORESTRY GENERAL DIRECTORATE
(Head of the Permit and Easement Department)

Ref.: Order number 66995690-611.02.E.137500 dated January 17th, 2018 of the Forestry General Directorate

Our study and assessment report regarding "Wind Energy Power Plant Project" that Çekim Enerji Yatırım Üretim ve Ticaret A.Ş plans to make inside the borders of the Çamyayla, Delielmacık, Muratdere, Erikli and AşağıarmutluVillages in the Bozüyük Sub- province, Bilecik Province was sent attached to our letter through the Electronic Documents Management System and a document carrying a wet signature will not be sent further.

Our Regional Directorate finds suitable the actualization of the subject project.

e signature
Yalçın AKIN
Regional Manager

Attachment:
Environmental Impact Assessment Inspection and Survey Form (17 pages)

INSPECTION AND SURVEY FORM
OF THE BOZÜYÜK WIND ENERGY POWER PLANT PROJECT
OF ÇEKIM ENERJI YATIRIM ÜRETIM VE TICARET A.Ş

Province	: Bilecik	FORESTRY REGIONAL DIRECTORATE	: Bursa
Sub-province	: Bozüyük	FORESTRY ADMINISTRATION DIRECTORATE	:Bilecik
Village	: Çamyayla-Delielmacık Muratdere-Çamyayla- Erikli-Aşağıarmutlu,	FORESTRY ADMINISTRATION SUB DIVISION	:Aksudere-Dodurga-Muratdere

Position : -

1-	Application holder's	
	a) Name surname	: Çekim Enerji Yatırım Üretim ve Ticaret A.Ş.
	b) Address	: Turan Güneş Bulvarı Galip Erdem Cad. No11 Çankaya/ANKARA
	c) Tax payer Nr./ R.T. Identity number	: -
	d) Facility name and type	: Wind Energy Power Plant and and Project
2-	Serial number	: Aksudere – Dodurga – Muratdere
3-	Section Numbers, Section Areas and Percentage of the area subject of the Environmental Impact Assessment Report	: 96-98-99-100-101-102-34-2-4-5-6-7-10-14-15-13-12-1-9-23-24-25-26-27-28-16 Dodurga, 160-151-128-153-132-152-162-163-165 166-170-168-167-164-156-157-158-138-139-107-108-140-141-110 111-92-91-72-73 Muratdere, 31-320-324-325-326-327-328-329-330-338-338-186-187-185-184-188-189-190-191-192-193-127-128-129-126-125-132-34-35-36-133-39-40-41-42-46-47-48-149-51-150-52-55-53-54-56 Aksudere Total area: -ha (total area % of the environmental impact assessment area).
4-	Stand	:
	a) Operation type	: Fertile and degenerated Grove Forest
	b) Available Species and Sub species	: -
	c) Stand Types	: OT-ÇsÇkcd2-BÇk-Çkd1-ÇsGCD2-GÇscd3-BÇs-BG-GC-ÇkÇsd1-GA-ÇkÇgd1-Gd3-GD-GÇsA-ÇsGcd3-Çsd'-ÇkÇsd2-ÇkÇsd3-Çsd2-Çkd2-Z-Çka-Me-BKn-Knb3-Mlb3-Çkcd1-Knc3-BAr-Mlab3-Mlbc3-Mzb3-BMl-Ckc3-Çkcd2-Mzab3-Knbc3-Kncd3-Mla3
5-	The borders of the area subject of the Environmental Impact Assessment Report on the 1/2000 scale Regional Map (coordinates showing the whole area)	:
6-	The borders of the area subject of the Environmental Impact Assessment Report on the Forest Cadastre Map	: ATTACHED
7-	Forest Delimitation and Cadastre Situation	: Done
	Project Area General Situation	
	a) Area considered as Forest	: - m2
	b) Area not considered as Forest	: - m2
	c) Total area	: - m2
8-	If the project is in the forest area, the area subject to permission	: Total area is 646.398,04 m2, area subject to permission will be indicated in the permission application
9-	The area of Construction to build on the area subject to permission,(If any planning is done for infrastructure works such as roads, energy and water supply for the project subject of the environmental Impact assessment Report)	: Planning for site area of 48 turbines and road construction
10-	Purpose of the application	: Operation of the Wind Energy Power Plant
11-	If there is other application submitted for the application area	: Nothing was submitted
12-	If the area is in the Owned Forests Area and in the areas allocated to our administration or write down the impact distance	: Some part is in the forest area allocated to our administration. Some part is agricultural land.

13-	If the area is in the burnt Forest area, rejuvenation area or afforested area in clause 18 of the Forest Law number 6831; if the area is in the Dam Basin.	: Part of the requested area (T1, T2, T3, T4, T5, T6,T7, T8 turbine areas) is the areas burnt during the Domaniç – Dodurga fire and coincide with the rejuvenation areas.
14-	If the requested area is in the activity area of any ongoing survey, of any research and training area and if it is within the impact distance.	: It is not in the survey area. No, it is not.
15-	If the requested area is in the Preserved Forests, Gene Preservation Areas, Survey Forest allocated to Scientific Studies, Research Station, Research Project experimental area City Forests, Recreation Places, Endemic and Rare Ecosystem Preservation areas, Seed Stands, National Parks, Game Wildlife, Game breeding area, Touristic area, Special Environmental preservation zone, Forbidden Military Zone and Natural Protection Area and if it is within the impact distance.	: The requested area is not in any Preserved Forest, Gene Preservation Areas, Survey Forest allocated to Scientific Studies, Research Station, Research Project experimental area City Forests, Recreation Places, Endemic and Rare Ecosystem Preservation areas, Seed Stands, National Parks, Game Wildlife, Game breeding area, Touristic area, Special Environmental preservation zone, Forbidden Military Zone, and Natural Protection Area and if it is within the impact distance. It is Not know if the other areas are or not within the limits of the Environmental Impact Assessment for which opinion was requested.
16-	In case the requested area is coinciding with an area of specifications different from those mentioned in points 13, 14, 15 of this form: a) The coordinates and map of the subject place, b) The marking of the project place on the map of the subject place, c) If the planned activity is contradictory to the restriction justifications of the special place (for example, contradictory to the justifications of the preservation forest)	: -
17-	If it is unsuitable from the forestry sources and forestry works viewpoint	: It suitable provided that the sensitivity in the rejuvenation works after the 2017 fire is known.
18-	The sensitivity level from the forest fires viewpoint and what should be the measures necessary to take.	: This is a 1st level sensitive are from the forest fires view point. The measures defined by the administration are obligatory. The measure to take will be written in the guarantee letter.
19-	What are the forest assets, their volume and how it will be evaluated,	:It displays variation according to area requiring permission the evaluation will be done by our Operation Directorate.
20-	The population, number of families and the distance to the project area of the closest villages (if there is any forest village, what would be the probable impact on the public health, agricultural lands, on stockbreeding, drinking water, etc.)	: The project is at 375 m air distance from the Delielmacık village, at 750 m from the Muratdere village, at 470 m from the Çamyayla village. It is not possible for us to determine the negative or positive impact on the public health, on agricultural land, stockbreeding, drinking water.
21-	If the facility is established, its impact on the regional employment	: Employment rate will increase
22-	If there is any restriction concerning the forest function in the project area in the management plan,	: There is no restriction
23-	If in the activity area and within 1 km in its vicinity there is any activity with negative/ positive Environmental Impact Assessment (if yes, type, company and field of activity)	: There is none
24-	Evaluation of Directive number 2014/1	: No objection pursuant to Directive number 2014/1.

CONCLUSION: According to the conclusion reached after the survey and inspection done within the scope of the Environmental Impact Assessment Regulations and Forest Law number 6831, the Wind Energy Power Plant Operation activities will have no negative impact on the forests and forestry activities provided that they will be actualized within the project scope on the area that was burnt during the 2017 fire, that at the permit stage contact will be sustained with the forest administration, the implementation will not effect the rejuvenation works and the sensitivity of the area will be taken into consideration. April 24th, 2018.

(signature)	(signature)	(signature)	(signature)
PRESIDENT Ömer Süha CEYLAN i.a. Department Manager Assistant	MEMBER Göknur DALAMAN Department Supervisor	MEMBER Alper AKSU Department Supervisor	MEMBER Eren KARBUZ i.a. Senior Supervisor

I would like to present the opinion that, as explained above in detail, the implementation of the Wind Energy Power Plant project will not have any negative impact on the forests and forestry activities.

…/…/ 2018

(signature)

Erkan YURT
Forest Administration Manager

The evaluation made within the scope of the Environmental Impact Assessment Regulations and Forest Law number 6831, led to the conclusion that the subject activity will not have any negative impact on the forests and forestry activities.

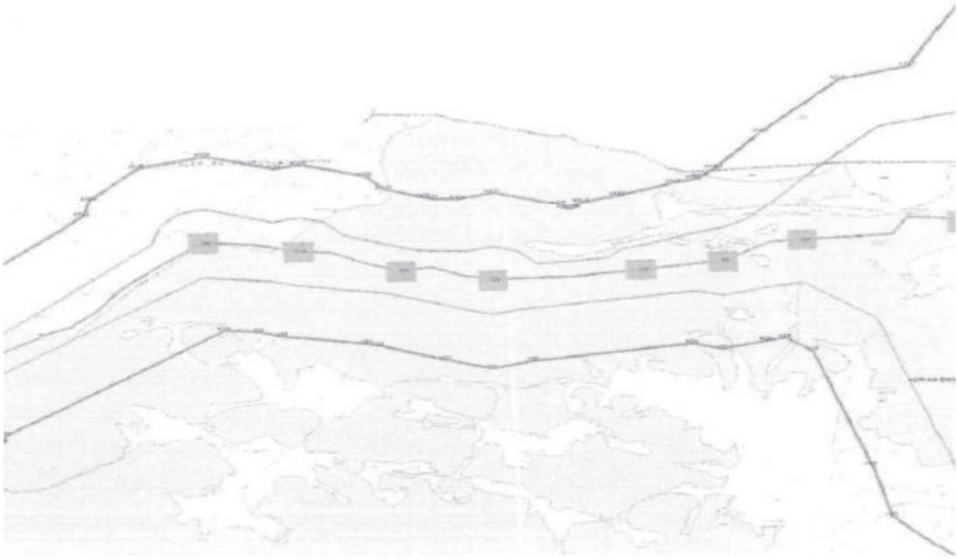
Inspected April 25th, 2018
Permission and Easement Branch Manager
(signature)

Submitted with “suitable” opinion
Regional Manager Assistant
(signature)

Approved
Forest Regional Director
(signature)

FOREST CADASTRE MAP

N /25000



SPECIAL MARKS

-T18, T19, T20,T21, T22, T23, T24
- Forest area
- Agricultural area
- 2B area

Road

This map was drawn by ourselves April 24th, 2018

Ömer Süha CEYLAN	Göknur DALAMAN	Alper AKSU	Eren KARBUZ
i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

FOREST CADASTRE MAP

N /25000

SPECIAL MARKS

-T1, T2, T3, T4, T5, T6, T7, T8
- Forest area — Road
- Agricultural area
- 2B area

This map was drawn by ourselves April 24th, 2018

Ömer Süha CEYLAN	Göknur DALAMAN	Alper AKSU	Eren KARBUZ
i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

FOREST CADASTRE MAP

N /25000

SPECIAL MARKS

- T9, T10, T11, T12, T13, T14, T15, T16, T17
- Forest area
- Agricultural area
- 2B area

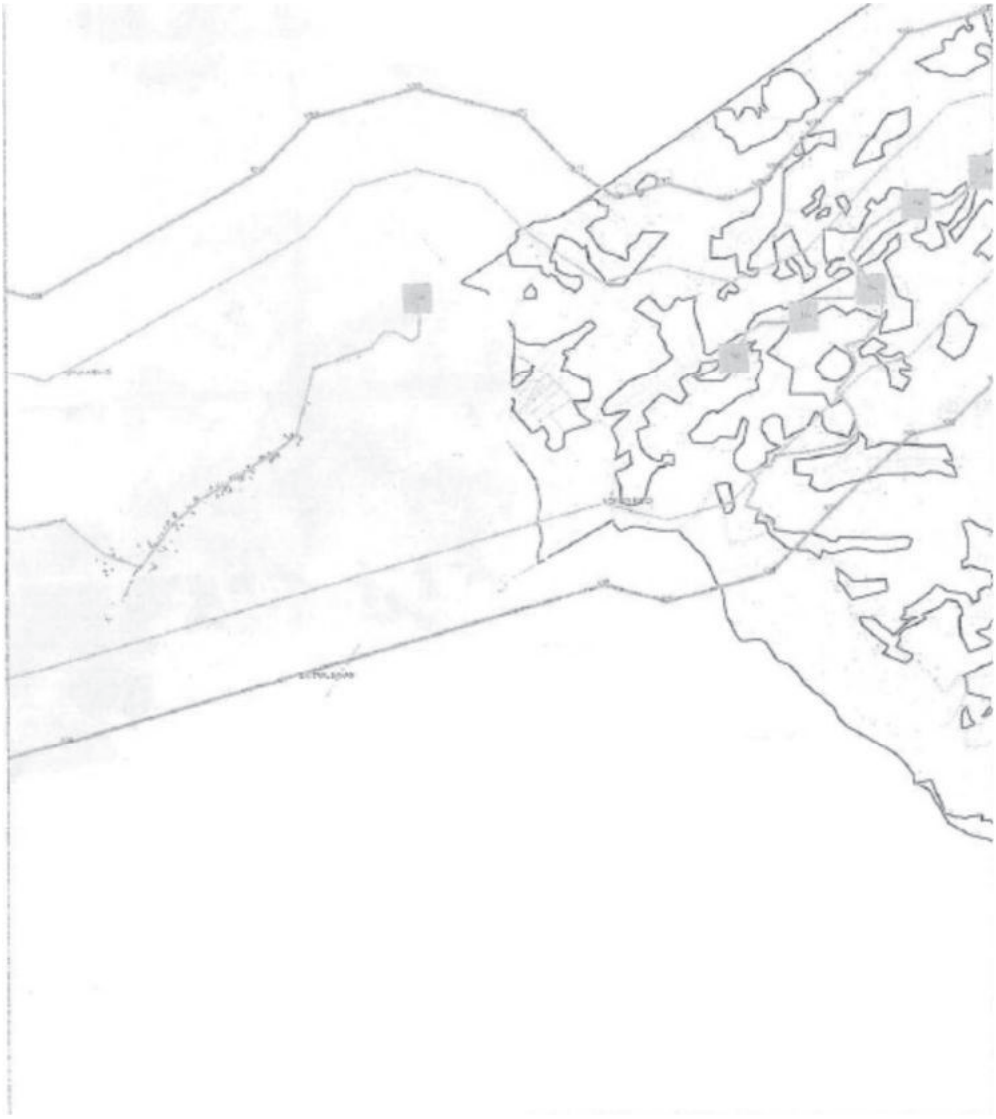
Road

This map was drawn by ourselves April 24th, 2018

Ömer Süha CEYLAN	Göknur DALAMAN	Alper AKSU	Eren KARBUZ
i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

FOREST CADASTRE MAP

N /25000



SPECIAL MARKS

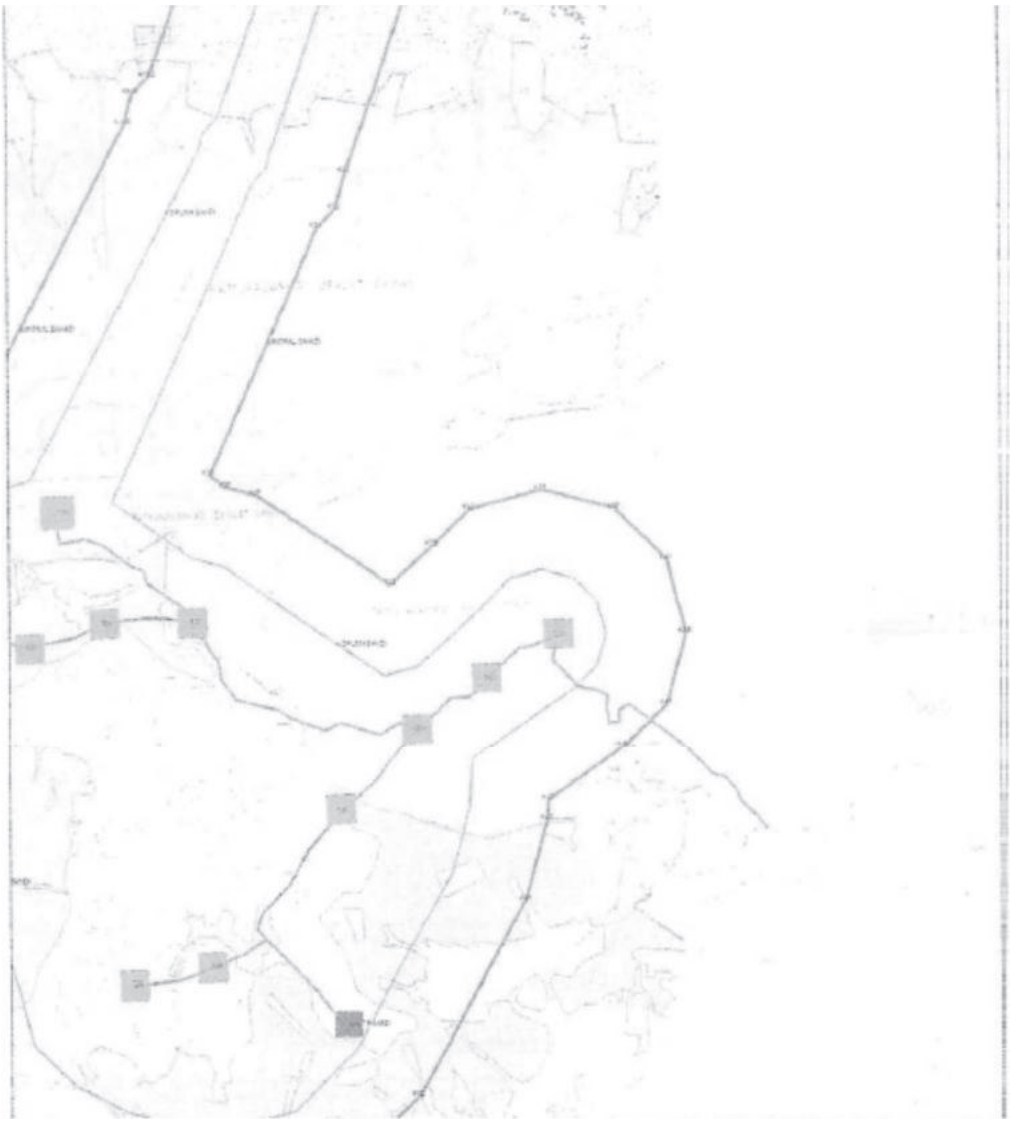
- T40, T143, T44, T45, T46
- Forest area — Road
- Agricultural area
- 2B area

This map was drawn by ourselves April 24th, 2018

Ömer Süha CEYLAN	Göknur DALAMAN	Alper AKSU	Eren KARBUZ
i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

FOREST CADASTRE MAP

N /25000



SPECIAL MARKS

- T25, T26, T27, T28, T29, T30, T31, T32, T33, T42
- Forest area — Road
- Agricultural area
- 2B area

This map was drawn by ourselves April 24th, 2018

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i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

FOREST CADASTRE MAP

N /25000

SPECIAL MARKS

- T47, T48
- Forest area
- Agricultural area
- 2B area

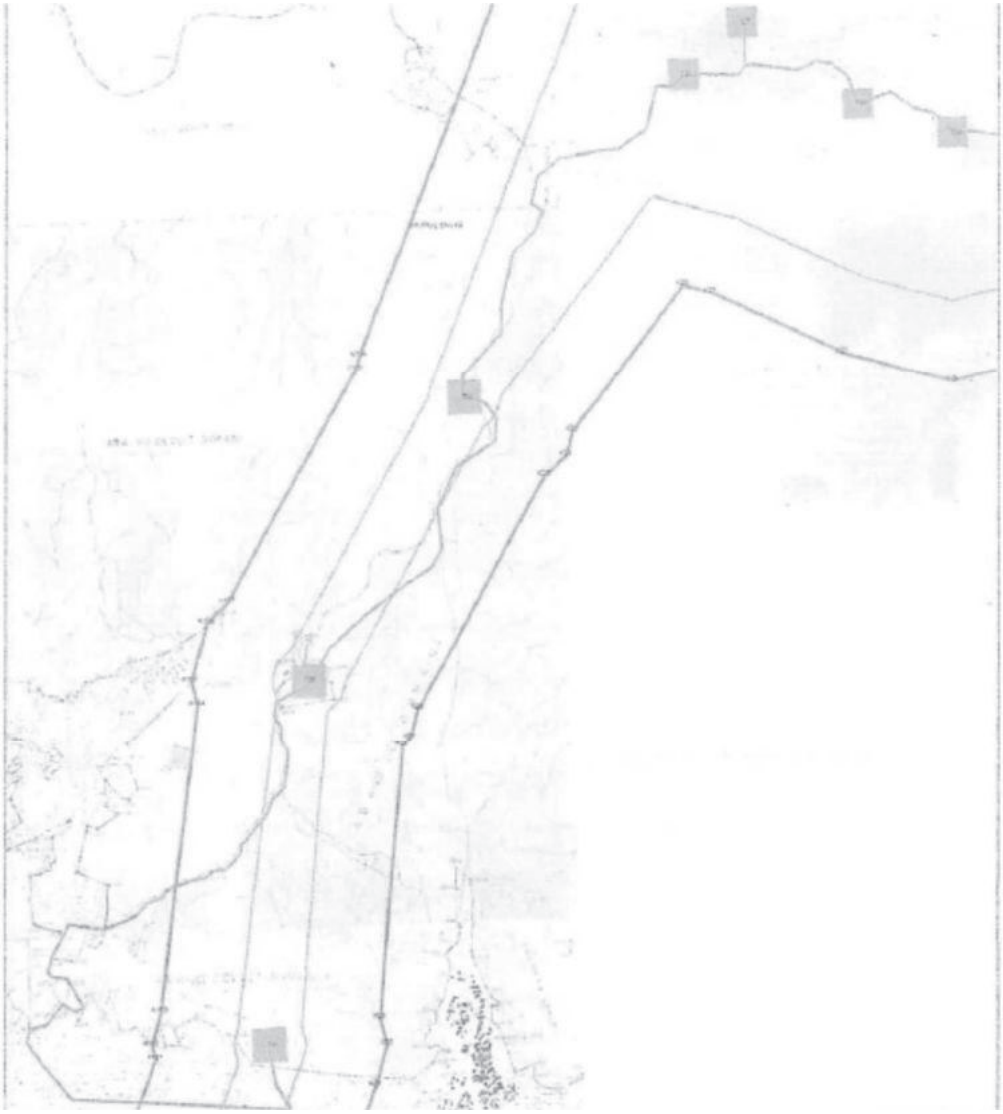
Road

This map was drawn by ourselves April 24th, 2018

Ömer Süha CEYLAN	Göknur DALAMAN	Alper AKSU	Eren KARBUZ
i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

FOREST CADASTRE MAP

N /25000



SPECIAL MARKS

- T34, T35, T36, T37, T41, T38, T39,
- Forest area — Road
- Agricultural area
- 2B area

This map was drawn by ourselves April 24th, 2018

Ömer Süha CEYLAN	Göknur DALAMAN	Alper AKSU	Eren KARBUZ
i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

STAND MAP

N /25000

SPECIAL MARKS

- Wind turbine
- Admin. Sub division border
-Road
- REJUVENATION
- MAINTENANCE
- HOLLOW CLOSED (damaged)
- WATER
- FOREST GLADES
- EX FOREST GLADES
- SETTLEMENT

This map was drawn by ourselves April 24th, 2018

Ömer Süha CEYLAN	Göknur DALAMAN	Alper AKSU	Eren KARBUZ
i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

STAND MAP

N /25000

SPECIAL MARKS

- Wind turbine	- REJUVENATION	- FOREST GLADES
- Admin. Sub division border	- MAINTENANCE	- EX FOREST GLADES
-Road	- HOLLOW CLOSED (damaged)	- SETTLEMENT
	- WATER	

This map was drawn by ourselves April 24th, 2018

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i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

STAND MAP

N /25000

SPECIAL MARKS

- Wind turbine
- Admin. Sub division border
-Road
- REJUVENATION
- MAINTENANCE
- HOLLOW CLOSED (damaged)
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- FOREST GLADES
- EX FOREST GLADES
- SETTLEMENT

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i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

STAND MAP

N /25000

SPECIAL MARKS

- Wind turbine
- Admin. Sub division border
-Road
- REJUVENATION
- MAINTENANCE
- HOLLOW CLOSED (damaged)
- WATER
- FOREST GLADES
- EX FOREST GLADES
- SETTLEMENT

This map was drawn by ourselves April 24th, 2018

Ömer Süha CEYLAN	Göknur DALAMAN	Alper AKSU	Eren KARBUZ
i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

STAND MAP

N /25000

SPECIAL MARKS

- Wind turbine
- Admin. Sub division border
-Road
- REJUVENATION
- MAINTENANCE
- HOLLOW CLOSED (damaged)
- WATER
- FOREST GLADES
- EX FOREST GLADES
- SETTLEMENT

This map was drawn by ourselves April 24th, 2018

Ömer Süha CEYLAN	Göknur DALAMAN	Alper AKSU	Eren KARBUZ
i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

STAND MAP

N /25000

SPECIAL MARKS

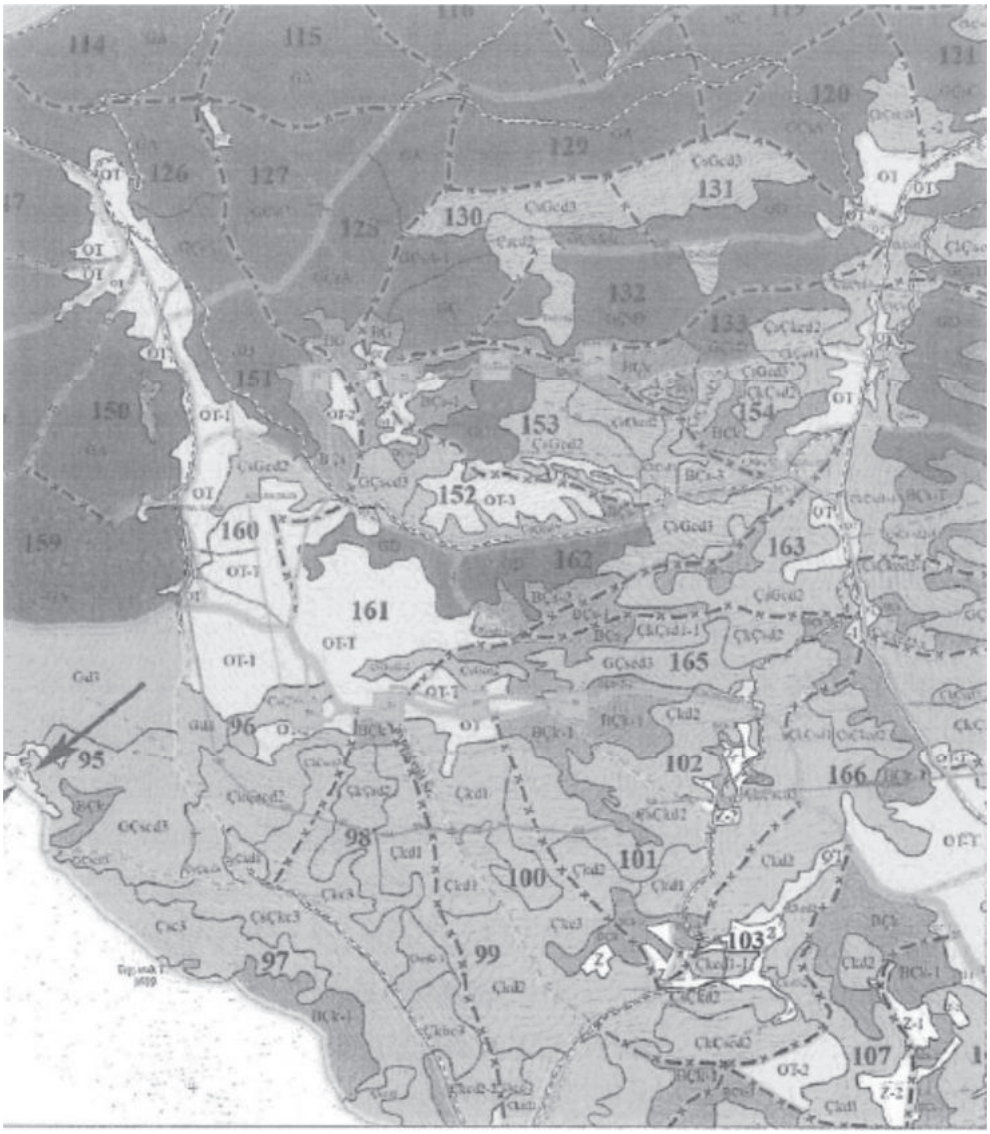
- Wind turbine	- REJUVENATION	- FOREST GLADES
- Admin. Sub division border	- MAINTENANCE	- EX FOREST GLADES
-Road	- HOLLOW CLOSED (damaged)	- SETTLEMENT
	- WATER	

This map was drawn by ourselves April 24th, 2018

Ömer Süha CEYLAN	Göknur DALAMAN	Alper AKSU	Eren KARBUZ
i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

STAND MAP

N /25000



SPECIAL MARKS

- Wind turbine
- Admin. Sub division border
- Road
- REJUVENATION
- MAINTENANCE
- HOLLOW CLOSED (damaged)
- WATER
- FOREST GLADES
- EX FOREST GLADES
- SETTLEMENT

This map was drawn by ourselves April 24th, 2018

Ömer Süha CEYLAN	Göknur DALAMAN	Alper AKSU	Eren KARBUZ
i.a. Department Manager Assistant	Department Supervisor	Department Supervisor	i.a. Senior Supervisor
(signature)	(signature)	(signature)	(signature)

ATTACHMENT 4.8

OPINION OF THE DIRECTORATE OF FOOD, AGRICULTURE AND LIVESTOCK

(logo)

REPUBLIC of TURKEY
GOVERNORSHIP OF BILECIK
Province Directorate of Food, Agriculture and Livestock

Number: 86800188-230.04.02-E.310761 February 8th, 2017
Subject : Bozüyük Wind Energy Power Plant

MINISTRY OF ENVIRONMENT AND URBANIZATION
(Directorate of Environmental Impact Assessment, Permit and Inspection)

Ref.: Your letter number 24304062-E.1176 dated January 19th, 2017

In your letter referred above, you requested our Agency opinion concerning Environmental Impact Assessment Application of the "Bozüyük Wind Energy Power Plant (90 mwe/mwm) Project" that is planned in the location of the Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub- province, Bilecik Province.

The Project Presentation File was studied and provided that the required permissions will be obtained within the scope of the Soil Protection and Land Utilization Law number 5403 and the Pasture Law number 4342, our Institution deemed suitable the continuation of the process within the scope of the Environmental Impact assessment Regulations.

For your information

e signature
Hacı Dursun YILDIZ
i.a. Governor
Province Manager

February 13th, 2017 * 002710

It is hereby attested that this document
was signed by electronic signature

February 8th, 2017 Sema GENÇ (signature)

ATTACHMENT 4.9

GOVERNORSHIP OF BILECIK PROVINCE DIRECTORATE OF DISASTER AND EMERGENCY

(logo)

REPUBLIC of TURKEY
GOVERNORSHIP OF BILECIK
Province Directorate of Disaster and Emergency

Number: 86800188-230.04.02-E.310761 February 8th, 2017
Subject : Bozüyük Wind Energy Power Plant

MINISTRY OF ENVIRONMENT AND URBANIZATION
(Directorate of Environmental Impact Assessment, Permit and Inspection)

Ref.: a)Your letter number 58003700-220.01-E.1176 dated January 19th, 2017
b) Letter number 42903529-220.01-366 dated January 24th, 2017 of the Bilecik Province Directorate of environment and urbanization

In the letter under ref (a), our Agency opinion concerning the Environmental Impact Assessment Application File of the "Bozüyük Wind Energy Power Plant (90 mwe/mwm) Project" that is planned to install by Çekim Enerji Yatıurım Üretim ve Ticaret A.Ş. in the location of Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub- province, Bilecik Province, that was prepared pursuant to the Environmental Impact Assessment Regulations and is available on line in the Environmental Impact Assessment Process Management System.

The Public Participation Meeting held on February 2nd, 2017 pursuant to the letter under ref (b) was organized with the contribution of our Directorate technical staff, the report prepared after the requires studies is submitted attached to this letter.

For your in formation

e signature
Hıdır KAHVECI
i.a. Governor
Governor Assistant

February 13th, 2017 * 002723

Attachment: Report (1 page)

460

REPORT

The study of the Environmental Impact Assessment Application File of the "Bozüyük Wind Energy Power Plant (90 mwe/mwm) Project" that is planned to install by Çekim Enerji Yatırım Üretim ve Ticaret A.Ş. in the location of Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub- province, Bilecik Province, was made within the frame of the "Law number 7269 for the Aids to be Made due to Disasters Affecting the Public Life" and "Law number 5901 about the Organization and Duties of the Head of Disaster and Emergency Management " and the following conclusions were reached:

1) Inside the project area there is no decision of Area Affected by Disaster (Building and Region Forbidden for Settlement) taken by the Council of Ministers pursuant to the Law number 7269 for the Aids to be Made due to Disasters Affecting the Public Life. Additionally, the subject area is not among the places planned to utilize within the scope of the same law.

2) Upon the study of the Environmental Impact Assessment Application File, it was noticed that technical information in the natural disaster description part has to be revised and corrected.

3) The required geological – geotechnical studies have to be made more comprehensively and the precautionary measures have to be taken against any disaster (landslide, earthquake, rock fall, etc.) in the course of any works.

(signature)

Betül BALABAN
Geology Engineer

(signature)

Erdoğan SAYIN
Geophysics Engineer

(signature)

Erdoğan DEMIRÇELIK
Branch Manager

ATTACHMENT 4.10

INSTITUTIONAL OPINION OF THE REPUBLIC of TURKEY BILECIK PROVINCE SPECIAL ADMINISTRATION

(logo)

REPUBLIC of TURKEY
BILECIK PROVINCE SPECIAL ADMINISTRATION
Directorate of Environmental Protection and Control

Number: 15806764-743.02.01.01-E.1164 February 7th, 2017
Subject : BOZÜYÜK WIND ENERGY POWER PLANT
(90 mwe/ 90 mwm)

MINISTRY OF ENVIRONMENT AND URBANIZATION
(DIRECTORATE OF ENVIRONMENTAL IMPACT ASSESSMENT, PERMIT AND INSPECTION)

Ref.: Letter number 366 dated January 25th, 2017

In the referred letter our Agency opinion is asked concerning the Environmental Impact Assessment Application File of the "Bozüyük Wind Energy Power Plant (90 mwe/mwm) Project" that is planned to install by Çekim Enerji Yatırım Üretim ve Ticaret A.Ş. in the location of Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub- province, Bilecik Province, that was prepared pursuant to the Environmental Impact Assessment Regulations and is available on line in the Environmental Impact Assessment Process Management System.

In the project area there is zone requested for the power plant and in this zone is Muratdere Mad. San. ve Tic. A.Ş. company that got the company establishment and work permit number 2012/31 dated August 28th, 2012 ; the letter number 960 dated January 31st, 2017 of the Water and ChannelServices Directorate of our Administration, the letter number 1010 dated February 1st, 2017 of the Road and Transportation Services Directorate and letter number 964 dated January 31st, 2017 of the Development and Urban Improvement Directorate and attached to our letter.

For your information and action

Mehmet Akil ŞAHIN
General Secretary Assistant

Attachments:

1- Letter number 960 dated January 31st, 2017 (2 pages and CD attachment)
2- Letter number 1010 dated February 1st, 2017 (1 page and CD attachment)
3- Letter number 964 dated January 31st, 2017 (1 page)
4- Photocopy of permit number 2012/31 (1 page)
5- View of the project area intersecting the permit number 2012/31 (1 page)

February 2nd, 2017 Environment Engineer : Semih OKUR
February 2nd, 2017 Environmental Protection and Control Engineer : Muharrem DUMAN

(logo)

REPUBLIC of TURKEY
BILECIK PROVINCE SPECIAL ADMINISTRATION
Directorate of Water and Channel Services

Number: 32928705-518-E.960 January 31st , 2017
Subject :Çekim Enerji Environmental Impact Assessment opinion

DIRECTORATE OF ENVIRONMENTAL PROTECTION AND CONTROL

Ref.: Your letter number 15806764-518/848 dated January 26th, 2017

In the referred letter our Agency opinion is asked concerning the actualization of the "Bozüyük Wind Energy Power Plant (90 mwe/mwm) Project" that is planned to install by Çekim Enerji Yatırım Üretim ve Ticaret A.Ş. in the location of Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub- province, Bilecik Province, that was prepared pursuant to the Environmental Impact Assessment Regulations .

The area belonging to the subject zone was studied and it was concluded that:

1-) In the power plant area that got the Environmental Impact Assessment not necessary document, there are:
a) 3 sources of drinking and consumption water, 2 supply buildings, the drinking and consumption water cisterns and their distribution, supply, net pipes and installations, as well as sewage pipes and installations of the Pazaryeri Bozcaarmut village,
b) 2 drinking water and consumption water drillings, drinking water cistern and their distribution, supply, network pipes and installations, as well as the sewage pipes and installations of the Pazaryeri Sarıdayı village,
c) the drinking water and consumption water cistern of the Bozüyük Aksutekke village, the drinking and consumption water distribution, supply, net pipes and installations, as well as sewage pipes and installations of the water that comes to Aksutekke village from the Muratdere drinking water group villages,
d) The by pass pipeline itinerary planned to do on the Muratdere Group (Muratdere, Aksutekke, Delielmacık, Ormangözle, Kızılcapınar, Aşağı Armutlu group villages) drinking water distribution line.

2-) In the power plant area for which the Environmental Impact Assessment is required there are:
a) 2 protection belts including the drinking water spring sources of our villages. The 1st protection belt includes the drinking and consumptions water springs (Esenkaya spring, Bıçkıdere spring, Gül spring, Karanlık deresi spring, mezarlık deresi spring, mandıra deresi spring, erikli water spring) from which water comes to the 1st protection belt villages (Muratdere, Aksutekke, Delielmacık, Ormangözle, Kızılcapınar, Aşağı Armutlu group villages, Camiliyayla, Göynüçek, Cüzağaç, Dombayçayırı Group villages and Erikli, Dodurga Group villages) and the 2nd protection belt includes the drinking and consumption water coming to our Ormangözle and Revnak villages.

b) Main distribution line and installations of the drinking and consumption water coming from the springs of our group villages,

c) The water cistern of the village Delielmacık, sewage pipes and installations of the village Delielmacık.

d) 2 drinking and consumption water springs, cisterns and their drinking water distribution, network pipes and installation of the village Çamyayla.

In our opinion, the actualization of the project is suitable provided that the drinking and consumption water cisterns and installations and the sewage installations will not be approached more than 60 m on the right and left sides, the irrigation, supply and distribution pipelines will not be approached more than 10 m on the right and left sides and the executed works will not cause any changes in our water springs.

The information about our facilities is available in the attached submitted CD.

Furthermore, during the activities the infrastructure and superstructure facilities (drinking water, sewage, agricultural irrigation) and their complementary parts should not get damaged, if they do, the project owner should promptly compensate the damage so that the community is not aggrieved and, in case our springs undergo any change due to the project activities, then the activity should stop immediately.

For your information and action

Tümer AKSULU

Water and Channel Services Director

Attachment : 1 CD

(incoming document registration stamp and signature)

(logo)

REPUBLIC of TURKEY
BILECIK PROVINCE SPECIAL ADMINISTRATION
Directorate of Roads and Transportation Services

Number: 14822499-518-E.1010 February 1st , 2017
Subject :Çekim Enerji Environmental Impact Assessment opinion

DIRECTORATE OF ENVIRONMENTAL PROTECTION AND CONTROL

Ref.: Your letter number 15806764-518/848 dated January 26th, 2017

In the referred letter our Agency opinion is asked concerning the actualization of the "Bozüyük Wind Energy Power Plant (90 mwe/mwm) Project" that is planned to install by Çekim Enerji Yatıurım Üretim ve Ticaret A.Ş. in the location of Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub- province, Bilecik Province, pursuant to the Environmental Impact Assessment Regulations .

The above project was inspected by the technical teams of our directorate only from the viewpoint of the Village roads exit and connection points, the project borders intersect the roads at the responsibility limits of the Bilecik Province Special Administration. Our roads network was sent via (.ncz) numerically; the actualization of the project is suitable provided that our roads will not be damaged, in case of any damages these the roads will be restored to the old condition.

For your information and action

Gökhan YAKŞE

Roads and Transportation Services Assistant Manager

Attachment : 1 CD

(incoming document registration stamp and signature
February 1st, 2017)

(logo)

REPUBLIC of TURKEY
BILECIK PROVINCE SPECIAL ADMINISTRATION
Directorate of Easement and Urban Improvement

Number: 43557313-300-E.964 January 31st , 2017
Subject : Opinion

DIRECTORATE OF ENVIRONMENTAL PROTECTION AND CONTROL

Ref.: Your letter number 484 dated January 26th, 2017

In the referred letter our Agency opinion is asked pursuant to the Environmental Impact Assessment Regulations, concerning the area of which the coordinates were indicated on the attached 1/25.000 scale map where by Çekim Enerji Yatırım Üretim ve Ticaret A.Ş. plans to install the "Bozüyük Wind Energy Power Plant (90 mwe/mwm) Project" in the zone of the villages Çamyayla, Delielmacık, Muratdere, Erikli in the Bozüyük Sub- province, Bilecik Province.

The area with the indicated coordinates is in the Bozüyük Municipality borders, Pazaryeri Municipality borders and the responsibility borders of our Administration.

Within the responsibility borders of our Administration , there is the location of Turbine T34 and at 50 m away in the West where there is the 1/50000 scale development plan and 1/1000 scale implementation plan of the Commercial zone and Ex Residential Urban Works zone and there is no other planned zone besides these.

We kindly request your action pursuant to the 1/100000 scale Bilecik Province Environmental Plan provisions.

For your information

Erol BANDIRMALIOĞLU

Easement and Urban Improvement Manager

ATTACHMENT 4.11

MINUTES OF THE PUBLIC PARTICIPATION MEETING

(logo)

REPUBLIC of TURKEY
GOVERNORSHIP of BILECIK
Directorate of Environment and Urbanization

Number: 42903529-220-01/705 February 17th, 2017
Subject : Bozüyük Wind Energy Power Plant

MINISTRY OF ENVIRONMENT AND URBANIZATION
(Directorate of Environmental Impact Assessment, Permits and Auditing)

Ref.: Your letter number 1176 dated January 19th, 2017

The "Public Participation Meeting" mentioned in the referred letter , concerning the **"Bozüyük Wind Energy Power Plant (90 mwe/mwm) Project"** that is planned to install by Çekim Enerji Yatırım Üretim ve Ticaret A.Ş. in the location of Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub- province, Bilecik Province, was organized by our Directorate within the scope of Article 9 of the current Regulations for Environmental Impact Assessment and took place on February 2nd, 2017 , Thursday at 14:00 hrs in Bilecik Province, Bozüyük Sub- province, Village Government Bulding of the Muratdere village, the minutes of the meeting are attached to our letter.

In the referred letter, the opinion of our Directorate within the frame of its legal authorities, duties and responsibilities, is asked concerning the Environmental Impact Assessment Application File of the "Bozüyük Wind Energy Power Plant (90 mwe/mwm) Project" that is planned to install by Çekim Enerji Yatıurım Üretim ve Ticaret A.Ş. in the location of Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub-province, Bilecik Province, that was prepared pursuant to the Environmental Impact Assessment Regulations and is available on line in the Environmental Impact Assessment Process Management System. Compliance has to be provided with the provisions of the Environmental Law number 2872 and of the Regulations enacted pursuant to this law and with the declarations and guarantees given in the application file.

For your information and action.

(signature)
Hıdır KAHVECI
i.a. Governor
Governor Assistant

ATTACHMENTS:
Attachment 1: Minutes of the Public Participation Meeting (8 pages)
Attachment2: Meeting announcement text and minutes (37 pages)

February 16th, 2017	Engineer	: G.ELIUZ (Paraph)
February 16th, 2017	Engineer	: Ö.KURT (Paraph)
February 16th, 2017	Engineer	: H.Y. ÇAKIR (Paraph)
February 16th, 2017	Engineer	: S. BAYRAKÇI (Paraph)

MINUTES OF THE PUBLIC PARTICIPATION MEETING
HELD WITHIN THE ENVIRONMENTAŞ IMPACT ASSESSMENT PROCESS OF THE "BOZÜYÜK WIND ENERGY POWER PLANT (90 MWE/MWM) PROJECT" THAT IS PLANNED TO INSTALL BY ÇEKIM ENERJI YATIRIM ÜRETIM VE TICARET A.Ş. IN THE LOCATION OF ÇAMYAYLA, DELIELMACIK, MURATDERE, ERIKLI VILLAGES OF THE BOZÜYÜK SUB- PROVINCE, BILECIK PROVINCE

The Public Participation Meeting for informing the community and getting the opinions and suggestions of the regional people pursuant to Clause 9 of the Environmental Impact Assessment Regulation enacted by publication in the Official Gazette Issue number 29186 dated Nov ember 25th, 2014 regarding the **"Bozüyük Wind Energy Power Plant (90 mwe/mwm) Project"** that is planned to install by Çekim Enerji Yatırım Üretim ve Ticaret A.Ş. in the location of Çamyayla, Delielmacık, Muratdere, Erikli Villages of the Bozüyük Sub- province, Bilecik Province, was opened on **February 2nd, 2017 , Thursday at 14:00 hrs in our Province, Bozüyük Sub-province, Village Government Bulding of the Muratdere village.**

At least two days prior to the meeting, two announcements mentioning the place, date and hour of the Public Participation Meeting were published in the daily **Posta Newspaper** of January 21st, 2017 distributed country wide and in the local daily **Yayın Newspaper** of January 21st, 2017, issue number 18366.Besides, announcements indicating the place, date and hour of the meeting were made to the places that would prbe-ably suffer the impact of the project.

The minutes of the meeting are attached and the name and signatures of the participant institutions, enterprises and persons were asked to sign below in our presence. February 2nd, 2017 .

ATTACHMENT:
Date : February 2nd, 2017
Time : 14:000

OPINONS AND SUGGESTIONS OF PEOPLE AT THE PUBLIC PARTICIPATION MEETING ABOUT THE "BOZÜYÜK WIND ENERGY POWER PLANT (90 MWE/MWM) PROJECT" THAT IS PLANNED TO INSTALL BY ÇEKIM ENERJI YATIRIM ÜRETIM VE TICARET A.Ş. IN THE LOCATION OF ÇAMYAYLA, DELIELMACIK, MURATDERE, ERIKLI VILLAGES OF THE BOZÜYÜK SUB- PROVINCE, BILECIK PROVINCE

The meeting started with the opening speech of the Bilecik Environment and Urbanization Province Manger Assistant Hatice Yeşim Çakır who presided the meeting. Geology Engineer Birol ÇOBAN from the consultant company Enerji Çevre Yatırımları vew Dan. Haritacılık Imar Inş. A.Ş., presented detailed information abou the project.

NAME SURNAME OF THE PERSON WHO ASKED THE QUESTION : BARIŞ KAHRAMAN

PROFESSION : (Muratdere Village Community)

QUESTION : How will be the transmission of the T33 and T34 turbines?, what will happen to the agricultural lands between these turbines? How will be the expropriation settled?, will the turbine be surrounded by wire fence for safety?

REPLY : The turbine transmission line will be subterranean. The land will be rented or purchased. Permissions will be obtained from the public agencies. Expropriation will be done. Turbines will not be surrounded by wires. Concrete foundation will be made on a small area.

NAME SURNAME OF THE PERSON WHO ASKED THE QUESTION : ISMAIL KURT

PROFESSION : (Muratdere Village Headman)

QUESTION : Is it dangerous if the rotor blades freeze? Will there any security measure be taken? Would it impact the surroundings due to wind? During construction will employment be provided from this region?

REPLY : There is no danger. In case of frost, the turbines will stop. There will be no negative environmental impacts. During the construction period employment will be provided from the close surroundings.

NAME SURNAME OF THE PERSON WHO ASKED THE QUESTION : ZEKİ UYANIK

PROFESSION : Member of Province General Council

QUESTION : Will the transmission be underground? How will be the passage route? Is there any study going on on this subject? Will the forests among the Erikli- Muratdere - Camiliyayla village perish?

REPLY : The necessary assessment on thni subject will be done and the required permits will be obtained.

NAME SURNAME OF THE PERSON WHO ASKED THE QUESTION : ORHAN ÜLKER

PROFESSION : Muratdere Madencilik

QUESTION : We have a mine in this zone. What about the poles in our operation permit area?

REPLY : MIGEM is appointed as a member of the commission within the scope of this project, rthe investment will take start after the consensus will be reached.

NAME SURNAME OF THE PERSON WHO ASKED THE QUESTION : GÖKHAN GÜL

PROFESSION : Delielmacık Village

QUESTION : What will be the height of turbines? Will they be affected by lightening? Will the stock breeding be impacted?

REPLY : There will be less impact because there will be turbines.

NAME SURNAME OF THE PERSON WHO ASKED THE QUESTION : ISMAIL KURT

PROFESSION : (Muratdere Village Headman)

QUESTION **:** How will the connection roads be? Will the available roads be widened?

REPLY **:** There is a road available to the Erikli village. The necessary permissions will be obtained for the roads. The available roads will be widened.

NAME SURNAME OF THE PERSON WHO ASKED THE QUESTION : BARIŞ KAHRAMAN

PROFESSION : (Muratdere Village Community)

QUESTION *:* To which extent does the noise mentioned in the project disturb the surroundings?

REPLY **:** The noise will not be work noise but there will be the sound of turbines. The sound values are within the limits foreseen b y the regulations.

NAME SURNAME OF THE PERSON WHO ASKED THE QUESTION : IBRAHIM DOĞAN

PROFESSION : (National Parks Chief)

QUESTION : There are wild animals in the region. Will the animals be impacted?

REPLY **:** The report for the birds was prepared as well as the necessary measures.

NAME SURNAME OF THE PERSON WHO ASKED THE QUESTION : ISMAIL HAKKI KARAKÖÇ

PROFESSION : (Kızılcapınar Village Headman)

QUESTION : Will the turbines affect the rain clouds?

REPLY : Since it is a matter of clean energy, the climate will not be affected.

NAME SURNAME OF THE PERSON WHO ASKED THE QUESTION :

PROFESSION :

QUESTION :

REPLY :

NAME SURNAME OF THE PERSON WHO ASKED THE QUESTION :

PROFESSION :

QUESTION :

REPLY :

List of participants in the Public Participation Meeting about the "**Bozüyük Wind Energy Power Plant (90 mwe/mwm) project"** that is planned to install by **Çekim Enerji Yatirim Üretim ve Ticaret A.Ş.** in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province.

NAME, SURNAME ADDRESS SIGNATURE

İsmail Zeki UYANIK	BOZÜYÜK	
Barış KAHRAMAN	Muratdere Köyü	
Ayhan AYDIN	Kozpınar Köyü	
İbrahim Yılmaz	Çamyayla Köyü	
Ahmet EREN	Bozüyük	
İslam Avcı	Erikli Köyü.	
Adem KARAGÖZ	Pazaryeri, Fıranlar Köyü	
Cengiz Dinç	Delielmacık köyü	
Bedri BALABAN	Bilecik AFAD	
Ali ANA	Delielmacık Köyü	
Naci Özen	= =	
H. Hüseyin Baltacı	Muratdere Köyü	
İsmail Mesut	Muratdere	
Mustafa [illegible]	Muratdere	
A. Emin Dinç	Muratdere	
H. HÜSEYİN	Muratdere	
ZEKİ DURAN	MURATDERE	
Besim GÖZ	[illegible]	
A. Osman [illegible]	Muratdere	

List of participants in the Public Participation Meeting about the "**Bozüyük Wind Energy Power Plant (90 mwe/mwm) project"** that is planned to install by **Çekim Enerji Yatirim Üretim ve Ticaret A.Ş.** in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province.

NAME, SURNAME	ADDRESS	SIGNATURE
İsmail KURT	Muratdere	
Şerafettin Akay	Sarıdayı K.	
Adem Özen	Sarıdayı K.	
Mustafa Bacaklar	Muhtar Altıntekke köy	
Mesut Keçici	Muratdere	
Halil Baltaş	Muratdere	
Erhan Ülker	Muratdere	
Gökhan Erol	Delielmacık	
Erol Önem	Delielmacık	
İsmail Baykara	M.dere	
Erhan Bostan	M.dere	
Ergin Meydan	Ç. Muhtarlık	
İsmail Hakkı Karakaş	Muhtar	
İsa Karasu	Kızılcapınar	
Murat Duran	Muratdere	
Hikmet Gökçe	Çamyayla	
Bekir Ülker	Muratdere	
İbrahim Duran	Muratdere	
Alattin Koç	" "	
Apdüs Koçcu	" "	
Osman Bostan	" "	
Tekin Gülcü	" "	

List of participants in the Public Participation Meeting about the "**Bozüyük Wind Energy Power Plant (90 mwe/mwm) project"** that is planned to install by **Çekim Enerji Yatirim Üretim ve Ticaret A.Ş.** in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province.

NAME, SURNAME	**ADDRESS**	**SIGNATURE**
Arif [illegible]	[illegible]	[illegible]
Halil Kalmış	Muratdere	[illegible]
Cengiz UYGUN	Cumhuriyet Köyü	[illegible]
Bahri Uygun	Cumhuriyet	[illegible]

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REPUBLIC of TURKEY
GOVERNORSHIP of BILECIK
Province Directorate of Environment and Urbanization

Number: 42903529-220-01/366 January 24th, 2017
Subject : Bozüyük Wind Energy Power Plant Project
Meeting date

DISTRIBUTION PLACES

Ref.: Letter number 1176 dated January 19th, 2017 of our Ministry

With the referred letter of our Ministry it is informed that the Environmental Impact Assessment process took start and during this process it is required to organize the "Public Participation Meeting" on the date of February 2nd, 2017 concerning the "**Bozüyük Wind Energy Power Plant (90 mwe/mwm) project"** that is planned to install by **Çekim Enerji Yatirim Üretim ve Ticaret A.Ş.** in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province.

In this respect, we would request your acknowledgement and action concerning the appointment of your representative with competent professional information and experience, authorized to declare opinion in name of your institution within the frame of the authority, duties and responsibilities attributed by your institution in order to participate in your name to the Public Participation Meeting organized on **February 2nd, 2017 , Thursday at 14:00 hrs in our Province, Bozüyük Sub- province, Village Government Bulding of the Muratdere village** pursuant to Article 9 of the Regulations for Environmental Impact Assessment enacted by their publication in the Official Gazette Issue number 29186 dated October 25th, 2014 (as amended in the Official Gazette Issue number 29619 dated February 9th, 2016).

Hıdır KAHVECI (signature)
i. a. Governor
Governor Assistant

DISTRIBUTION:
- Mayoralty /BILECIK
- General Secretariat of the Province Special Administration/ BILECIK
- State Water Affaires 3rd Regional Directorate (Taşköprü Cad. No. 2 Eskişehir)
- Province Directorate of Food, Agriculture and Livestock/ BILECIK
- Province Directorate of Health/ BILECIK
- Province Directorate of Science, Industry and Technology/ BILECIK
- Province Directorate of Forests Administration/ BILECIK
- Province Directorate of Culture and Tourism/ BILECIK
- Presidency of the Chamber of Industry and Trade/ BILECIK
- Bilecik Branch Directorate of Forests and Water Affaires/ BILECIK
- Province Directorate of Disaster and Emergency/ BILECIK

January 23rd, 2017 Environment Engineer	:	S. BILMEDIK (paraf)
January 23rd, 2017 i.a. Branch Manager	:	Ö. KURT (paraf)
January 23rd, 2017 i.a. Assistant Manager	:	H.Y.ÇAKIR (paraf)
January 23rd, 2017 Manager	:	Ö. BOLAT(paraf)

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REPUBLIC of TURKEY
GOVERNORSHIP of BILECIK
Province Directorate of Environment and Urbanization

Number: 42903529-220-01/365 January 24th, 2017
Subject : Bozüyük Wind Energy Power Plant Project
Meeting date

BOZÜYÜK SUB- GOVERNORSHIP

Bozüyük/ BILECIK

Ref.: Letter number 1176 dated January 19th, 2017 of our Ministry

With the referred letter of our Ministry it is informed that the Environmental Impact Assessment process took start and during this process it is required to organize the "Public Participation Meeting" on the date of February 2nd, 2017 concerning the "**Bozüyük Wind Energy Power Plant (90 mwe/mwm) project"** that is planned to install by **Çekim Enerji Yatirim Üretim ve Ticaret A.Ş.** in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province.

In this respect, we would request that the necessary security measures are taken for the Public Participation Meeting organized on **February 2nd, 2017 , Thursday at 14:00 hrs in our Province, Bozüyük Sub- province, Village Government Bulding of the Muratdere village** pursuant to Article 9 of the Regulations for Environmental Impact Assessment enacted by their publication in the Official Gazette Issue number 29186 dated October 25th, 2014 (as amended in the Official Gazette Issue number 29619 dated February 9th, 2016).

Hıdır KAHVECI (signature)
i. a. Governor
Deputy Governor

January 23rd, 2017 Environment Engineer : S. BILMEDIK (paraf)
January 23rd, 2017 i.a. Branch Manager : Ö. KURT (paraf)
January 23rd, 2017 i.a. Assistant Manager : H.Y.ÇAKIR (paraf)
January 23rd, 2017 Manager : Ö. BOLAT(paraf)

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REPUBLIC of TURKEY
GOVERNORSHIP of BILECIK
Province Directorate of Environment and Urbanization

Number: 42903529-220-01/ January 24th, 2017
Subject : Bozüyük Wind Energy Power Plant Project
Meeting date

ENERJİ ÇEVRE YATIRIMLARI VE DAN. HARITACILIK IMAR INŞ.A.Ş.
Mahatma Gandi Cad. No. 91/2 G.O.P. / ANKARA

Ref.: Your letter number DY/Ç/2017-0033 dated January 20th, 2017

With the referred letter of our Ministry it is informed that a "Public Participation Meeting" is organized on **February 2nd, 2017 , Thursday at 14:00 hrs in our Province, Bozüyük Sub- province, Village Government Bulding of the Muratdere village** pursuant to Article 9 of the Regulations for Environmental Impact Assessment enacted by their publication in the Official Gazette Issue number 29186 dated October 25th, 2014 (as amended in the Official Gazette Issue number 29619 dated February 9th, 2016), concerning the "**Bozüyük Wind Energy Power Plant (90 mwe/mwm) project"** that is planned to install by **Çekim Enerji Yatirim Üretim ve Ticaret A.Ş.** in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province and the opinion of our Directorate on the meeting place and time is requested.

The subject event is considered suitable provided that the **Village Government Bulding of the Muratdere village** is chosen as the place of event; the date and time of event is communicate to the regional community by the announcement method and at least ten days before the event its announcement is published in one local and one national newspaper.

Ömer BOLAT
Province Director of Environment and Urbanization

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REPUBLIC of TURKEY
GOVERNORSHIP of BILECIK
Province Directorate of Environment and Urbanization

Number: 42903529-220-01/
Subject : Public Participation Meeting

DIRECTORSHIP

Ref.: Letter number 1176 dated January 19th, 2017 of our Ministry

With the referred letter of our Ministry it is informed that the Environmental Impact Assessment process took start and during this process , the "Public Participation Meeting" is required to be organized by our Province Directorate on the date of February 2nd, 2017 concerning the "**Bozüyük Wind Energy Power Plant (90 mwe/mwm) project"** that is planned to install by **Çekim Enerji Yatirim Üretim ve Ticaret A.Ş.** in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province.

In this respect, we would request that Assistant Manager Hatice Yeşim ÇAKIR would prerside the Public Participation Meeting organized on **February 2nd, 2017 , Thursday at 14:00 hrs in our Province, Bozüyük Sub- province, Village Government Bulding of the Muratdere village** pursuant to Article 9 of the Regulations for Environmental Impact Assessment enacted by their publication in the Official Gazette Issue number 29186 dated October 25th, 2014 (as amended in the Official Gazette Issue number 29619 dated February 9th, 2016).

The request is submitted to your approval.

Ömer KURT
Environmental Impact Assessment and
Environmental Permits Branch Manager

Suitable opinion

February 2nd, 2017
Hatice Yeşim ÇAKIR
Assistant Manager

APPROVED

February 2nd, 2017
Ömer KURT
Environmental Impact Assessment and
Environmental Permits Branch Manager

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(logo)

REPUBLIC of TURKEY
GOVERNORSHIP of BILECIK
Province Directorate of Environment and Urbanization

Number: 42903529-220-01/ January 24th, 2017
Subject : Bozüyük Wind Energy Power Plant Project
Meeting date

DISTRIBUTION PLACES

With the referred letter of our Ministry it is informed that the Environmental Impact Assessment process took start and during this process , the "Public Participation Meeting" is required to be organized by our Province Directorate on the date of February 2nd, 2017 concerning the "**Bozüyük Wind Energy Power Plant (90 mwe/mwm) project"** that is planned to install by **Çekim Enerji Yatirim Üretim ve Ticaret A.Ş.** in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province.

In this respect, we would request your acknowledgement and action concerning the appointment of your representative with competent professional information and experience, authorized to declare opinion in name of your institution within the frame of the authority, duties and responsibilities attributed by your institution in order to participate in your name to the Public Participation Meeting organized on **February 2nd, 2017 , Thursday at 14:00 hrs in our Province, Bozüyük Sub- province, Village Government Bulding of the Muratdere village** pursuant to Article 9 of the Regulations for Environmental Impact Assessment enacted by their publication in the Official Gazette Issue number 29186 dated October 25th, 2014 (as amended in the Official Gazette Issue number 29619 dated February 9th, 2016).

For your information and action

Ömer KURT
Environmental Impact Assessment and
Environmental Permits Branch Manager Assistant

DISTRIBUTION:
- Development and Planning Branch Directorate
- Natural Assets Preservation Branch Directorate

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(logo)

REPUBLIC of TURKEY
GOVERNORSHIP of BILECIK
Province Directorate of Environment and Urbanization

Number: 42903529-220-01/367 January 24th, 2017
Subject : Bozüyük Wind Energy Power Plant Project
Meeting date

DISTRIBUTION PLACES

Ref.: Letter number 1176 dated January 19th, 2017 of our Ministry

With the referred letter of our Ministry it is informed that the Environmental Impact Assessment process took start and during this process it is required to organize the "Public Participation Meeting" on the date of February 2nd, 2017 concerning the "**Bozüyük Wind Energy Power Plant (90 mwe/mwm) project"** that is planned to install by **Çekim Enerji Yatirim Üretim ve Ticaret A.Ş.** in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province.

In this respect, the Public Participation Meeting will be organized on **February 2nd, 2017 , Thursday at 14:00 hrs in our Province, Bozüyük Sub- province, Village Government Bulding of the Muratdere village** pursuant to Article 9 of the Regulations for Environmental Impact Assessment enacted by their publication in the Official Gazette Issue number 29186 dated October 25th, 2014 (as amended in the Official Gazette Issue number 29619 dated February 9th, 2016).

The ANNOUNCEMENT including the meeting agenda, date and time of the meeting is submitted attached to this letter. We kindly request the Meeting announcement be posted somewhere easily noticeable by people and the minutes that will be kept as the result of the announcement be sent urgently to our Governorship (Province Directorate of Environment and Urbanization).

For your information and action

Hıdır KAHVECI (signature)
i. a. Governor
Deputy Governor

Attachments: 1. Announcement (1 page)
2. Distribution list (1 page)

January 23rd, 2017 Environment Engineer	:	S. BILMEDIK (paraf)
January 23rd, 2017 i.a. Branch Manager	:	Ö. KURT (paraf)
January 23rd, 2017 i.a. Assistant Manager	:	H.Y.ÇAKIR (paraf)
January 23rd, 2017 Manager	:	Ö. BOLAT(paraf)

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ANNOUCEMENT

The Environmental Impact Assessment process concerning the File prepared within the frame of the Environmental Impact Assessment General Format (Attachment III) and presented to the Republic of Turkey Ministry of Environment and Urbanization regarding the "**Bozüyük Wind Energy Power Plant (90 mwe/mwm) project"** that is planned to install by **Çekim Enerji Yatirim Üretim ve Ticaret A.Ş.** in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province took start for having the assessment performed by the commission established pursuant to Article 8 of the Regulations for Environmental Impact Assessment enacted by their publication in the Official Gazette Issue number 29186 dated November 25th, 2014 (as amended in the Official Gazette Issue number 29169 dated February 9th, 2016).

Pursuant to clause 9 under topic **"Public Participation Meeting"** of the Environmental Impact Assessment regulations, the project owner will organize the **"Public Participation Meeting"** at the date and time mentioned below in order to give information to people about the project and to get their opinions and suggestions.

For the information of the public

Date : February 2nd, 2017

Time : 14:00 hrs

Place : Muratdere Village Government Bulding, Muratdere village
Bozüyük/ BILECIK

GOVERNORSHIP of BILECIK
Province Directorate of Environment and Urbanization

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DISTRIBUTION LIST:

- Bozüyük Mayoralty/BILECIK

- Pazaryeri Mayoralty/BILECIK

- Dodurga Mayoralty/Bozüyük/ BILECIK

- Governorship City Hall Directorate / BILECIK

- Bozüyük Sub Governoship/ BILECIK

- Pazaryeri Sub Governoship/ BILECIK

-Kozpınar Village Headman/ Bozüyük/ BILECIK

-AksutekkeVillage Headman/ Bozüyük/ BILECIK

- Erikli Village Headman/ Bozüyük/ BILECIK

- Camiliyayla Village Headman/ Bozüyük/ BILECIK

- Muratdere Village Headman/ Bozüyük/ BILECIK

- Ormangözle Village Headman/ Bozüyük/ BILECIK

- KızılcapınarVillage Headman/ Bozüyük/ BILECIK

- RevnakVillage Headman/ Bozüyük/ BILECIK

- Çaydere Village Headman/ Bozüyük/ BILECIK

- DelielmacıkVillage Headman/ Bozüyük/ BILECIK

- Aşağıarmutlu Village Headman/ Bozüyük/ BILECIK

- ÇamyuvaVillage Headman/ Bozüyük/ BILECIK

- SarıdayıVillage Headman/ Pazaryeri/ BILECIK

- FıranlarVillage Headman/ Pazaryeri/ BILECIK

(logo)

REPUBLIC of TURKEY
GOVERNORSHIP of BILECIK
Province Directorate of Environment and Urbanization

Number: 42903529-220-01/364 January 24th, 2017
Subject : Bozüyük Wind Energy Power Plant Project
Meeting date

MINISTRY OF ENVIRONMENT AND URBANIZATION
(General Directorate of Environmental Impact Assessment, Permits and Auditing)

Ref.: Your letter number 1176 dated January 19th, 2017

In your referred letter it is informed that the Environmental Impact Assessment process concerning the "**Bozüyük Wind Energy Power Plant (90 mwe/mwm) project"** that is planned to install by **Çekim Enerji Yatirim Üretim ve Ticaret A.Ş.** in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province took start and during this process our Directorate is rewquested to organize the "Public Participation Meeting" on the date of February 2nd, 2017

In this respect, the Public Participation Meeting will be organized on **February 2nd, 2017 , Thursday at 14:00 hrs in our Province, Bozüyük Sub- province, Village Government Bulding of the Muratdere village** pursuant to Article 9 of the Regulations for Environmental Impact Assessment enacted by their publication in the Official Gazette Issue number 29186 dated October 25th, 2014 (as amended in the Official Gazette Issue number 29619 dated February 9th, 2016). The announcements the meeting date and time will be sent to the settlements around the impact area and the minutes that will be kept at the meeting be sent to us.

For your information ,

Hıdır KAHVECI (signature)
i. a. Governor
Deputy Governor

January 23rd, 2017 Environment Engineer : S. BILMEDIK (paraf)
January 23rd, 2017 i.a. Branch Manager : Ö. KURT (paraf)
January 23rd, 2017 i.a. Assistant Manager : H.Y.ÇAKIR (paraf)
January 23rd, 2017 Manager : Ö. BOLAT(paraf)

REPUBLIC of TURKEY
DODURGA MUNICIPALITY

Number: 26924460/304.99/10 January 30th, 2017
Subject : Bozüyük Wind Energy Power Plant Project
Meeting date announcement

PROVINCE DIRECTORATE OF ENVIRONMENT AND URBANIZATION
BILECIK

Ref.: Your letter number 42903529-230.01/367 dated January 24th, 2017

The date of the Bozüyük Wind Energy Power Plant Project meeting was announced by ourt Municipality Announcement Service and the loud speaker record is sent attached to this letter.

(signature)
Selim TUNA
Mayor

Attachment: Announcement official report (1 page)

LOUD SPEAKER ANNOUNCEMENT OFFICIAL REPORT

PROVINCE DIRECTORATE OF ENVIRONMENT AND URBANIZATION
BILECIK

This record shows that the announcement asked by the reference number 367 dated January 24th, 2017 was made three times in every part of the region.

January 30th, 2017

1. Announcement date: January 26th, 2017

2. Announcement date: January 27th, 2017

3. Announcement date: January 30th, 2017

Municipal Police
(signature)

Municipality Wireless
(signature)

The attached announcement number 10 dated January 30th, 2017 was diffused everywhere in the region by laud speaker. For the information of the Presidency.

January 30th, 2017

Municipality Commissary

The announcement was returned.
Respectfully,

(signature)
Selim TUNA
Mayor

488

(logo)

Date : January 20th, 2017

Number : DT/Ç/2017-0033

Subject : Bozüyük Wind Energy Power Plant Project
Public Participation Meeting date announcement

REPUBLIC of TURKEY
GOVERNORSHIP of BILECIK
PROVINCE DIRECTORATE OF ENVIRONMENT AND URBANIZATION
BILECIK

The "Bozüyük Wind Energy Power Plant (90 mwe/mwm) project" t is planned to install and operate by ÇEKIM ENERJI YATIRIM ÜRETIM VE TICARET A.Ş. in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province.

In relation to this project, the Public Participation Meeting will be organized on **February 2nd, 2017 , Thursday at 14:00 hrs at the Village Government Bulding of the Muratdere village,** pursuant to Article 9 of the Regulations for Environmental Impact Assessment enacted by their publication in the Official Gazette Issue number 29186 dated October 25th, 2014 (as amended in the Official Gazette Issue number 29619 dated February 9th, 2016) in order to provide the participation of the community in the project, to inform them about the project and to get their opinions and suggestions. The text of the announcement on the subject matter is submitted attached. For your kind information and action.

Respectfully

ÇEKIM ENERJI YATIRIM ÜRETIM VE TICARET A.Ş
i.a. Suat YETIŞEN

(signature)

Attachment: ANNOUNCEMENT TEXT

ANNOUNCEMENT

Meeting of Public Participation in the
Environmental Impact Assessment Process

ÇEKIM ENERJI YATIRIM ÜRETIM VE TICARET A.Ş. plans to install and operate the "Bozüyük Wind Energy Power Plant (90 mwe/mwm)" in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Province. In relation to this project, the "Public Participation Meeting" will be organized at the date and place indicated below in order to provide the participation of the community in the project, to inform the people about the project and to get their opinions and suggestions.

It is announced with respect to our community people.

Meeting place	: Village Government Bulding of the Muratdere village
Address of the meeting place	: Muratdere Village/ Bozüyük/ BILECIK
Meeting date	: February 2nd, 2017
Meeting time	: 14:00 hrs

Project owner	: ÇEKIM ENERJI YATIRIM ÜRETIM VE TICARET A.Ş
Phone	: 0 312 492 03 06
Facsimile	: 0 312 490 94 81

Enterprise that prepared the Environmental Impact Assessment Report: ENÇEV ENERJİ ÇEVRE YATIRIMLARI VE DANIŞMANLIĞI HARİTACILIK IMAR INŞAAT A.Ş.

Phone : (0 312 447 25 22)
Facsimile : (0 312 446 38 10)

www.encev.com.tr

REPUBLIC of TURKEY
DODURGA MUNICIPALITY

Number: 26924460/304.99/10 January 30th, 2017
Subject : Bozüyük Wind Energy Power Plant Project
Meeting date announcement

PROVINCE DIRECTORATE OF ENVIRONMENT AND URBANIZATION
BILECIK

Ref.: Your letter number 42903529-230.01/367 dated January 24th, 2017

The date of the Bozüyük Wind Energy Power Plant Project meeting was announced by our Municipality Announcement Service and the loud speaker official report is sent attached to this letter.

(signature)
Selim TUNA
Mayor

Attachment: Announcement Official Report (1 page)

LOUD SPEAKER ANNOUNCEMENT OFFICIAL REPORT

PROVINCE DIRECTORATE OF ENVIRONMENT AND URBANIZATION
BILECIK

This official report shows that the announcement asked by the reference number 367 dated January 24th, 2017 was made three times in every part of the region.

January 30th, 2017

1. Announcement date: January 26th, 2017

2. Announcement date: January 27th, 2017

3. Announcement date: January 30th, 2017

Municipal Police
(signature)

Municipality Wireless
(signature)

The attached announcement number 10 dated January 30th, 2017 was diffused everywhere in the region by laud speaker. This is submitted for the information of the Presidency.

January 30th, 2017

Municipality Commissary

The announcement was returned.
Respectfully,

(signature)
Selim TUNA
Mayor

REPUBLIC of TURKEY
PAZARYERI MUNICIPALITY

ANNOUNCEMENT OFFICIAL REPORT

MAYORALTY OF BILECIK
Province Directorate of Environment and Urbanization
BILECIK

Agency or person ordering the announcement : Province Directorate of Environment and Urbanization
Subject of the announcement : Bozüyük Wind Energy Power Plant Project Meeting
Announcement dates, time and number : Between January 26th, 2017 – January 39th, 2017
Announcement method : By Loudspeaker
Charge amount .....

The Official Report of the above mentioned announcement was issued by ourselves. January 31st, 2017

Announcement Staff
(signature)

Municipality Officer
(signature)

REPUBLIC of TURKEY
PAZARYERI MAYORALTY

Service : Announcement Office

Subject : Announcement Official Report

Number : 57

Ref. : Letter number 42903529-230.01/367 dated January 24th, 2017

The official report of the announcement subject of your referred letter is sent attached.
It is submitted for your kind information.

NOTE

Loudspeaker announcement charge.....
Advertisement charge.....

(other lines not eligible)

(logo)

REPUBLIC of TURKEY
SUB GOVERNORSHIP of PAZARYERİ
Sub- province Editorial Office Directorate

February 3rd, 2017

Number: 73831001-611.02-E.125
Subject : Bozüyük Wind Energy Power Plant Project Meeting date

GOVERNORSHIP OF BILECIK
(Province Directorate of Environment and Urbanization)

Ref.: Your letter number 367 dated January 24th, 2017

The Bozüyük Wind Energy Power Plant Project Meeting date and its related Environmental Impact Assessment announcement sent attached to the referred letter was executed and the announcement official report is sent attached.

It is for your information.

Halil Ibrahim ACIR
Governor Assistant
Deputy Sub-governor

Attachment: Announcement Official Report (1 page)

(incoming document receipt stamp)

(e- signature stamp)

ANNOUNCEMENT OFFICIAL REPORT

The announcement of the Bozüyük Wind Energy Power Plant Project Meeting date and its related Environmental Impact Assessment, sent attached to the letter number 367 dated January 24th, 2017 of the Gorvernorship of Bikecik, Province Directorate of Environment and Urbanization, was posted on the billboard of the Government House of our Sub- province on January 25th, 2017 and was removed from the billboard on the date of February 3rd, 2017. This official report was issued under signature. February 3rd, 2017.

Akın BÜYÜKÖZTÜRK	Recai DEMIR
Chief Editor	Data Preparation Control Operator
(signature)	(signature)

(logo)

REPUBLIC of TURKEY
GOVERNORSHIP of BILECIK
Administrative Services Branch Directorate

Number: 93686785-823.02-E.793 February 2nd, 2017
Subject : Announcement Official Report

BILECIK PROVINCE DIRECTORATE OF ENVIRONMENT AND URBANIZATION

Ref.: a) Letter number 367 dated January 24th, 2017
b) Letter number 247 dated January 17th, 2017

Attached to this letter we send the announcement official reports showing that the announcement texts sent attached to your referred letter were published by posting on the billboard of the Governorship Government Building.

It is for your information.

Halil Ibrahim ACIR
i.a. Governor
Deputy Sub-governor
Building Administrative Supervisor

Attachment: Announcement Official Report (2 pages)

(e- signature stamp)

ANNOUNCEMENT OFFICIAL REPORT

The text of the announcement of the Public Participation Meeting received attached to the letter number 367 dated January 24th, 2017 of the Gorvernorship of Bilecik, Province Directorate of Environment and Urbanization, related to the **"Bozüyük Wind Energy Power Plant (90 mwe/mwm)"** project that is planned to install and operate by Çekim Enerji Yatirim Üretim ve Ticaret A.Ş. in the location of Çamyayla, Delielmacik, Muratdere, Erikli villages of the Bozüyük Sub- province, Bilecik Provinc, was posted on the billboard of the Government House of our Sub- province Between January 25th, 2017 – February 2nd, 2017 and was removed from the billboard on the date of February 2nd , 2017.

February 2nd , 2017

Institution Official

Recai DEMIR
Data Preparation Control Operator
(signature)

Ramazan KARATAŞ
Administrative Services Branch Manager
(Building Office Manager)
(signature)

(logo)

REPUBLIC of TURKEY
MAYORALTY of BOZÜYÜK
Municipality Police Directorate

Ref. : 41591246-823.02-99/479 February 3rd, 2017
Subject: Announcement

GOVERNORSHIP AUTHORITY
(Province Directorate of Environment and Urbanization)
BILECIK

Ref. : Your letter number 367 dated January 24th, 2017

The official report of the announcement sent to us with your referred letter, showing that it has been published to the public by the means of our Directorate since January 21st, 2017, is submitted attached.

It is for your kind information.

Mustafa YÜRÜKÇÜ
i.a. Mayor
Deputy Mayor

Attachment: Announcement Official Report (1 page)

(incoming document receipt stamp)

ANNOUNCEMENT OFFICIAL REPORT

This Official Report was issued concerning the publication of the announcement text received attached to the letter number 367 dated January 24th, 2017 of the Governorship of Bilecik, Province Directorate of Environment and Urbanization, that has been posted for the public on the billboard our Directorate since January 26th, 2017 . January 31st, 2017

(signature)

Ibrahim KARADERE
Municipality Police Staff

(signature)

Bahattin SAĞIRKAYA
Municipality Police Director

logo)

REPUBLIC of TURKEY
SUB-GOVERNORSHIP of BOZÜYÜK
Province Editorial Affairs Directorate

Ref. : 90304168-529-E.346 February 3rd, 2017
Subject: Bozüyük Wind Energy Power Plant Meeting Date

GOVERNORSHIP of BILECIK
(Province Directorate of Environment and Urbanization)

Ref. : Your letter number 367 dated January 24th, 2017

The specimens of the official reports of the announcement publication requested with your referred letter, showing that it has been published by the Bozüyük Mayoralty, Dodurga Mayoralty, Revenue Department, Local Authorities of the Çamyayla Village, Delielmacik Village, Muratdere Village, Erikli Village are submitted attached.

It is for your kind information.

Hasan YAMAN
Sub- Governor

Attachment: Letter and Attachments

(incoming document receipt stamps)

(e- signature stamp)

500