EXPORT CREDIT GUARANTEES OF THE FEDERAL REPUBLIC OF GERMANY

Hermes Cover

# QUESTIONNAIRE FOR THE FERTILIZER AND PESTICIDE INDUSTRY (SECTOR-RELATED QUESTIONS)

The completion of this questionnaire is voluntary. However, replying to the relevant questions as completely as possible will facilitate and speed up the assessment of the environmental, social and human rights impacts of the project for which the German export supplies or services offered for cover are intended. This – together with the questionnaire not related to a particular sector, the completion and submission of which should also be considered in order to speed up the assessment procedure – can replace the description of the environmental, social and human rights impacts in the memorandum.

The questionnaire provides guidance on what information may be important for this sector. It is based on the World Bank/IFC General Environmental Health and Safety (EHS) Guidelines, the IFC EHS Guidelines for Phosphate Fertilizer Manufacturing, the IFC EHS Guidelines for Nitrogenous Fertilizer Production and the IFC EHS Guidelines for Pesticide Manufacturing, Formulation, and Packaging. Additional information on the applicable standards can be found at AGA Portal.

This is a list of possible questions. Depending on the individual case only some of them, or perhaps also additional information, may become relevant in the course of the application procedure. Because of the specific features of each project further clarification may be required.

## CONTENT

## A. Phosphate fertilizer

### A.1. Process and resources consumption

- What type of phosphate fertilizer will be manufactured and what process will be used? Please give a technical description of the individual process steps.
- In the case that a wet process is used: Which acid is used? Does the production plant also include a plant for the production of the acid? Please give details of the production process.
- Does a production-related connection with other (planned) facilities exist (e.g. power generation, harbour facilities)?
- How is the planned plant supplied with energy? What fuels are used?
- How is the planned plant supplied with raw materials (e.g. from what type of deposit does the rock phosphate come; sedimentary or magmatic rock phosphate)?
- Is the mining of raw materials also part of the project? What upstream and downstream process steps are linked with the project?
- How are the finished goods transported away?
- How is the protection of the environment guaranteed in connection with transport, storage, handling and disposal of hazardous substances?
- Please state the resources consumption after the project's completion in accordance with the table below.

**Resource and Energy Consumption**

| Product | Unit | Industry Benchmark | Project Value |
|---|---|---|---|
| **Phosphoric Acid** | Ton phosphate rock/ton $P_2O_5$ | 2,6 – 3,5[(1)] | |
| | Ton $H_2SO_4$/ton $P_2O_5$ | 2,1 – 2,3[(1)] | |
| | KWh/ton $P_2O_5$ | 120 – 180[(1)] | |
| | $m^3$ cooling water/ton $P_2O_5$ | 100 – 150[(1)] | |
| **NPK A** | KWh/ton NPK | 30-33[(1)(2)] | |
| | Total energy for drying MJ/ton NPK | 300-320[(1)(2)] | |
| **NPK B** | KWh/ton NPK | 50[(1)(2)] | |
| | Total energy for drying MJ/ton NPK | 450[(1)(2)] | |
| **NPK C** | KWh/ton NPK | 50 – 109[(2)] | |
| | $m^3$ cooling water/ton NPK | 17[(2)] | |
| | Ton $CO_2$ required/ton $P_2O_5$ | 1[(1)(2)] | |
| **SSP** | KWh/ton SSP | 19 - 34[(2)] | |
| | $m^3$ water/ton SSP | 0,1 - 2[(2)] | |

Notes:
NPK PLANTS A Granulation with a Pipe Reactor and Drum with ammoniation
NPK PLANTS B Mixed Acids Process
NPK PLANTS C Nitrophosphate Process
1. European Fertilizer Manufacturers Association (EFMA). 2000.
2. EU IPPC - Reference Document on Best Available Techniques in Large Volume Inorganic Chemicals – Ammonia, Acids and Fertilizers Industries. December 2006

Source: IFC EHS Guidelines (2007) PHOSPHATE FERTILIZER MANUFACTURING, table 3, page 11

## A.2. Air emissions

- Please state the maximum values of the parameters for any waste gases emitted in mg/Nm³ for all process steps, especially fluorides, PM, $SO_2$, $SO_3$. Please state the maximum values for $SO_2$, $SO_3$, Cd, Pb and Zn in kg/t acid for any sulphuric acid plants. The tables below can serve as reference. Occasionally, not all pollutants listed in the table are emitted or others specific to the project have to be added. Please inform us if that is the case.

| Air Emissions Guidelines for Phosphate Fertilizers Plants | | | |
|---|---|---|---|
| **Pollutant** | **Unit** | **Guideline Value** | **Project Value** |
| **Phosphoric Acid Plants** | | | |
| **Fluorides (gaseous) as HF** | mg/Nm³ | 5 | |
| **Particulate Matter** | mg/Nm³ | 50 | |
| **Phosphate Fertilizer Plants** | | | |
| **Fluorides (gaseous) as HF** | mg/Nm³ | 5 | |
| **Particulate Matter** | mg/Nm³ | 50 | |
| **Ammonia** | mg/Nm³ | 50 | |
| **HCL** | mg/Nm³ | 30 | |
| **$NO_X$** | mg/Nm³ | 500 nitrophosphate unit<br>70 mix acid unit | |
| Source: IFC EHS Guidelines (2007) PHOSPHATE FERTILIZER MANUFACTURING, table 1, page 11 | | | |

- Please also state the emissions after the project's completion for all process steps in accordance with the table below.

| Emissions Generation | | | |
|---|---|---|---|
| **Parameter** | **Unit** | **Industry Benchmark** | **Project Value** |
| **Phosphoric Acid Plants** | | | |
| **Fluoride $SO_2$** | mg/Nm³<br>kg/ton HF | 5 – 30<br>0,001 – 0,01 | |
| **NPK Production – Nitrophosphate Process** | | | |
| **$NH_3$ air emissions** | kg/ton $P_2O_5$ | 0,2 | |
| **$NO_X$ (as $NO_2$) air emissions** | kg/ton $P_2O_5$ | 1,0 | |
| **Fluorides air emissions** | kg/ton $P_2O_5$ | 0,01 | |
| **NPK Production – Mixed Acids Process** | | | |
| **$NH_3$ air emissions** | kg/ton NPK | 0,2 | |
| **$NO_X$ (as $NO_2$) air emissions** | kg/ton NPK | 0,3 | |
| **Fluorides emissions** | kg/ton NPK | 0,02 | |
| **Dust emissions** | kg/ton NPK | 0,2 | |
| **Fluorides air emissions** | mg/Nm³ | 0,4 – 4 | |
| **Dust air emissions** | mg/Nm³ | 30 – 50 | |

| | | | |
|---|---|---|---|
| **Chloride air emissions** | mg/Nm³ | 19 – 20 | |
| Source: IFC EHS Guidelines (2007) PHOSPHATE FERTILIZER MANUFACTURING, table 4, page 12 | | | |

- Please also state the (expected) emission values (in particular greenhouse gas emissions ($CO_2$eq), dust (PM), sulfur dioxide ($SO_2$) and nitrogen oxides ($NO_x$) in mg/Nm³) for any steam and power generation. In the case of plants with a capacity of more than 50 $MW_{thermic}$ please use the questionnaire *Conventional Energy* as guideline.
- Please describe what measures are taken to avoid/reduce air emissions from the site (e.g. selection of suitable raw materials, covering of conveyor belts and storage sites, use of filters, scrubbing systems and cyclones).
- What limit values for ambient air quality are applicable in the buyer's country (please make a table available)? Please state the relevant expected emission levels. Please comment on any changes in the ambient air quality before and after the project implementation. If there are no national limit values, please use the table below.

**WHO Ambient Air Quality Guidelines[1,2]**

| | Averaging Period | IFC Guideline Value [µg/m³] | Guideline Value Host country | Project Value (baseline status) [µg/m³] | Project Value (after implementation) [µg/m³] |
|---|---|---|---|---|---|
| **Sulfur dioxide ($SO_2$)** | 24-hour | 125 (Interim target-1)<br>50 (Interim target-2)<br>20 (guideline) | | | |
| | 10 minute | 500 (guideline) | | | |
| **Nitrogen dioxide ($NO_2$)** | 1-year | 40 (guideline) | | | |
| | 1-hour | 200 (guideline) | | | |
| **Particulate Matter ($PM_{10}$)** | 1-year | 70 (Interim target-1)<br>50 (Interim target-2)<br>30 (Interim target-3)<br>20 (guideline) | | | |
| | 24-hour | 150 (Interim target-1)<br>100 (Interim target-2)<br>75 (Interim target-3)<br>50 (guideline) | | | |
| **Particulate Matter ($PM_{2.5}$)** | 1-year | 35 (Interim target-1)<br>25 (Interim target-2)<br>15 (Interim target-3)<br>10 (guideline) | | | |
| | 24-hour | 75 (Interim target-1)<br>50 (Interim target-2)<br>37.5 (Interim target-3)<br>25 (guideline) | | | |
| **Ozone** | 8-hour daily maximum | 160 (Interim target-1)<br>100 (guideline) | | | |

**Notes**:
[1] World Health Organization (WHO). Air Quality Guidelines Global Update, 2005. PM 24-hour value is the 99th percentile.
[2] Interim targets are provided in recognition of the need for a staged approach to achieving the recommended guidelines.

Source: WORLD BANK/IFC GENERAL EHS GUIDELINES 2007, table 1.1.1, page 4



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- Please describe the on-site monitoring of air emissions as well as ambient air quality levels.

### A.3. Fresh water and effluents

- How much (fresh) water is used on site? Is the water recirculated?
- Where and how is the water withdrawn?
- What wastewater streams are generated?
- How are effluents treated on site? Please also state whether effluents are discharged into a public sewage treatment system or into surface water bodies (river, lake, sea). If there are discharges, please provide information on the quantities of the wastewater streams (e.g. m³/h or l/s).
- If wastewater is discharged directly into a surface water body, please state the values of the wastewater's pollution level in mg/l in accordance with the table below. Occasionally, not all pollutants listed in the table are emitted or others specific to the project have to be added. Please inform us if that is the case.

| Effluents Guidelines for Phosphate Fertilizer Plants | | | |
|---|---|---|---|
| **Pollutant** | **Unit** | **Guideline Value** | **Project Value** |
| **pH** | S.U. | 6 – 9 | |
| **Total Phosphorous** | mg/L | 5 | |
| **Fluorides** | mg/L | 20 | |
| | kg/ton NPK | 0,03 | |
| | kg/ton Phosphorus oxide ($P_2O_5$) | 2 | |
| **TSS** | mg/L | 50 | |
| **Cadmium** | mg/L | 0,1 | |
| **Total Nitrogen** | mg/L | 15 | |
| **Ammonia** | mg/L | 10 | |
| **Total Metals** | mg/L | 10 | |
| Source: IFC EHS Guidelines (2007) PHOSPHATE FERTILIZER MANUFACTURING, table 2, page 11 | | | |

- Please also state the pollution level after the project's completion in accordance with the table below.

| Effluents Generation | | | |
|---|---|---|---|
| **Parameter** | **Unit** | **Industry Benchmark** | **Project Value** |
| **NPK Production – Nitrophosphate Process** | | | |
| **Total nitrogen effluents** | kg/ton $P_2O_5$ | 0,001 – 0,01 | |
| **$P_2O_5$ effluents** | kg/ton $P_2O_5$ | 1,2 | |
| **Fluorides effluents** | kg/ton $P_2O_5$ | 0,7 | |

| NPK Production – Mixed Acids Process | | | |
|---|---|---|---|
| **Total nitrogen effluents** | kg/ton NPK | 0,2 | |
| **Fluorides effluents** | kg/ton NPK | 0,03 | |
| Source: IFC EHS Guidelines (2007) PHOSPHATE FERTILIZER MANUFACTURING, table 4, page 12 | | | |

- Please describe the measures planned to avoid/reduce/treat wastewater.
- Please describe the on-site monitoring of the effluent values.
- How and where are the effluents discharged? Please explicitly comment the on the pH-value and the temperature rise at the point of discharge, describe possible effects of the discharge on the ecology of the water bodies and provide information on the condition and size of the water body (e.g. flow values, flow rate). Please give also details on protection measures.
- What national standards are applicable in the buyer's country for the discharge of sanitary sewage? How is sewage treated before it is discharged? Please state the expected values of the pollution levels in the sewage. If there are no national limit values, please use the table below.

| Indicative Values for Treated Sanitary Sewage Discharges[1] | | | |
|---|---|---|---|
| **Pollutants** | **Units** | **Guideline Value** | **Project Value** |
| **pH** | pH | 6-9 | |
| **BOD** | mg/L | 30 | |
| **COD** | mg/L | 125 | |
| **Total nitrogen** | mg/L | 10 | |
| **Total phosphorus** | mg/L | 2 | |
| **Oil and grease** | mg/L | 10 | |
| **TSS** | mg/L | 50 | |
| **Total coliform bacteria** | MPN[2]/100 ml | 400[1] | |
| **Notes**:<br>[1] Not applicable to centralized, municipal, wastewater treatment systems which are included in EHS Guidelines for Water and Sanitation.<br>[2] MPN = Most Probable Number | | | |
| Source: WORLD BANK/IFC GENERAL EHS GUIDELINES 2007, table 1.3.1, page 30 | | | |

## A.4. Waste

- What relevant waste products are generated on site?
- What measures are taken to avoid, treat and dispose of the waste (solid/liquid) generated and where/how is it deposited if necessary?
- Do the waste products contain any noxious substances (e.g. waste containing acids, fluorine compounds, mercury, lead, radioactive substances)? If so, how are they disposed of?
- Please give also details on possible waste incineration processes (type and quantity of waste, incineration temperature, etc.).
- Please state the amount of waste products generated on site in relation to the amount of output in accordance with the table below.
- Please state the amount of waste/emissions generated after the project's completion in accordance with the table below.

| Waste Generation | | | |
|---|---|---|---|
| **Parameter** | **Unit** | **Industry Benchmark** | **Project Value** |
| **Solid Waste Generation (phosphogypsum) (thermal/wet process)** | ton/ton $P_2O_5$ | 3,2/4 – 5 | |
| Source: IFC EHS Guidelines (2007) PHOSPHATE FERTILIZER MANUFACTURING, table 4, page 12 | | | |

## A.5. Noise

- How far is the nearest residential area away?
- Are noise mitigation measures necessary or planned? If so, what measures?
- Please state the noise impact (existing background noise level and additional noise emissions of the project) on the nearest receptors (industrial estates and residential areas) in dB(A) for day and night after completion of the project in accordance with the table below.

| Noise Level Guidelines[1] | | | | |
|---|---|---|---|---|
| | One Hour $LA_{eq}$ (dBA) | | | |
| **Receptor** | **Guideline Value Daytime (07:00-22:00)** | **Project Value Daytime (07:00-22:00)** | **Guideline Value Nighttime (22:00-07:00)** | **Project Value Nighttime (22:00-07:00)** |
| **Residential; institutional; educational[2]** | 55 | | 45 | |
| **Industrial; commercial** | 70 | | 70 | |
| **Notes**:<br>[1] Guidelines values are for noise levels measured out of doors. Source: Guidelines for Community Noise, WHO, 1999.<br>[2] For acceptable indoor noise levels for residential, institutional, and educational settings refer to WHO (1999). | | | | |
| Source: WORLD BANK/IFC GENERAL EHS GUIDELINES 2007, page 53 | | | | |

- Do the project's noise emissions lead to an increase of the background noise level at the nearest receptors by more than 3 dB(A)?

## A.6. Occupational health and safety

- How were the relevant occupational health and safety hazards identified and assessed (e.g. Hazard Identification Study – HAZID, Hazard and Operability Study – HAZOP or Quantitative Risk Assessment – QRA)?
- What safety measures and/or control systems are planned to prevent accidents from happening and to guarantee safety and health (in particular with regard to chemical hazards, fire, explosions and decomposition reactions) at the workplace?
- What average and maximum noise exposure is to be expected at the workplaces? What safety measures are taken at workplaces where the noise exposure exceeds 85 dB(A)?
- How are subcontractors integrated into the health and safety measures on site?
- Is the occupational safety performance benchmarked against international, published guidelines (e.g. TLV Occupational Exposure Guidelines, ACGIH Biological Exposure Indices, NIOSH Pocket Guide to Chemical Hazards, OSHA Permissible Exposure Limits or EU Indicative Occupational Exposure Limit Values)?
- If the project consists in the modernisation or expansion of an existing plant, please make accident statistics for the past two years available to us.

### A.7. Health and safety of the population

- What measures are taken to minimize impacts and possible risks for adjacent communities in particular with regard to the handling of hazardous materials, the prevention of leakages, fire and explosions, waste disposal, traffic management, emergency planning, cooperation with local rescue teams?

## B. Nitrogenous fertilizer production

### B.1. Process and resource consumption

- What type of nitrogenous fertilizer will be manufactured and what process will be used? Please give a technical description of the individual process steps (including any acid production processes). What fuels are used?
- What catalysts will be used?
- Does a production-related connection with other (planned) facilities exist (e.g. power generation, harbour facilities)?
- How is the planned plant supplied with energy? What fuels are used?
- How is the planned plant supplied with raw materials?
- How are the finished goods transported away?
- How is the protection of the environment guaranteed in connection with transport, storage, handling and disposal of hazardous substances?
- Please state the resources consumption after the project's completion in accordance with the table below.

| Resource and Energy Consumption/Generation | | | |
|---|---|---|---|
| **Product** | **Unit** | **Guideline Value** | **Project Value** |
| **Ammonia** | GJ lower heating value (LHV)/ton $NH_3$ | 28,4 to 32,0[(1)] | |
| **Urea** | GJ/ton urea | 0,4 – 0,45[(1)(2)] | |
| **AN/CAN** | KWh/ ton AN/CAN | 25 – 60 / 10 – 50[(1)(2)] | |
| | kg Steam/ton AN/CAN | 0 – 50 / 150 – 200[(1)] | |
| **Nitric Acis** (Energy Generation) | GJ/ton $HNO_3$ (100%) | 2,4 – 1,6 [(2)] (BAT – Average) | |
| 1) European Fertilizer Manufacturers Association (EFMA) (2000)<br>2) EU IPPC Reference Document on Best Available Techniques in Large Volume Inorganic Chemicals – Ammonia, Acids and Fertilizers Industries (2006) | | | |
| Source: IFC EHS Guidelines (2007) NITROGENOUS FERTILIZERS, table 3, page 12 | | | |

### B.2. Air emissions

- Please state the expected values for air emissions after the project's completion for all process steps in accordance with the table below. Occasionally, not all pollutants listed in the table are emitted or others specific to the project have to be added. Please inform us if that is the case.

| Air Emissions Levels for Nitrogenous Fertilizers Manufacturing Plants | | | |
|---|---|---|---|
| **Pollutant** | **Unit** | **Guideline Value** | **Project Value** |
| **Ammonia Plants[(1)]** | | | |
| **$NH_3$** | mg/Nm³ | 50 | |
| **$NO_X$** | mg/Nm³ | 300 | |



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| | | | |
|---|---|---|---|
| **PM** | mg/Nm³ | 50 | |
| **Nitric Acid Plants** | | | |
| **$NO_X$** | mg/Nm³ | 200 | |
| **$N_2O$** | mg/Nm³ | 800 | |
| **$NH_3$** | mg/Nm³ | 10 | |
| **PM** | mg/Nm³ | 50 | |
| **Urea / UAN Plants** | | | |
| **Urea (prilling/granulation)** | mg/Nm³ | 50 | |
| **$NH_3$ (prilling/granulation)** | mg/Nm³ | 50 | |
| **PM** | mg/Nm³ | 50 | |
| **AN / CAN Plants** | | | |
| **PM** | mg/Nm³ | 50 | |
| **$NH_3$** | mg/Nm³ | 50 | |
| Notes:<br>1. $NO_X$ in flue-gas from the primary reformer. The other emissions are from process, prilling towers, etc. $NO_X$ in all types of plants: temperature 273K (0°C), pressure 101.3 kPa (1 atmosphere), oxygen content 3% dry for flue gas. | | | |
| Source: IFC EHS Guidelines (2007) NITROGENOUS FERTILIZERS, table 1, page 11 | | | |

- Please also state the (expected) emission values (in particular greenhouse gas emissions ($CO_2$eq), dust (PM), sulfur dioxide ($SO_2$) and nitrogen oxides ($NO_x$) in mg/Nm³) for any steam and power generation. In the case of plants with a capacity of more than 50 $MW_{thermic}$ please use the questionnaire *Conventional Energy* as guideline.
- Please describe what measures are taken to avoid/reduce air emissions from the site (e.g. selection of suitable raw materials, covering of conveyor belts and storage sites, use of filters, scrubbing systems and cyclones).
- What limit values for ambient air quality are applicable in the buyer's country (please make a table available)? Please state the relevant expected emission levels. Please comment on any changes in the ambient air quality before and after the project implementation. If there are no national limit values, please use the table below.

| **WHO Ambient Air Quality Guidelines[1,2]** | | | | | |
|---|---|---|---|---|---|
| | **Averaging Period** | **IFC Guideline Value [µg/m³]** | **Guideline Value Host country** | **Project Value (baseline status) [µg/m³]** | **Project Value (after implementation) [µg/m³]** |
| **Sulfur dioxide ($SO_2$)** | 24-hour | 125 (Interim target-1)<br>50 (Interim target-2)<br>20 (guideline) | | | |
| | 10 minute | 500 (guideline) | | | |
| **Nitrogen dioxide ($NO_2$)** | 1-year | 40 (guideline) | | | |
| | 1-hour | 200 (guideline) | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Particulate Matter ($PM_{10}$)** | 1-year | 70 (Interim target-1)<br>50 (Interim target-2)<br>30 (Interim target-3)<br>20 (guideline) | | | |
| | 24-hour | 150 (Interim target-1)<br>100 (Interim target-2)<br>75 (Interim target-3)<br>50 (guideline) | | | |
| **Particulate Matter ($PM_{2.5}$)** | 1-year | 35 (Interim target-1)<br>25 (Interim target-2)<br>15 (Interim target-3)<br>10 (guideline) | | | |
| | 24-hour | 75 (Interim target-1)<br>50 (Interim target-2)<br>37.5 (Interim target-3)<br>25 (guideline) | | | |
| **Ozone** | 8-hour daily maximum | 160 (Interim target-1)<br>100 (guideline) | | | |

**Notes**:
[1] World Health Organization (WHO). Air Quality Guidelines Global Update, 2005. PM 24-hour value is the 99th percentile.
[2] Interim targets are provided in recognition of the need for a staged approach to achieving the recommended guidelines.

Source: WORLD BANK/IFC GENERAL EHS GUIDELINES 2007, table 1.1.1, page 4

- Please describe the on-site monitoring of air emissions as well as ambient air quality levels.

## B.3. Fresh water and effluents

- How much (fresh) water is used on site? Is the water recirculated?
- Where and how is the water withdrawn?
- What wastewater streams are generated?
- How are effluents treated on site? Please also state whether effluents are discharged into a public sewage treatment system or into surface water bodies (river, lake, sea). If there are discharges, please provide information on the quantities of the wastewater streams (e.g. $m^3/h$ or l/s).
- If wastewater is discharged directly into a surface water body, please state the values of the wastewater's pollution level in mg/l in accordance with the table below. Occasionally, not all pollutants listed in the table are emitted or others specific to the project have to be added. Please inform us if that is the case.

| **Effluents Levels for Nitrogenous Fertilizers Manufacturing Plants** | | | |
|---|---|---|---|
| **Pollutant** | **Unit** | **Guideline Value** | **Project Value** |
| **pH** | S.U. | 6 – 9 | |
| **Temperature increase** | °C | <3 | |
| **Ammonia Plants[(1)]** | | | |
| **$NH_3$** | mg/L | 5 | |
| **Total Nitrogen** | mg/L | 15 | |



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| | | | |
|---|---|---|---|
| **TSS** | mg/L | 30 | |
| **Nitric Acid Plants** | | | |
| **$NH_3$** | mg/L | 5 | |
| **Total Nitrogen** | mg/L | 15 | |
| **TSS** | mg/L | 30 | |
| **Urea / UAN Plants** | | | |
| **Urea (prilling/granulation)** | mg urea/L | 1 | |
| **$NH_3$ (prilling/granulation)** | mg/L | 5 | |
| **AN / CAN Plants** | | | |
| **AN** | mg/L | 100 | |
| **$NH_3$** | mg/L | 5 | |
| **Total Nitrogen** | mg/L | 15 | |
| **TSS** | mg/L | 30 | |
| Source: IFC EHS Guidelines (2007) NITROGENOUS FERTILIZERS, table 2, page 12 | | | |

- Please describe the measures planned to avoid/reduce/treat wastewater.
- Please describe the on-site monitoring of the effluent values.
- How and where are the effluents discharged? Please explicitly comment the on the pH-value as well as the temperature rise at the point of discharge, describe possible effects of the discharge on the ecology of the water bodies and provide information on the condition and size of the water body (e.g. flow values, flow rate). Please give also details on protection measures.
- What national standards are applicable in the buyer's country for the discharge of sanitary sewage? How is sewage treated before it is discharged? Please state the expected values of the pollution levels in the sewage. If there are no national limit values, please use the table below.

| **Indicative Values for Treated Sanitary Sewage Discharges[1]** | | | |
|---|---|---|---|
| **Pollutants** | **Units** | **Guideline Value** | **Project Value** |
| **pH** | pH | 6-9 | |
| **BOD** | mg/L | 30 | |
| **COD** | mg/L | 125 | |
| **Total nitrogen** | mg/L | 10 | |
| **Total phosphorus** | mg/L | 2 | |
| **Oil and grease** | mg/L | 10 | |
| **TSS** | mg/L | 50 | |
| **Total coliform bacteria** | MPN[2]/100 ml | 400[1] | |
| **Notes**:<br>[1] Not applicable to centralized, municipal, wastewater treatment systems which are included in EHS Guidelines for Water and Sanitation.<br>[2] MPN = Most Probable Number | | | |
| Source: WORLD BANK/IFC GENERAL EHS GUIDELINES 2007, table 1.3.1., page 30 | | | |

## B.4. Waste

- What relevant waste products are generated on site?
- What measures are taken to avoid, treat and dispose of the waste (solid/liquid) generated and where/how is it deposited if necessary?
- Please give also details on possible waste incineration processes (type and quantity of waste, incineration temperature, etc.).
- Do the waste products contain any noxious substances? If so, how are they disposed of? Please also comment on any spent catalysts.

## B.5. Noise

- How far is the nearest residential area away?
- Are noise mitigation measures necessary or planned? If so, what measures?
- Please state the noise impact (existing background noise level and additional noise emissions of the project) on the nearest receptors (industrial estates and residential areas) in dB(A) for day and night after completion of the project in accordance with the table below.

**Noise Level Guidelines**[1]

| | One Hour $LA_{eq}$ (dBA) | | | |
|---|---|---|---|---|
| **Receptor** | **Guideline Value Daytime (07:00-22:00)** | **Project Value Daytime (07:00-22:00)** | **Guideline Value Nighttime (22:00-07:00)** | **Project Value Nighttime (22:00-07:00)** |
| **Residential; institutional; educational**[2] | 55 | | 45 | |
| **Industrial; commercial** | 70 | | 70 | |

**Notes**:
[1] Guidelines values are for noise levels measured out of doors. Source: Guidelines for Community Noise, WHO, 1999.
[2] For acceptable indoor noise levels for residential, institutional, and educational settings refer to WHO (1999).

Source: WORLD BANK/IFC GENERAL EHS GUIDELINES 2007, table 1.7.1, page 53

- Do the project's noise emissions lead to an increase of the background noise level at the nearest receptors by more than 3 dB(A)?

## B.6. Occupational health and safety

- How were the relevant occupational health and safety hazards identified and assessed (e.g. Hazard Identification Study – HAZID, Hazard and Operability Study – HAZOP or Quantitative Risk Assessment – QRA)?
- What safety measures and/or control systems are planned to prevent accidents from happening and to guarantee safety and health (in particular with regard to chemical hazards, fire, explosions and toxic emissions from ammonia storage tanks) at the workplace?
- What average and maximum noise exposure is to be expected at the workplaces? What safety measures are taken at workplaces where the noise exposure exceeds 85 dB(A)?
- How are subcontractors integrated into the health and safety measures on site?
- Is the occupational safety performance benchmarked against international, published guidelines (e.g. TLV Occupational Exposure Guidelines, ACGIH Biological Exposure Indices, NIOSH Pocket Guide to Chemical Hazards, OSHA Permissible Exposure Limits or EU Indicative Occupational Exposure Limit Values)?
- If the project consists in the modernisation or expansion of an existing plant, please make accident statistics for the past two years available to us.

### B.7. Health and safety of the population

- What measures are taken to minimize impacts and possible risks for adjacent communities in particular with regard to the handling of hazardous materials, waste disposal, leakages, traffic management, emergency planning, cooperation with local rescue teams?

## C. Compound fertilizer

### C.1. Process and resource consumption

- What type of compound fertilizer will be manufactured and what process will be used? Please give a technical description of the individual process steps, including any acid production processes. What fuels are used?
- Does a production-related connection with other (planned) facilities exist (e.g. power generation, harbour facilities)?
- How is the planned plant supplied with energy? What fuels are used?
- How is the planned plant supplied with raw materials?
- How are the finished goods transported away?
- How is the protection of the environment guaranteed in connection with transport, storage, handling and disposal of hazardous substances?

### C.2. Air emissions

- Please state the maximum values of the parameters for any waste gases emitted in mg/Nm³ for all process steps, especially $NO_X$ (as $NO_2$), ammonia ($NH_3$ as N), PM, fluorides (as fluorine), in the case of any combustion processes PM, $SO_x$, $NO_x$.
- Please also state the (expected) emission values (in particular greenhouse gas emissions ($CO_2$eq), dust (PM), sulfur dioxide ($SO_2$) and nitrogen oxides ($NO_x$) in mg/Nm³) for any steam and power generation. In the case of plants with a capacity of more than 50 $MW_{thermic}$ please use the questionnaire *Conventional Energy* as guideline.
- Please describe what measures are taken to avoid/reduce air emissions from the site (e.g. selection of suitable raw materials, covering of conveyor belts and storage sites, use of filters, scrubbing systems and cyclones).
- What limit values for ambient air quality are applicable in the buyer's country (please make a table available)? Please state the relevant expected emission levels. Please comment on any changes in the ambient air quality before and after the project implementation. If there are no national limit values, please use the table below.

**WHO Ambient Air Quality Guidelines[1,2]**

| | Averaging Period | IFC Guideline Value [µg/m³] | Guideline Value Host country | Project Value (baseline status) [µg/m³] | Project Value (after implementation) [µg/m³] |
|---|---|---|---|---|---|
| **Sulfur dioxide ($SO_2$)** | 24-hour | 125 (Interim target-1)<br>50 (Interim target-2)<br>20 (guideline) | | | |
| | 10 minute | 500 (guideline) | | | |
| **Nitrogen dioxide ($NO_2$)** | 1-year | 40 (guideline) | | | |
| | 1-hour | 200 (guideline) | | | |



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| | | | | | |
|---|---|---|---|---|---|
| **Particulate Matter ($PM_{10}$)** | 1-year | 70 (Interim target-1)<br>50 (Interim target-2)<br>30 (Interim target-3)<br>20 (guideline) | | | |
| | 24-hour | 150 (Interim target-1)<br>100 (Interim target-2)<br>75 (Interim target-3)<br>50 (guideline) | | | |
| **Particulate Matter ($PM_{2.5}$)** | 1-year | 35 (Interim target-1)<br>25 (Interim target-2)<br>15 (Interim target-3)<br>10 (guideline) | | | |
| | 24-hour | 75 (Interim target-1)<br>50 (Interim target-2)<br>37.5 (Interim target-3)<br>25 (guideline) | | | |
| **Ozone** | 8-hour daily maximum | 160 (Interim target-1)<br>100 (guideline) | | | |
| **Notes**:<br>[1] World Health Organization (WHO). Air Quality Guidelines Global Update, 2005. PM 24-hour value is the 99th percentile.<br>[2] Interim targets are provided in recognition of the need for a staged approach to achieving the recommended guidelines. | | | | | |
| Source: WORLD BANK/IFC GENERAL EHS GUIDELINES 2007, table 1.1.1, page 4 | | | | | |

- Please describe the on-site monitoring of air emissions as well as ambient air quality levels.

### C.3. Fresh water and effluents

- How much (fresh) water is used on site? Is the water recirculated?
- Where and how is the water withdrawn?
- What wastewater streams are generated?
- Please state the maximum values of the effluent parameters in mg/l, especially for TSS, phosphorus, fluorides as fluorine, cadmium, $NH_4$-N, total metals.
- How are effluents treated on site? Please also state whether effluents are discharged into a public sewage treatment system or into surface water bodies (river, lake, sea). If there are discharges, please provide information on the quantities of the wastewater streams (e.g. $m^3/h$ or l/s).
- Please describe the measures planned to avoid/reduce/treat wastewater.
- Please describe the on-site monitoring of the effluent values.
- How and where are the effluents discharged? Please explicitly comment on the pH value as well as the temperature rise at the point of discharge, describe possible effects of the discharge on the ecology of the water bodies and provide information on the condition and size of the water body (e.g. flow values, flow rate). Please give also details on protection measures.
- What national standards are applicable in the buyer's country for the discharge of sanitary sewage? How is sewage treated before it is discharged? Please state the expected values of the pollution levels in the sewage. If there are no national limit values, please use the table below.

| Indicative Values for Treated Sanitary Sewage Discharges[1] | | | |
|---|---|---|---|
| **Pollutants** | **Units** | **Guideline Value** | **Project Value** |
| **pH** | pH | 6-9 | |
| **BOD** | mg/L | 30 | |
| **COD** | mg/L | 125 | |
| **Total nitrogen** | mg/L | 10 | |
| **Total phosphorus** | mg/L | 2 | |
| **Oil and grease** | mg/L | 10 | |
| **TSS** | mg/L | 50 | |
| **Total coliform bacteria** | MPN[2]/100 ml | 400[1] | |
| **Notes**:<br>[1] Not applicable to centralized, municipal, wastewater treatment systems which are included in EHS Guidelines for Water and Sanitation.<br>[2] MPN = Most Probable Number | | | |
| Source: WORLD BANK/IFC GENERAL EHS GUIDELINES 2007, table 1.3.1., page 30 | | | |

## C.4. Waste

- What relevant waste products are generated on site?
- What measures are taken to avoid, treat and dispose of the waste (solid/liquid) generated and where/how is it deposited if necessary?
- Do the waste products contain any noxious substances? If so, how are they disposed of?

## C.5. Noise

- How far is the nearest residential area away?
- Are noise mitigation measures necessary or planned? If so, what measures?
- Please state the noise impact (existing background noise level and additional noise emissions of the project) on the nearest receptors (industrial estates and residential areas) in dB(A) for day and night after completion of the project in accordance with the table below.

| Noise Level Guidelines[1] | | | | |
|---|---|---|---|---|
| | One Hour $LA_{eq}$ (dBA) | | | |
| **Receptor** | **Guideline Value Daytime (07:00-22:00)** | **Project Value Daytime (07:00-22:00)** | **Guideline Value Nighttime (22:00-07:00)** | **Project Value Nighttime (22:00-07:00)** |
| **Residential; institutional; educational[2]** | 55 | | 45 | |
| **Industrial; commercial** | 70 | | 70 | |
| **Notes**:<br>[1] Guidelines values are for noise levels measured out of doors. Source: Guidelines for Community Noise, WHO, 1999.<br>[2] For acceptable indoor noise levels for residential, institutional, and educational settings refer to WHO (1999). | | | | |
| Source: WORLD BANK/IFC GENERAL EHS GUIDELINES 2007, table 1.7.1, page 53 | | | | |

- Do the project's noise emissions lead to an increase of the background noise level at the nearest receptors by more than 3 dB(A)?

### C.6. Occupational health and safety

- How were the relevant occupational health and safety hazards identified and assessed (e.g. Hazard Identification Study – HAZID, Hazard and Operability Study – HAZOP or Quantitative Risk Assessment – QRA)?
- What safety measures and/or control systems are planned to prevent accidents from happening and to guarantee safety and health (in particular with regard to the handling of hazardous substances) at the workplace?
- What average and maximum noise exposure is to be expected at the workplaces? What safety measures are taken at workplaces where the noise exposure exceeds 85 dB(A)?
- How are subcontractors integrated into the health and safety measures on site?
- Is the occupational safety performance benchmarked against international, published guidelines (e.g. TLV Occupational Exposure Guidelines, ACGIH Biological Exposure Indices, NIOSH Pocket Guide to Chemical Hazards, OSHA Permissible Exposure Limits or EU Indicative Occupational Exposure Limit Values)?
- If the project consists in the modernisation or expansion of an existing plant, please make accident statistics for the past two years available to us.

### C.7. Health and safety of the population

- What measures are taken to minimize impacts and possible risks for adjacent communities in particular with regard to the handling of hazardous materials, the prevention of leakages, waste disposal, traffic management, emergency planning, cooperation with local rescue teams?

## D. Pesticides base material and final product manufacture

### D.1. Process and resource consumption

- What type of pesticides will be manufactured and what process will be used? Please give a technical description of the individual process steps. What fuels are used? Does a production-related connection with other (planned) facilities exist (e.g. power generation, harbour facilities)?
- How is the planned plant supplied with energy? What fuels are used?
- How is the planned plant supplied with raw materials?
- How are the finished goods transported away?
- How is the protection of the environment guaranteed in connection with transport, storage, handling and disposal of hazardous substances?
- Will international standards be met (e.g. Stockholm Convention – POP, World Health Organization (WHO) Recommended Classification of Pesticides by Hazard, Rotterdam Convention [PIC Convention], FAO International Code of Conduct on the Distribution and Use of Pesticides & FAO Revised Guidelines for Good Labelling Practice for Pesticides)?

### D.2. Air emissions

- Please state the expected values for air emissions after the project's completion for all process steps in accordance with the table below. Occasionally, not all pollutants listed in the table are emitted or others specific to the project have to be added. Please inform us if that is the case.

| Air Emissions Levels for Pesticides | | | |
|---|---|---|---|
| **Pollutant** | **Unit** | **Guideline Value** | **Project Value** |
| **Particulate Matter (PM)** | mg/Nm³ | 20; 5[(a)] | |
| **Total Organic Carbon** | mg/Nm³ | 50 | |
| **VOC** | mg/Nm³ | 20 | |
| **Chloride** | mg/Nm³ | 5 | |
| **Bromines (as HBr), Cyanides (as HCN), Fluorines (as HF), Hydrogen Sulfide** | mg/Nm³ | 3 | |
| **Chlorine** | mg/Nm³ | 3 | |
| **Ammonia, Gaseous Inorganic Chlorine Compounds (as HCl)** | mg/Nm³ | 30 | |
| Notes:<br>a) Where very toxic compounds are present | | | |
| Source: IFC EHS Guidelines (2007) PESTICIDE MANUFACTURING, FORMULATION AND PACKAGING, table 1, page 10 | | | |

- Please also state the (expected) emission values (in particular greenhouse gas emissions ($CO_2$eq), dust (PM), sulfur dioxide ($SO_2$) and nitrogen oxides ($NO_x$) in mg/Nm³) for any steam and power generation. In the case of plants with a capacity of more than 50 $MW_{thermic}$ please use the questionnaire *Conventional Energy* as guideline.
- Please describe what measures are taken to avoid/reduce air emissions from the site.
- What limit values for ambient air quality are applicable in the buyer's country (please make a table available)? Please state the relevant expected emission levels. Please comment on any changes in the ambient air quality before and after the project implementation. If there are no national limit values, please use the table below.

| WHO Ambient Air Quality Guidelines[1,2] | | | | | |
|---|---|---|---|---|---|
| | **Averaging Period** | **IFC Guideline Value [µg/m³]** | **Guideline Value Host country** | **Project Value (baseline status) [µg/m³]** | **Project Value (after implementation) [µg/m³]** |
| **Sulfur dioxide ($SO_2$)** | 24-hour | 125 (Interim target-1)<br>50 (Interim target-2)<br>20 (guideline) | | | |
| | 10 minute | 500 (guideline) | | | |
| **Nitrogen dioxide ($NO_2$)** | 1-year | 40 (guideline) | | | |
| | 1-hour | 200 (guideline) | | | |
| **Particulate Matter ($PM_{10}$)** | 1-year | 70 (Interim target-1)<br>50 (Interim target-2)<br>30 (Interim target-3)<br>20 (guideline) | | | |
| | 24-hour | 150 (Interim target-1)<br>100 (Interim target-2)<br>75 (Interim target-3)<br>50 (guideline) | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Particulate Matter ($PM_{2.5}$)** | 1-year | 35 (Interim target-1)<br>25 (Interim target-2)<br>15 (Interim target-3)<br>10 (guideline) | | | |
| | 24-hour | 75 (Interim target-1)<br>50 (Interim target-2)<br>37.5 (Interim target-3)<br>25 (guideline) | | | |
| **Ozone** | 8-hour daily maximum | 160 (Interim target-1)<br>100 (guideline) | | | |

**Notes**:
[1] World Health Organization (WHO). Air Quality Guidelines Global Update, 2005. PM 24-hour value is the 99th percentile.
[2] Interim targets are provided in recognition of the need for a staged approach to achieving the recommended guidelines.

Source: WORLD BANK/IFC GENERAL EHS GUIDELINES 2007, table 1.1.1, page 4

- Please describe the on-site monitoring of air emissions as well as ambient air quality levels.

### D.3. Fresh water and effluents

- How much (fresh) water is used on site? Is the water recirculated?
- Where and how is the water withdrawn?
- What wastewater streams are generated?
- How are effluents treated on site? Please also state whether effluents are discharged into a public sewage treatment system or into surface water bodies (river, lake, sea). If there are discharges, please provide information on the quantities of the wastewater streams (e.g. m³/h or l/s).
- Please state the maximum values of the effluent parameters in mg/l, especially for TSS, BOD, AOX, COD, oil and grease, phenol, arsenic, hexavalent chromium, copper, mercury, each active ingredient (AI), pH value as well as temperature of the effluent and any increase of the temperature at the point of discharge in the table below. Occasionally, not all pollutants listed in the table are emitted or others specific to the project have to be added. Please inform us if that is the case.

**Effluents Levels for Pesticides**

| Pollutants | Units | Guideline Value | Project Value |
|---|---|---|---|
| **pH** | S.U. | 6 – 9 | |
| **$BOD_5$** | mg/L | 30 | |
| **COD** | mg/L | 150 | |
| **TSS** (Lower end for pesticide manufacturing. Higher end for pesticide formulation (monthly average) but in no case more than 50 mg/l) | mg/L | 10 – 20(1) | |
| **Oil and Grease** | mg/L | 10 | |
| **AOX** | mg/L | 1 | |
| **Phenol** | mg/L | 0,5 | |
| **Arsenic** | mg/L | 0,1 | |


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|---|---|---|---|---|
| **Chromium (total)** | | mg/L | 0,5 | |
| **Chromium (hexavalent)** | | mg/L | 0,1 | |
| **Copper** | | mg/L | 0,5 | |
| **Chlorinated organics** | | mg/L | 0,05 | |
| **Nitrorganics** | | mg/L | 0,05 | |
| **Mercury** | | mg/L | 0,01 | |
| **Zinc** | | mg/L | 2 | |
| **Active Ingredient (each)** | | mg/L | 0,05 | |
| **Bioassays Toxicity** | **Toxicity to:** | TU | | |
| | **Fish** | | 2 | |
| | **Daphnia** | | 8 | |
| | **Algae** | | 16 | |
| | **Bacteria** | | 8 | |
| **Ammonia** | | mg/L | 10 | |
| **Total Phosphorus** | | mg/L | 2 | |
| Source: IFC EHS Guidelines (2007) PESTICIDE MANUFACTURING, FORMULATION AND PACKAGING, table 2, page 11 | | | | |

- Please state the load-based daily maximum effluent values and the monthly average values in the table below.

| **Load-based Effluents Levels for Pesticides** | | | | |
|---|---|---|---|---|
| **Pollutants** | **Units** | | **Guideline Value** | **Project Value** |
| **pH** | S.U. | | 6 – 9 | |
| **$BOD_5$** | kg/t | Daily max | 5,3 | |
| | | Mo.avg | 1,2 | |
| **COD** | kg/t | Daily max | 9,4 | |
| | | Mo.avg | 6,5 | |
| **TSS** | kg/t | Daily max | 4,4 | |
| | | Mo.avg | 1,3 | |
| **Active Ingredient (each)** | kg/t | Daily max | 2,8 x 10-9 – 3,4 | |
| | | Mo.avg | 1,3 x 10-6 – 1,0 | |
| U.S. EPA Effluent Guidelines for Pesticide Chemicals, Organic Pesticide Chemicals Manufacturing Subcategory, New Source Performance Standards, 40 CRF Part 455. Levels for specific active ingredients are listed in Table 3 of the regulation. kg/t = kg of pollutant per metric ton of organic active ingredients. | | | | |
| Source: IFC EHS Guidelines (2007) PESTICIDE MANUFACTURING, FORMULATION AND PACKAGING, table 4, page 11 | | | | |

- Please describe the measures planned to avoid/reduce/treat wastewater.

- Please describe the on-site monitoring of the effluent values. Is biological testing in place at the outlet to determine the toxicity?
- How and where are the effluents discharged? Please explicitly comment on the temperature rise at the point of discharge, describe possible effects of the discharge on the ecology of the water bodies and provide information on the condition and size of the water body (e.g. flow values, flow rate). Please give also details on protection measures.
- What national standards are applicable in the buyer's country for the discharge of sanitary sewage? How is sewage treated before it is discharged? Please state the expected values of the pollution levels in the sewage. If there are no national limit values, please use the table below.

| Indicative Values for Treated Sanitary Sewage Discharges[1] | | | |
|---|---|---|---|
| **Pollutants** | **Units** | **Guideline Value** | **Project Value** |
| **pH** | pH | 6-9 | |
| **BOD** | mg/L | 30 | |
| **COD** | mg/L | 125 | |
| **Total nitrogen** | mg/L | 10 | |
| **Total phosphorus** | mg/L | 2 | |
| **Oil and grease** | mg/L | 10 | |
| **TSS** | mg/L | 50 | |
| **Total coliform bacteria** | MPN[2]/100 ml | 400[1] | |
| **Notes**:<br>[1] Not applicable to centralized, municipal, wastewater treatment systems which are included in EHS Guidelines for Water and Sanitation.<br>[2] MPN = Most Probable Number | | | |
| Source: WORLD BANK/IFC GENERAL EHS GUIDELINES 2007, table 1.3.1., page 30 | | | |

## D.4. Waste

- What relevant waste products are generated on site?
- What measures are taken to avoid, treat and dispose of the waste (solid/liquid) generated and where/how is it deposited if necessary?
- Please give also details on possible waste incineration processes (type and quantity of waste, incineration temperature, etc.).
- Please state the amount of waste/wastewater generated after the project's completion in accordance with the table below.

| Waste Generation / Emission Load | | | |
|---|---|---|---|
| **Parameter** | **Unit** | **Industry Benchmark** | **Project Value** |
| **Wastewater** | | | |
| **Total Organic Carbon effluents** | kg/batch mother liquor | 180 (110 refractory) | |
| **Waste** | | | |
| **Manufacturing** | kg/ton of active ingredient manufactured | 200 | |
| **Formulation** | kg/ton of formulated product | 3 – 4 | |
| EU IPPC BREF (2006) | | | |
| Source: IFC EHS Guidelines (2007) PESTICIDE MANUFACTURING, FORMULATION AND PACKAGING, table 3, page 11 | | | |



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## D.5. Noise

- How far is the nearest residential area away?
- Are noise mitigation measures necessary or planned? If so, what measures?
- Please state the noise impact (existing background noise level and additional noise emissions of the project) on the nearest receptors (industrial estates and residential areas) in dB(A) for day and night after completion of the project in accordance with the table below.

**Noise Level Guidelines**[1]

| | One Hour $LA_{eq}$ (dBA) | | | |
|---|---|---|---|---|
| **Receptor** | **Guideline Value Daytime (07:00-22:00)** | **Project Value Daytime (07:00-22:00)** | **Guideline Value Nighttime (22:00-07:00)** | **Project Value Nighttime (22:00-07:00)** |
| **Residential; institutional; educational**[2] | 55 | | 45 | |
| **Industrial; commercial** | 70 | | 70 | |

**Notes**:
[1] Guidelines values are for noise levels measured out of doors. Source: Guidelines for Community Noise, WHO, 1999.
[2] For acceptable indoor noise levels for residential, institutional, and educational settings refer to WHO (1999).

Source: WORLD BANK/IFC GENERAL EHS GUIDELINES 2007, table 1.7.1, page 53

- Do the project's noise emissions lead to an increase of the background noise level at the nearest receptors by more than 3 dB(A)?

## D.6. Occupational health and safety

- How were the relevant occupational health and safety hazards identified and assessed (e.g. Hazard Identification Study – HAZID, Hazard and Operability Study – HAZOP or Quantitative Risk Assessment – QRA)?
- What safety measures and/or control systems are planned to prevent accidents from happening and to guarantee safety and health (in particular with regard to working with chemical hazards and pathogens as well as fire and explosions) at the workplace?
- What average and maximum noise exposure is to be expected at the workplaces? What safety measures are taken at workplaces where the noise exposure exceeds 85 dB(A)?
- How are subcontractors integrated into the health and safety measures on site?
- If the project consists in the modernisation or expansion of an existing plant, please make accident statistics for the past two years available to us.
- Is the occupational safety performance benchmarked against international, published guidelines (e.g. TLV Occupational Exposure Guidelines, ACGIH Biological Exposure Indices, NIOSH Pocket Guide to Chemical Hazards, OSHA Permissible Exposure Limits or EU Indicative Occupational Exposure Limit Values)?
- Are local rescue teams and firefighters prepared for an emergency in the plant (list and site plan of potentially hazardous substances used)?

## D.7. Health and safety of the population

- What measures are taken to minimize impacts and possible risks for adjacent communities in particular with regard to the handling of hazardous materials, the prevention of leakages, waste disposal, traffic management, emergency planning, cooperation with local rescue teams?
- How is the producer responsibility for the products manufactured guaranteed over the total life-cycle (research, development, manufacture of active components, formulation, transport, storage, use and disposal)? Will the requirements of the International Code of Conduct on the Distribution and Use of Pesticides as well as the Revised Guidelines for Good Labelling Practice for Pesticides of the Food and Agriculture Organization be applied?

## E. Additional information

Additional information on the **Common Approaches**, our **environmental, social and human rights due diligence** and the **applicable standards** can be found at:

https://agaportal.de/main-navigation/schnellzugriff-aga-konsortium/verantwortung

The **World Bank/IFC EHS Guidelines** can be found on the website:

http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/our+approach/risk+management/ehsguidelines.



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