

Guidance Note

Environmental Performance Reporting

REP-197-11-DJ
July 2011

Definitions:

<i>ARWA</i>	Advanced Regulatory Wiki Application (produced by SEU)
<i>BAT</i>	Best Available Technique
<i>BRC</i>	Beyond Regulatory Control
<i>Bref</i>	BAT reference document
<i>CA</i>	Competent Authority
<i>EIA</i>	Environmental Impact Assessment
<i>EMP</i>	Environmental Management Plan
<i>EPR</i>	Environmental Performance Report
<i>ER</i>	Environmental Review
<i>H1-2</i>	Half yearly report starting at half year 1 of a specific year
<i>IPPC</i>	Integrated Pollution Prevention and Control
<i>LDAR</i>	Leak Detection and Repair
<i>M1-12</i>	Monthly report January – December of a specific year
<i>MECA</i>	Ministry of Environment and Climate Affairs
<i>NOL</i>	No objection letter
<i>PQL</i>	Practical Quantitation Limit
<i>Q1-4</i>	Quarterly report starting at quarter 1 of a specific year
<i>SEU</i>	Sohar Environmental Unit
<i>SFZ:</i>	Sohar Free Zone
<i>W1-52</i>	Weekly report starting at week 1 of a specific year

1: Objective and approach

Environmental Performance Reporting is a requirement that a permit holder has and that allows the Competent Authority to keep track of the environmental issues on all the relevant environmental compartments. The SEU likes to harmonize the reporting on the environmental issues in order to have a more effective compliance control.

The Guidance Note Environmental Performance Reporting is connected to the Guidance Note Sampling (under construction) and the Guidance Note Analytical Methods (under construction).

Compliance

Environmental Performance of a company is the level of compliance to the imposed environmental requirements. The Environmental Performance Report (EPR) must include the standards and the source of the standard for verification of the compliance with the permit or other requirements.

In addition to the regulatory requirements, a company can decide to perform better, which is called BRC Beyond Regulatory Control (BRC). These additional environmental activities are contributing to the total environmental performance and need to be included into the performance records. Examples are additional monitoring efforts, developing waste recycling routes, process optimization to reduce emissions, etc.

Covered environmental compartments

The EPR covers the regulated environmental compartments that are selected from (but additional reporting requirements might be present) the following list.

Air	Ambient, emissions
Industrial Waste	Construction, hazardous, non-hazardous,
Water	Marine quality, discharge to marine, sewage, deep excavation, irrigation water
Climate	As per Climate Affairs requirements
Noise	On-site, at boundary
Radio Activity	Focused on Radio Active check gates
Industrial Safety	Incident/accident reporting

You are advised to integrate the reporting requirements into the Environmental Management Plan.

2: General reporting

Who

All companies that have an environmental permit.

An EPR must be submitted by the company that holds the permit. Background information can be annexed (e.g. lab reports, subcontractor reports). Subcontractors (e.g. during construction) are reporting through the permit holder and it is the permit holders duty to make sure that subcontractors are compliant with the reporting requirements.

When

The EPR must be submitted to the SEU with the agreed frequency and directly by the permit holder or explicitly on behalf of the permit holder and must mention the name of the responsible person in the company. The covered period must be clearly mentioned. The period numbering convention is that notations start at the beginning of the calendar year (e.g. Q2 2011 means covering the second quarter in 2011 and does **not** mean the second submitted quarterly report).

The reporting frequency is Monthly, Quarterly, Half yearly, Yearly or any other period if so found necessary by the CA. Reporting frequency can be adapted (less frequent, more frequent) based on historical data, process control history and environmental risk.

The EPR is due within 3 weeks after ending of the reporting period.

If a company works on project basis (e.g. rig repair) the EPR must be adopted to the specifics of the project with respect to EPR chapters, parameters and frequency.

How

The EPR format is not regulated but all the required information must be included in a clear presentation of the data. The usual convention of units has to be respected (Mt is interpreted as Mega tons and not as metric tons). The EPR is to be submitted as soft-copy that is send to meca.seu@gmail.com and two hard-copies. E-mail reception will be acknowledged by a reply email.

What

Background information on the reported data is very much appreciated, however repeating the same background information (e.g. method description, equipment description, location layout, etc.) in consecutive reports is not necessary, referring to a previous report is acceptable.

Reportable are special circumstances like e.g. one-off emissions, emergency shutdowns/start-ups, incidents/accidents, major equipment trips.

Production data are to be reported in order to relate the performance to operational parameters like: on-stream time, gas consumption, product tonnage or volume, energy consumption.

In specific cases the composition of raw materials have to be reported (e.g. sulphur content, ash content).

Emissions can be directly measured, indirectly measured or calculated, methods must be reported. Indicated must be if the emission data are generated by grab-sampling or by continuous monitoring.

Continuous monitoring data must be presented graphically (time on the x-axis) in addition to key data like average, min, max, validation percentage.

Measured but not regulated components must be reported. E.g. data from ambient monitoring or CEMS results (e.g. ozone, meteo data).

Specific emission (e.g. g per kg product) or yearly emissions (actual or prorated) for key components that are relevant for IPPC compliance are to be reported. As key components are considered: NO_x, SO₂, PM₁₀, CO, CO₂, VOC. Typically to be reported: key component in ton/yr and in g/kg product. Prorating can be done by taking the results in a specific year so far (say x months, result y) and estimate the yearly result with $y \cdot 12/x$.

Exceptions

Exceptions on EPR reporting (combining reports, changing frequency, parameters etc.) is permitted only after explicit acceptance by the SEU.

EPR processing by SEU

On reception of an EPR, SEU will register reception, forward a copy to MECA Muscat office and review the content. If so deemed necessary SEU will comment or ask for clarifications. If non-compliances are identified, SEU will consider enforcement as follows: administrative enforcement for non-compliances with this Guidance Note and providing wrong or incomplete data and information and regulatory enforcement for non-compliances with standards for concentrations, quantities, etc.

EPR Submission enforcement schedule that will be used by the SEU is as follows:

- One week exceedance of EPR due date: reminder mail.
- Two weeks exceedance of EPR due date: warning letter.
- Three weeks exceedance of EPR due date: fine as per article (13) and (31) RD114/2001.

Enforcement for non-compliances with standards will be assessed on a case by case basis.

If any circumstances occur that prevents timely submission of the EPR, the company must request suspension of the enforcement and specify the reasons for delay to the SEU before the due date.

3: EPR content overview

- Company is required to select relevant EPR chapters based on relevance. Minimum required: Report summary (compliance situation), Regulatory and Industrial safety (incident registration).
- Explicit statements have to be made concerning compliance and non-normal situations (e.g. 'in reporting period no standards were exceeded, no non-compliance situation were encountered, no accidents/incidents occurred').

EPR Report summary

- The report summary is advised to point to any specific non-compliance situation or special circumstance that is not 'business as usual'. These include spills, leaks, accidents, etc..
- Info: non-compliances, incidents, accidents, etc.
- Example: emergency shutdown by turbine trip, flared 10 tons, startup after 24 hours.

EPR Regulatory

- **All** current permits, licenses, No Objections, waivers and other environmental regulatory documents.
- Info: Type, date of expiration, date renewal request.
- Example: Env. Permit no 12345, expiry date: 1 Aug 2011, renewal request submitted on 1 Jul 2011.
- Changes in technology, equipment or operations that influence environmental performance.

EPR Substances

- Composition and quantity of raw materials that are regulated.
- On-site storage of relevant hazardous chemicals (raw materials, intermediates, products)
- Info: kton used, stored or handled with weight fraction of regulated components.
- Example: anthracite, processed 20 kton, sulphur content 2.5 wt %, ash content 0.1 wt %.

EPR Air emissions

- Emissions to the atmosphere must be reported as (per source).
 - Concentration C_x (mg/Nm³)
 - Mass flow M_x (kg/day, pro rated ton/yr)
 - Specific Mass emission S_x (kg/kg product)
- Sample location, time/period.
- The location of the source, the operational conditions (temp, flow rate, etc) must be included.
- For continuous monitors: parameter vs time graph.
- Companies that generate information from CEMS, need to report all the measured data in a summarized format that includes: average value over reporting period, max/min value, percentage validated values.
- CEMS data: source id, $C_{x,avg}$, $C_{x,min}$, $C_{x,max}$, percentage validated data, graphically C_x vs time.
- Example: Stack 01, boiler, C_{NO_x} , avg: 50 mg/Nm³, min: 25 mg/Nm³, 85% valid data, flowrate: 50.000 Nm³/h.
- Estimates on fugitive emissions for dust (as PM10 and TSP) and VOC based on LDAR. If estimates require calculations, the calculation method has to be reported.

EPR Ambient air quality

- Ambient concentration ($\mu\text{g}/\text{m}^3$).
- For continuous monitors: graphically parameter vs time, $C_{x,avg}$, $C_{x,min}$, $C_{x,max}$.
- Meteo data during reporting period.
- Method of sample collection.

EPR Waste

- Industrial waste generated, stored, recycled, disposed or otherwise managed has to be reported in relation to the Consignment Note, No Objection, Basel Convention and other regulatory frameworks.
- Type of waste, tons on-site storage, tons disposed, tons recycled etc.
- Waste destination (name of disposal company, disposal site).
- Reporting of quantities: solid & sludge waste in ton and liquid waste in m³.
- Waste Quantities for the reporting period and for the whole year as estimate.

EPR Soil

- Contamination details (origin, components, concentrations).
- Sample location, time/period.
- Total amount involved, treatment or disposal details.
- Sampling method (composite sampling details).

EPR Marine water quality

- Concentration C_x (mg/l or $\mu\text{g}/\text{m}^3$) and PQL.
- Sediment C_x (mg/kg).
- Sample location, time/period, sampling details.
- Analytical method

EPR Water discharge

- Regular discharges: Cooling water, brine, process discharges volumes.
- One off discharges like deep excavation water, hydrotesting water etc..
- Concentration C_x (mg/l or $\mu\text{g}/\text{m}^3$) and PQL.
- Sample location, time/period.
- Sampling method (composite sampling details).
- Info: concentrations, standards, compliance test results.

EPR Noise

- Noise levels on site boundary or unit battery limit.
- Used measurement equipment.

EPR Radioactivity

- Identification of the qualified radiation protection officer.
- Any over-exposure incident or near over-exposure incident.
- Any relocation (temporary or permanent) of sources in process equipment (typical level sensors).
- Scrap metal radio active check gate: number of checks and number of pass and non-pass results.
Note: non-pass results require immediate informing the authorities (SEU, Port Authority).
- Calibration details.

EPR Industrial safety

- Incidents/accidents with impact outside the battery limits have to be reported directly as part of the emergency response requirements. The EPR contains an overview of the incidents with estimations of released components (type, quantity) to air, water, soil (including firefighting water if applicable).
- Accident generated products (e.g. waste absorbent, firefighting water).
- Implementation progress of the Safety Management System (SMS).

EPR Climate

- Reporting requirements for Climate Affairs are described in detail in Form No 2 issued by DG Climate Affairs.

4: Identifying and reporting exceedance

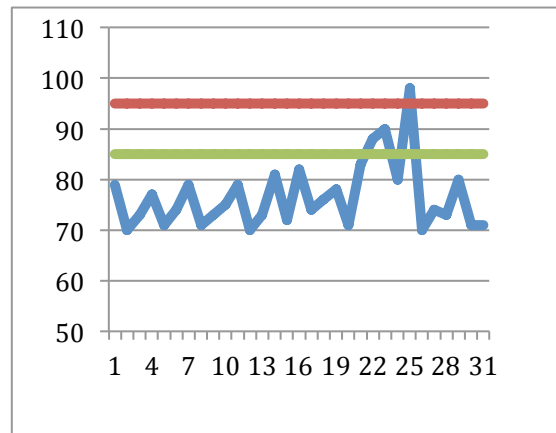
Exceedance of a standard and non-compliance are two different events. There are several mechanisms that cover the difference like a waiver condition, insignificance with respect to environmental risks or an agreement with CA.

An incidental spike that results in standard exceedance will in general not be considered as a non-compliance. Structural exceedance will obviously result in non-compliance.

For continuous monitoring results or other data in time series, the exceedance of a standard can be registered as 'number of exceedance' or as 'time fraction' exceedance. In the example: standard 95 is exceeded 1 time, standard 85 is exceeded 2 times and 10% of the reporting period.

Data averaging must be based on the standard (e.g. yearly average, 24h average, 8 hour average as per USEPA ambient air quality standards).

In the absence of a defined averaging period, a 'good practice' representation is expected.



A non-compliance can be based on Article (10) of RD114/2001 concerning the use of state-of-the-art techniques (Best Available Techniques as per IPPC) and Article (7) of RD114/2001 concerning polluting the environment in general.

In one-off situations (e.g. discharge of hydrotesting water) exceedance of the discharge standard is directly a non-compliance.

Ambient quality parameters (ambient air quality and marine quality) that are not directly attributable to a specific company will not lead to non-compliance but will give a more general concern.

Additional information is provided in the IPPC Reference Document on the General Principles of Monitoring (<http://eippcb.jrc.es/reference/>).

5: EPR data reporting format examples

- Use only significant decimal numbers.
- PQL should be lower than half the standard.
- Sampling methodology and frequency should be reported.
- Include accuracy if available.

Water reporting form example

Sample identification						
Sampling method (single/composite)			Sampling date/time Sampling location			
Component	Unit (mg/l)	Method	PQL (mg/l)	Result (mg/l)	Standard (mg/l)	Remarks
BOD						
COD						
pH						

Air emission reporting form example

Source ID			Upstream process ID			
Source location coordinates or area Stack height (m) Stack tip diameter (m)			Emission temperature (degC) Flowrate (Nm ³ /h)			
Sampling method (monitor, isokinetic, ..)			Sampling location in equipment (e.g. 2 m below stack tip,..) Sampling date/time			
Component	Unit (mg/Nm ³)	Analysis Method	PQL (mg/Nm ³)	Result (mg/Nm ³)	Standard (mg/Nm ³)	Remarks
PM10						
SO ₂						
NO _x						
VOC						

Ambient air reporting form example

Source ID						
Sample location coordinates						
Sampling method (monitor, diffusion tubes,...)			Sampling date/time			
Component	Unit ($\mu\text{g}/\text{Nm}^3$)	Analysis Method	PQL ($\mu\text{g}/\text{Nm}^3$)	Result ($\mu\text{g}/\text{Nm}^3$)	Standard ($\mu\text{g}/\text{Nm}^3$)	Remarks
PM10						
SO ₂						
NO _x						
VOC						

Monitor reporting form example

Source ID						
Sample location coordinates						
Measurement period			Percentage validated data Avg			
Component	Unit (mg/Nm^3)	Method	PQL (mg/Nm^3)	Avg result (mg/Nm^3)	Standard (mg/Nm^3)	Remarks

Industrial waste reporting form example

Waste Name	Actual quantity (ton)	Annual quantity (ton)	Source of waste Generated	Reuse/Recycle or disposal options	CN, REG or NOL number