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Title: **ENVIRONMENTAL ASPECTS AND
MANAGEMENT PLANS
REQUIREMENTS**

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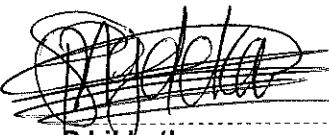


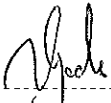
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1. Introduction

This work instruction describes the process to be followed to:

- Identify the environmental aspects of Transmission Division's activities, products and services that it can control and influence, which lead or could lead to environmental impacts, considering a life cycle perspective within the defined EMS scope (240-102590820).
- Address significant environmental aspects, and their associated compliance obligations considering its risks and opportunities
- Control and mitigate environmental impacts through the development of environmental management plans to achieve set objectives
- Manage the identified aspects taking cognisance of changes in the organisation, legislation and technological options and resources availability.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

The purpose of this document is to:

- Standardise the methodology for identifying the environmental aspects of Transmission Division's activities, products and services within the defined EMS scope (240-102590820) that it can control and influence, which lead or could lead to environmental impacts, considering life cycle perspective
- Control and mitigate environmental impacts through the development of environmental management plans to manage the identified aspects taking cognisance of changes in the organisation, legislation and technological options and resources availability

2.1.2 Applicability

This work instruction shall apply to all Transmission Business Units.

2.1.3 Effective date

This document shall be effective from the authorisation date.

2.2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed below.

2.2.1 Normative

- [1] ISO 14015, Environmental Management - Environmental Assessment of Sites and Organisations (EASO)

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- [2] National Environmental Management Act, 107 of 1998
- [3] 240-102590820: Transmission Environmental Management System Manual
- [4] Eskom Intranet legal register
- [5] ISO 14001: 2015. Environmental Management System – Specification with guidance for use
- [6] 240-80605280 : Environmental Legal & other requirements and evaluation of compliance
- [7] 240-76628703: WIRES PLCM
- [8] 32-736: Land and Biodiversity Policy
- [9] 32-815: Biodiversity Standard
- [10] Occupational Health and Safety Act 85 of 1993
- [11] 32-727: Eskom Safety, Health, Environmental and Quality Policy.

2.2.2 Informative

- [12] ISO 9001:2015 Quality Management Systems.

2.3 Definitions

The definitions provided in ISO 14001: 2015, Environmental Management Systems-Specification with guidance for use shall apply

2.3.1 Document:

2.4 Abbreviations

Abbreviation	Explanation
BU	Business Unit
BUER	Business Unit Environmental Representative
EMP	Environmental Management Plans
EIA	Environmental Impact Assessment
EMS	Environnemental Management System
KPI	Key Performance Indicator

2.5 Roles and Responsibilities

- The Business Unit Manager with the assistance of the BUER will be accountable for the implementation of this document.
- The environmental management system representative is responsible for implementing this document

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- BU managers shall be accountable for the development and implementation of the actions to achieve its environmental objectives in their respective areas in line with the set KPI's.
- BU Managers cannot delegate accountability for compliance to the individual contractor and its sub-contractors.
- BU manager must communicate significant environmental aspects within the BU as appropriate.

2.6 Process for Monitoring

Each Business Unit shall conduct and review environmental aspects and action plans at least once per financial year and/or when an emergency relating to that aspect has occurred and/or when there is a new activity in the organisation or any changes to legislation.

The monitoring and audit process shall include measuring and reporting of KPI's, verifying achievements of objectives and actions, non-conformances, compliance obligations, identify performance trend and implement preventative actions .

The results of monitoring should be analysed and used to identify areas of good performance as well as those requiring corrective action.

2.7 Related/Supporting Documents

- TRM-TE-0232: Environmental Aspect and Impact Register Template
- TRM-TE-0233: Transmission Environmental Management Plan Template (Operational)
- TRM-TE-0231: Transmission Environmental, Management Plan Template for Service Providers
- 240-101201031: Transmission Environmental Project Site Handover

3. Document Content

3.1 Aspect Register

The aspect register incorporates environmental aspects of Transmission's activities, products, or services that can or do interact with the environment. The interaction with the environment may be continuous in nature; periodic; or associated only with events, such as emergencies. The effect of the interaction which is termed environmental impact can be any change to the environment, whether adverse or beneficial.

The Business Units and Grids shall compile an aspect register which will have the following categories:

- Activity
- Aspect
- Medium (Water, Air, Land)

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- Control Measure
- Likelihood
- Magnitude
- Compliance obligation
- Stakeholder Interest
- Business Risk/Benefit
- Significance

3.1.1 Identification of environmental aspects

The BU with the assistance of the BUER will determine the environmental aspects associated with the BU activities, products and services that can be controlled and those that can be influenced, taking into account:

- a) Change, including planned or new developments or new and modified activities, products and services
- b) Abnormal conditions and reasonably foreseeable emergency situations.

Each identified aspects will then be linked to applicable compliance obligation.

Aspects identification can be conducted by using the following possible source of information:

- Initial review done by all BU's.
- Risk assessments
- Audits (i.e. internal, self -assessments, peer, external
- Site Inspections
- Incidents, non-conformances and non-compliance to legislation, policy and procedures
- Historical Trends
- Baseline information

3.1.2 Significance ranking

As a minimum all Business Units and Grids, will compile the aspect register and rank the aspects from highest significance to lowest significance in the format illustrated in above (3.1). The aspect register should be updated for activities that can be controlled and those that can be influenced, taking into consideration planned or new developments or new and modified aspects. Any amendments and/or changes should be maintained and significance ranking given in accordance with (Appendix A). All high, medium and low environmental aspects are to be monitored and managed

Note: Significant environmental aspects could result in risks and opportunities associated with the adverse environmental impacts (threats) or opportunities. This will be evaluated and managed in the IRM process (Integrated Risk Management ISO 31000).

3.1.3 Set objectives and plans to achieve them

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The identified aspects with the associated impacts will be managed by setting objectives and actions to achieve them. These objectives and actions should address the identified root cause(s) as identified in the environmental incidents.

The objective and targets shall be:

- a) based on the identified significant environmental aspects and associated compliance obligations, the views of interested and affected parties and taking into account risk and opportunities
- b) consistent with Eskom's SHEQ Policy (32-727);
- c) measurable;
- d) monitored;
- e) communicated / reported; and
- f) updated as and when appropriate

In setting targets the following may be considered: technological options, financial implications, and operational and business requirements

3.2 Environmental Management Plans

Establishing plan of action which ensures that:

- Environmental aspects with significant impacts are identified, minimised, rehabilitated, and mitigation measures are implemented and monitored
- Identified aspects with beneficial environmental impacts (opportunity) will be maximised
- Compliance obligations are fulfilled
- Objectives are measurable to ensure that negative impacts are mitigated and existing impacts rehabilitated
- Roles, responsibilities, resources needed and timeframes to which actions needs to be achieved are clearly defined and allocated.
- Interested parties shall be identified and considered for inclusion in the EMP where applicable.

In an EMP, various mitigation measures are organised into a well formulated plan, which serves as a guide for the responsible person. This should include clearly defined roles and responsibilities, objectives, targets, means and timeframes by which they are to be monitored, reviewed and closed out. Information used to compile an EMP can be sourced from:-

- Incident investigations and past experiences (maintenance records, investigation reports etc.)
- A life cycle assessment (LCA)
- EIA (i.e. Upgrades and changes to plant)
- Routine maintenance inspections and previous audit findings.

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- Environmental due diligence
- Environmental assessment Environmental Management Plan Guideline for Suppliers/Contractors. EMP requirements should be integrated into scope of work as part of tender documents and subsequent contracts including design specifications, procedures and work instructions.

The performance monitoring of the EMP is linked to existing business performance measures and reporting practices i.e. compliance reporting an integral part of Monitoring and Measurement Work instruction 240 - 80662342.

3.2.1 General Requirements of Project EMP(s)

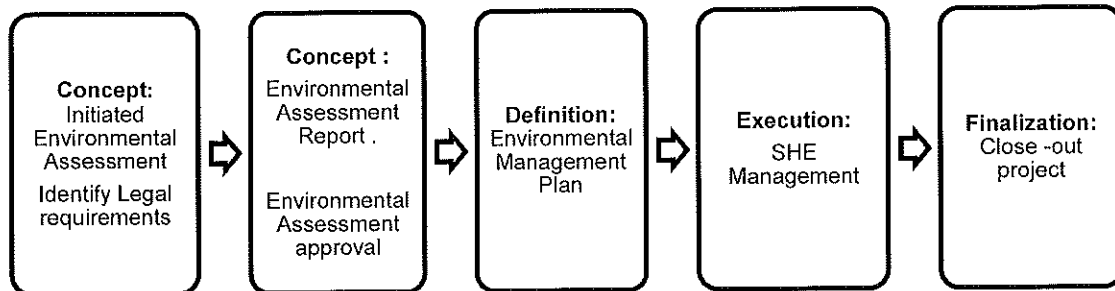
Construction project EMP(S): This EMP is compiled for projects with listed activities as defined by latest EIA regulations. Requirements of this EMP are listed under the latest Environmental Impact Assessment regulations. Transmission BU's shall influence capital projects EMP for BU specific projects. Upon completion of the projects, Project Execution will hand over the EIA report, EMP and other environmental related documents to the Asset owner (Project hand over template). Refurbishment and Maintenance projects EMPs: Internal EMPs that do not trigger any listed activities must be compiled and submitted to the project manager by Environmental Practitioner.

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Project Life Cycle Management (PLCM) Environmental requirements:



For refurbishment, minor expansion and maintenance activities/projects associated with Transmission Business:

- The development and implementation of an EMP for existing Eskom Holdings land (site / servitude) and, or for a proposed project, the EMS procedures should be followed to ensure compliance with applicable environmental legislation and other requirements.
- A detailed description of the aspects of the activity and impacts is covered by the environmental management plan
- Identify persons who will be responsible for the implementation of the EMP where appropriate and time frames must be agreed on.
- The mechanisms for monitoring compliance with the environmental management plan and reporting thereon

A detailed EMP (i.e. specific and generic issues) must be available on site (i.e. EMP for power lines within area and EMP for substation at site). **NB:** As a minimum the EMP template shall include the following categories:

- Activity
- Aspect
- Impact
- Significance
- Objective
- Target
- Planning Actions To Achieve Objectives
- Compliance Obligations
- Due Date
- Responsible Person
- Date Completed

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Table 1: Responsibility Matrix for Operational Environmental Management Plans

EMP Activities	BU Manager	BUER	Departmental Manager	Tx Env. Manager
1.Compilation of EMP	A	R	C	I
2.Approved EMP	A	R	C	I
3.Integrate EMP into Business Operations	A	R	R	I
4.Implement EMP	A	R	R	I
5.Monitor	A	R	R	I
6.Reporting	A	R	R	I
7.Compliance Audit	A	R	R	A
8.Record Keeping	A	R	R	I

4. Acceptance

This document has been seen and accepted by:

Designation
Transmission Group Executive
Transmission Senior General Manager, South African Energy
Transmission General Manager, Grids
Transmission General Manager, System Operator
Transmission General Manager, Grid planning
Transmission Senior Manager, Business Integration and Performance Management
Transmission Senior Manager, Office of the Group Executive
Transmission Senior Manager, Energy Planning and Market Administration
Transmission Senior Manager, Asset Management Execution
Transmission Senior Manager, Work Planning and Centralised Services
Transmission General Manager, Grid Access Unit,

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Designation
Transmission Senior General Manager, Integrated Demand Management
Transmission Business Units BMS representatives
Transmission Safety Manager
Transmission Quality and Document Manager
Transmission Environmental Management Manager

5. Revisions

Note: Start with the latest Revision History in the first row and go backwards.

Date	Rev.	Compiler	Remarks
August 2017	2	P S Likhetha	<ul style="list-style-type: none">Change in the content aligned to ISO 14001:2015.Document changed from procedure to work instruction

6. Development Team

The following people were involved in the development of this document:

- Precious Likhetha
- Lizo Ntila
- Mpumelelo Sithebe
- Phindile Dlamini
- Rabelani Mabogo
- Romi Bhimsan
- Silindile Mbhele
- Tovhowani Tshikomba

7. Acknowledgements

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Appendix A – Significant Assessment Criteria

Significant Assessment Criteria: The environmental impacts associated with an aspect are assessed by considering both the likelihood of an impact and its magnitude. Together they define the environmental impact. Likelihood and magnitude for each aspect are characterised as high, medium and low according to the following definitions and score ratings:			
Criteria	High (3)	Medium (2)	Low (1)
Likelihood: Probability of an environmental impact occurring.	Routine or on-going activity or impacts. Is known to have occurred on routine basis in the past. Impacts associated with the aspects are likely to emerge soon. Impacts are unknown.	Impact that is likely to occur periodically i.e. once or twice a year.	Very infrequent; every several years. Impacts associated with aspect are several years away.
Magnitude: The extent of an environmental impact.	Aspect has a recognised global environmental impact. Widespread or permanent ecological damage locally. Remediation would take longer than one year. Could result in a major public health hazard. Magnitude is unknown.	Aspect could result in a major uncontained or sustained environmental release impacting regional or local environment only. Ecological damage can be remedied within one year. Health hazard to humans in the immediate vicinity, but not resulting in critical or fatal injury/illness.	Little or no ecological effect and no measurable impact on human health
Regulatory Scrutiny: This factor considers the importance and scrutiny of the aspect by the regulators (e.g., past compliance problems; regulated by legislation; level of enforcement); potential for enforcement action/foreseeable legislation. It also includes any voluntary commitments Eskom has made with respect to the aspect.	Very important. Regulated by legislation. High potential for regulatory action or limitations to operate (e.g. Subject to regulatory inspections; past compliance problems). Voluntary commitments or quasi-regulated aspect.	Important. Although regulated but legislation is not stiff.	Relatively unimportant. Little or no potential for regulatory action (e.g., not regulated; not a target of enforcement).

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Criteria	High (3)	Medium (2)	Low (1)
Stakeholder Interest: This factor considers the importance and scrutiny of the aspect by stakeholders including the general public, environmental interest groups (e.g., public perception; past problems; impact on property values); has the potential for litigation; coverage in local/national press.	Very important to public and customers. Aspect has the potential to cause damage to corporate reputation. On-going dialogue has begun; negative perception; possibility for third party lawsuits. Customers expect superior performance by Eskom in managing this aspect.	Important to public and customers. The aspect is likely to cause damage to corporate reputation.	Relatively unimportant; the public is unaware or is aware but is not an issue. No threat to corporate image. Is not an issue with customers.
Business Risk/Benefit: This factor assesses whether the aspect poses significant financial risks or benefits; the importance of early response; whether there are any industrial sector issues and initiatives associated with the aspect.	Aspect poses significant risk. Immediate response necessary. Industrial initiatives underway/developed. May have major impact on competitive position. May have a significant impact on value of Eskom's assets.	Aspect is likely to pose risk.	Aspect does not pose significant risk. No need for immediate response. No industry initiatives associated with aspect. Does not threaten competitive position. Does not affect values of Eskom's assets.

Determining Significant Environmental Aspects

The equation for calculating significant environmental aspects score is:

$$(\text{likelihood} \times \text{magnitude}) + (\text{regulatory scrutiny} + \text{stakeholder interest} + \text{business risk/benefit})$$

The mitigation of environmental aspects with **significant environmental aspects score equal or greater than 13** is to be prioritised.

Significance	Rating
No impact	0
Low	1-5
Medium	7-12
High	

ISO 14001:2015 does not explicitly require business relevance to be addressed in identifying significant environmental aspects. However, in order to address and enhance the emerging linkages between environmental and business performance, it has been built into this work instruction. Three factors have been identified as important areas to consider in the work instruction. Each factor is scored as 1, 2, or 3. For each category, the extreme scenarios (1 and 3) are described; the 2 rating is left to the judgement of the assessor.

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Appendix B: Transmission Aspects for core activities

Activities	Environmental Aspect	Activities	Environmental Aspect
Operation of Transmission infrastructure e.g. Lines and substations	Causing fire i.e. failure to maintain firebreaks Bird mortalities (red data species)	Operation and Maintenance of oil containing equipment e.g. defective equipment's (transformers, breaker, CVTs, CTs, VTs) and oil containment areas e.g. oil dams	Oil spillage Oil sludge
Hazardous waste handling and disposal i.e. PCB contaminated material, fluorescent tubes, used oil, oil rags, dismantling of asbestos containing infrastructure	PCB contaminated material Fluorescent tubes Asbestos containing material	Maintenance of the transmission servitude i.e. bush clearing, application of herbicide	Incorrect application of herbicide Cutting of protected trees
Management of SF ₆ equipment and plant, old air-conditioning units which contain CFC	SF ₆ gas release Contaminated SF ₆ cylinders CFC	Management of hazardous chemicals i.e. transportation, handling, storage and disposal of hazardous chemicals, maintenance of battery room	Hazardous chemical spillage e.g. battery acid, herbicides, Acid spill, storage and disposal of redundant batteries
Execution of refurbishment and maintenance projects i.e. delivery, storage and handling of construction site materials using heavy vehicles, ablation facilities,	Archaeological and heritage sites Sewerage disposal Soil erosion	Performing office activities i.e. printing, water usage, electricity usage,	Water consumption i.e. burst or leaking water pipes, taps and toilet cistern Electricity consumption Paper usage
Maintenance or refurbishment of infrastructure in or close proximity to sensitive area e.g. water courses (i.e. river, dam, wetland, dams), protected areas	Soil erosion Water diversion	Management of scrap materials	Storage and disposal of scrap materials

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