



MONITORING, CONTROL AND ERADICATION PLAN FOR INVASIVE SPECIES ON ESKOM LAND

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1. EXECUTIVE SUMMARY

Eskom as a “landowner” and “organ of state” is required by NEMBA, Alien Invasive Regulations, 2014 to have a Control Plan to control, eradicate and monitor invasive species on Eskom land.

Based on the extent of land (both linear assets and sites), contractual and management complexities of such land, Eskom submits an Invasive Species Organisational-Level Control Plan outlining land under Eskom management, the status quo of management of alien invasive species (AIS) and the organisational approach to implement the AIS Regulations, 2014.

This Invasive Species Organisational-Level Control Plan will further unpack how Eskom land will be prioritised for the execution of the implementation plan and the approach to align prioritised Eskom land parcels to the specifications of the Guidelines for Monitoring, Control and Eradication Plans for Invasive Species.

The scope of this Plan is focused on the control and monitoring of invasive terrestrial plants and mammal species. This scope is based on Eskom’s key operational risks and both organisational and national strategic biodiversity goals.

This Invasive Species Organisational-Level Control Plan is further a key implementation tool of the Eskom Environmental Management Strategy and Eskom Biodiversity Implementation Plan to assure Eskom achieves a reduction of its environmental footprint that leads to improving Eskom’s environmental reputation and maintaining its licence to operate.

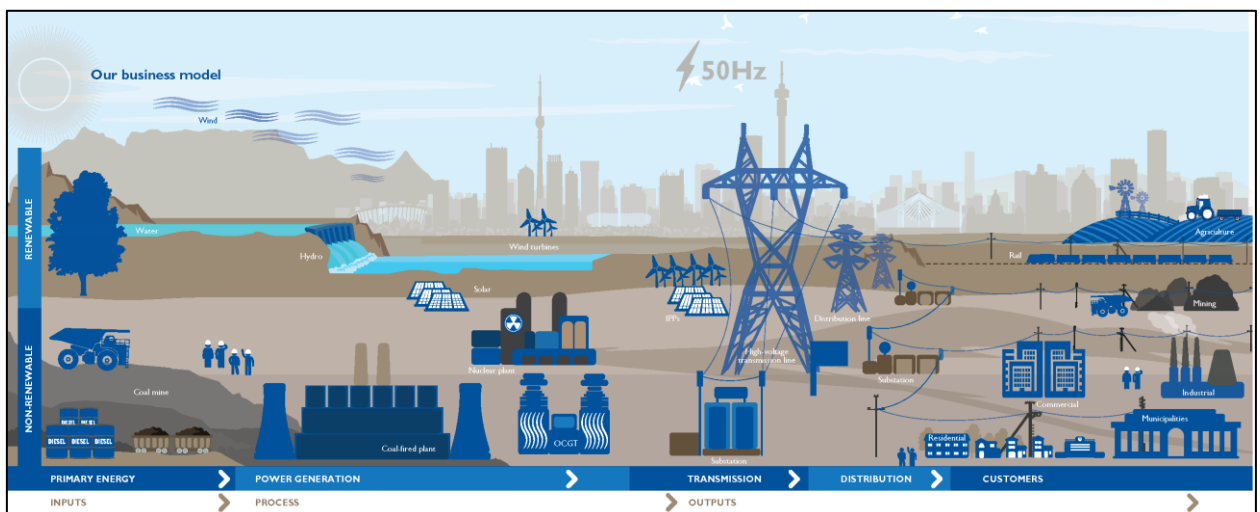
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2. INTRODUCTION

Management Authorities of all Protected Areas and Organs of State (e.g. municipalities and parastatals) are obliged, in terms of the National Environmental Management: Biodiversity Act (Act 10 of 2004) and the Alien and Invasive Species Regulations, 2014) to compile and submit an “Invasive Species Monitoring, Control and Eradication Plan” for land under their control. [Hereafter termed an Invasive Species Organisational-Level Control Plan].

Eskom Holdings SOC Ltd is South Africa’s primary electricity supplier and is a state-owned company (SOC) as defined in the Companies Act, 2008, generating approximately 90% of the electricity used in South Africa, and approximately 40% of the electricity used on the African continent. Eskom generates, transmits and distributes electricity to industrial, mining, commercial, agricultural and residential customers and redistributors.



Eskom’s Business Model (Eskom Integrated Report, 2016)

Eskom operates 28 power stations, comprising of coal-fired stations, nuclear power, gas-fired, hydro and pumped storage stations and renewable energy (Sere Wind Farm). Eskom maintains approximately 377 287km of power lines connected through thousands of substations. Additional power stations and major power lines are being built to meet rising electricity demand in South Africa.

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Based on the Eskom business model, land within which Eskom operates is multifaceted. Eskom has either total land ownership for all power stations, substations, administrative property, future asset expansion; or land is leased for linear servitudes for Transmission power lines and rights of way over private owner's land for Distribution power lines. Section 4 provides a detailed breakdown of land parcels under Eskom management.

The various business activities undertaken on these land parcels determine the key vulnerabilities (e.g. water, fire, loss of biodiversity) and the risks of invasions of alien invasive species. However, alien invasive species management is not new to Eskom. Eskom has a history of controlling invader plants and weeds through vegetation clearing for site and servitude management.

Eskom's long-standing minimum standards and objectives for vegetation clearing and maintenance of all Eskom land within which we operate are in accordance with four key aspects namely:

- Where the vegetation poses a safety clearance risk,
- When access to the Eskom land is hindered,
- When the vegetation poses a fire risk,
- To comply with legislative requirements (OHSA and CARA)

Based on the extent of land (both linear servitudes and sites) and the associated contractual and management complexities of such land, Eskom submits an Invasive Species Organisational-Level Control Plan outlining land under Eskom management, the status quo of management of alien invasive species (AIS) and the organisational approach to implement the AIS Regulations, 2014. This Invasive Species Organisational-Level Control Plan will unpack the approach to align prioritised Eskom land parcels to the specifications of the Guidelines for Monitoring, Control and Eradication Plans for Invasive Species.

The general objectives of this Plan are:

- To establish long-term site specific programmes (including resources and funding) for the control and/or eradication of invasive species in alignment with Eskom's key land management risks.
- To enhance biodiversity protection and conservation to support national initiatives.
- To ensure conservation of species and ecological processes by maintaining and improving ecosystem functioning.

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This Invasive Species Organisational-Level Control Plan is further a key implementation tool of the Eskom Environmental Management Strategy and Eskom Biodiversity Implementation Plan to assure Eskom achieves a reduction of its environmental footprint that leads to improving Eskom's environmental reputation and maintaining its licence to operate.

3. DEFINITIONS AND ABBREVIATIONS

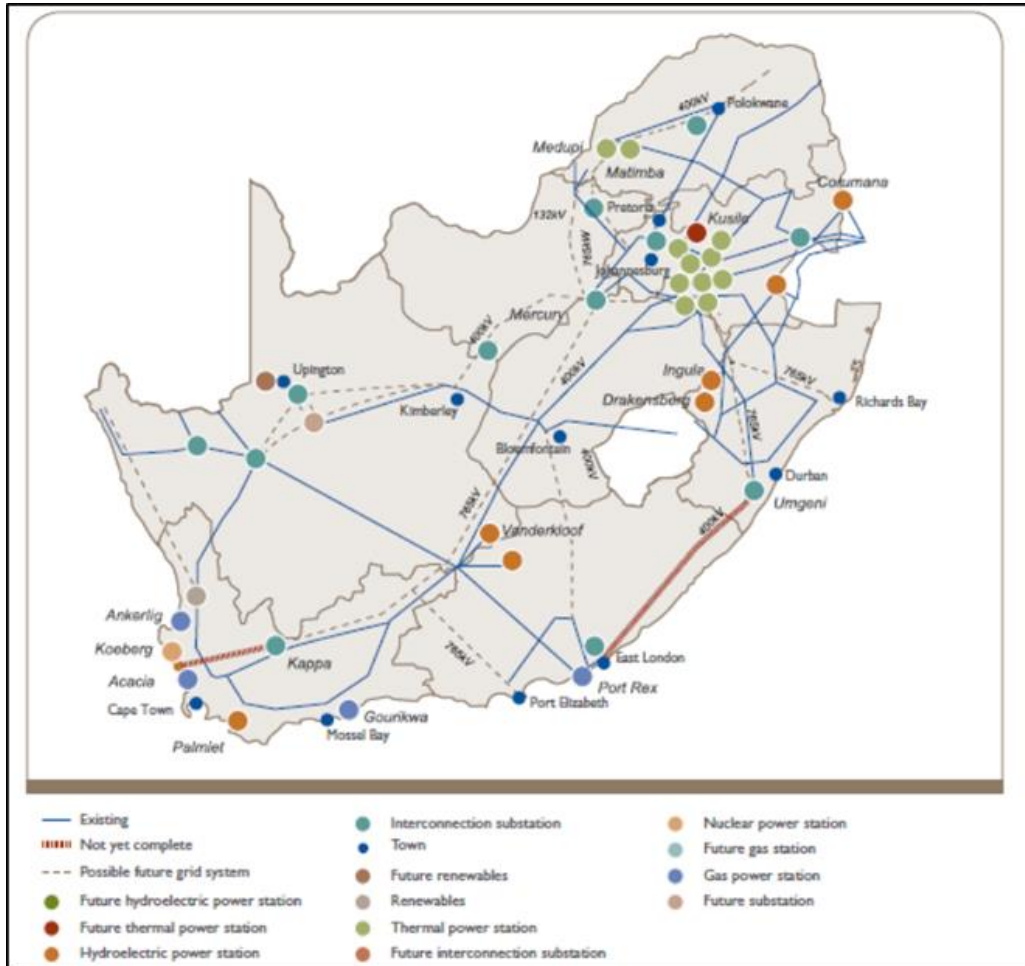
DEFINITIONS	
Alien species	a) a species that is not an indigenous species; or b) an indigenous species translocated or intended to be translocated to a place outside its natural distribution range in nature, but not an indigenous species that has extended its natural distribution range by natural means of migration or dispersal without human intervention.
Eskom land	Any land and/or servitude and/or any real right registered in the Deeds Office in Eskom's name or favour. It also includes rights of way granted to Eskom.
Game	Wild animals or birds located within an area for recreational purposes.
Invasive species	Any species whose establishment and spread outside of its natural distribution range – a) threaten ecosystems, habitats or other species or have demonstrable potential to threaten ecosystems, habitats or other species b) may result in economic or environmental harm or harm to human health
Responsible Division/Department	Refers to the Eskom Business Unit (BU) or function accountable for the Eskom land, at the time, and its associated infrastructure (for example a power station, administrative property, servitudes).
Servitude	A servitude is a real right (i.e. registered in the Deeds Office against the title deed of an erf), the content of which is to allow limited access to an erf for a specific purpose. It does not entail ownership and must be exercised in a reasonable way, within the boundaries of the specific purpose. In this document, the reference is specifically to servitudes which allow Eskom to build, operate and maintain infrastructure for the generation and conveyance of electricity, and ancillary purposes.

ABBREVIATIONS	
AIS	Alien Invasive Species
CARA	Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)
DEA	Department of Environmental Affairs
NEMBA	The National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)
NEMPAA	The National Environmental Management: Protected Areas Act, 2003 (Act 59 of 2003)
OHSA	Occupational Health and Safety Act, 1993 (Act 85 of 1993)
SOC	State owned company

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4. MANAGEMENT UNITS OF ESKOM



Extent of Eskom operations nationally as at 31st March 2016 (Eskom Integrated Report 2016)

Eskom has a national land footprint as dictated by the magnitude of our operations in South Africa. Therefore for the purposes of this Organisational-Level Control Plan, the various Eskom land parcels are divided into 2 main categories namely “sites” and linear servitudes”. These categories are further broken down into logical management units that align to the Eskom organisational structure. This allows for concurrent and effective implementation throughout the responsible divisions.

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LINEAR ASSETS		
Eskom Management Units		RESPONSIBLE DIVISION/DEPARTMENT
Existing asset: Servitudes & Land for Substations & power lines	Power line network and substations	Transmission and Distribution (operations)
Vacant land & servitudes for future asset expansion or surrounding existing asset	For planned future substations, power lines and related infrastructure	Transmission and Distribution (Land and Rights)
Vacant Land: Distribution and Transmission non-operational land	Vacant Sites for possible future operational plant or large parcels of vacant land adjacent to existing operational plant footprints	Group Capital: Eskom Real Estate Land Management

SITES		
Eskom Management Units/Sites		RESPONSIBLE DIVISION/DEPARTMENT
Base Power Station operational plant footprints	Coal operational plant footprint	Generation
	Nuclear operational plant footprint	
Peaking Power stations operational plant footprints	Hydroelectric	
	Pumped Storage	
	OCGT	
Renewables operational plant footprints	Sere Wind Farm	
	Solar	
Generation Residential property		
Vacant Land: Generation non-operational plant footprints land handed over to Eskom Real Estate for management	<p>Agricultural Land: Vacant sites for future operational plant or vacant land adjacent to existing operational plant footprints.</p> <p>Conservation Sites: Bantamsklip Koeberg Thyspunt Medupi Grootvallei</p>	Group Capital: Eskom Real Estate Land Management
Telecommunication Infrastructure	Radio sites	Transmission: Telecomms
Eskom Real Estate Commercial & Residential Sites	Administrative sites including Eskom Academy of Learning, Megawatt Park, Witbank Training Centre, Customer Network Centres	Group Capital: Eskom Real Estate, Operations
Administrative Site	Rosherville	Eskom Rotek Industries
New Build Plant	Construction Plant footprints for Medupi, Kusile & Ingula	Group Capital: Eskom Real Estate, Projects
New Build Facilities	Property facilities for new build program	Group Capital: Eskom Real Estate, Projects
Operational mining or mining rehabilitation footprints where Eskom has an agreement to rehabilitate the land		Primary Energy Division
Vacant Land: Primary Energy non-operational mining footprints handed over to ERE for management	Vacant land for future mining footprints	Group Capital: Eskom Real Estate, Land Management

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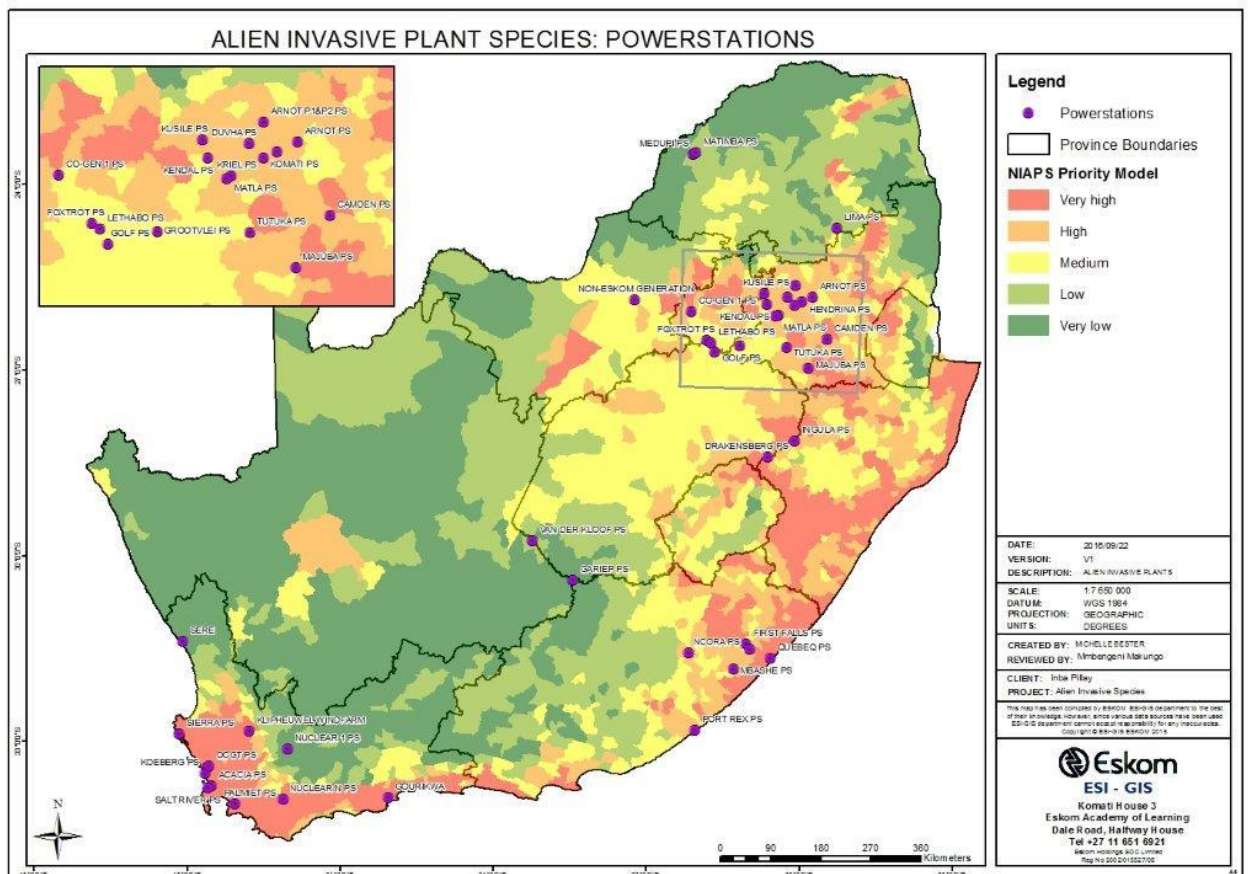
Each of these management units will individually map their areas under their direct management control to formulate their site specific control plans.

5. LISTED INVASIVE SPECIES IN EACH MANAGEMENT UNIT COMPARTMENT

Based on Eskom’s key operational risks and both organisational and national strategic biodiversity goals, Eskom is firstly focussing on the control and monitoring of invasive terrestrial plants and mammal species.

Eskom have completed an exercise to overlay the Utilities operations with the National Invasive Alien Plant Survey (ARC, 2010) spatial data. Overall there is a high percentage of Eskom’s land parcels falling within the “very high” and “high” priority categories.

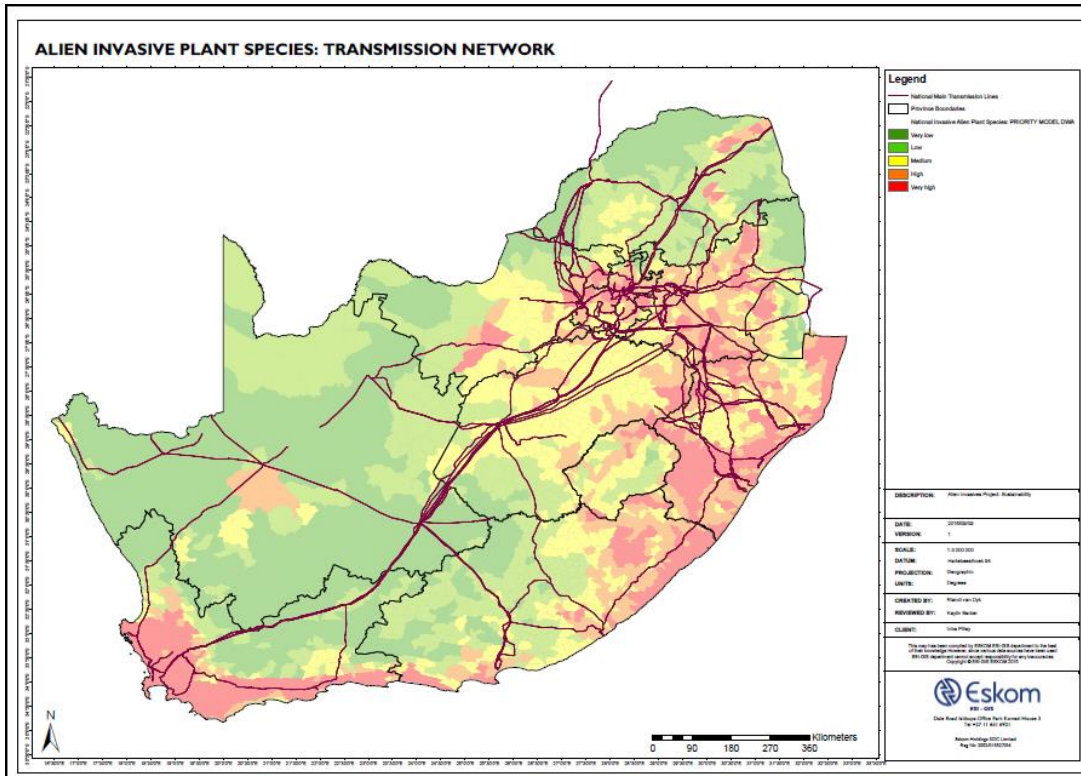
Map 1 – Eskom Power stations



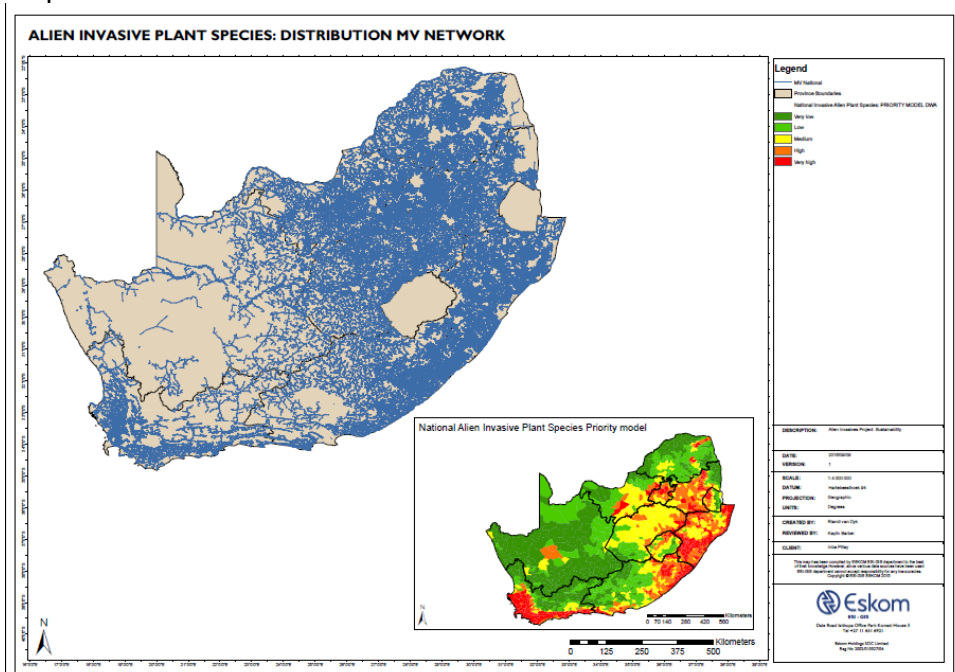
Map 2 – Eskom Transmission Network

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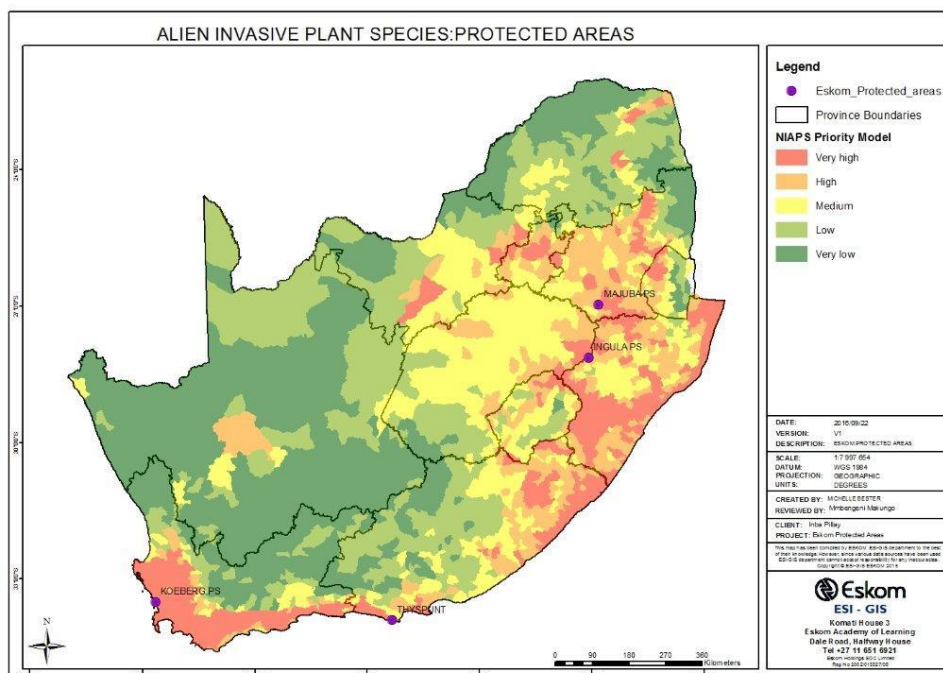
Map 3 – Eskom Distribution Networks



Map 4 – Eskom Protected Areas

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The status of Invasive species within Eskom’s management units

An exercise was completed to determine the site specific status quo of invasive species. Management units were requested to complete a questionnaire based on the specifications of the Guidelines for Monitoring, Control and Eradication Plans for Invasive Species (Annexure A).

The questionnaire includes:

- Status of AIS
- Prioritisation of control areas within each management unit
- Previous and current control measures
- Timelines for the implementation of a site specific control plan

The analysis and feedback from this exercise provides the baseline for various sections of this Organisational-Level Control Plan.

Eskom Protected Areas or areas with high conservation value

Eskom management units that are categorised as protected areas under NEMPAA include:

- The Koeberg Private Nature Reserve which proclaimed in 1991 in terms of the Cape Provincial Nature and Environmental Conservation Ordinance 19 of 1974.
- The Majuba Nature Reserve was proclaimed in 1995 under the Mpumalanga Provincial Ordinance. A draft Nature Reserve Management Plan is in place.

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Ingula power station is currently in the process to be proclaimed as a protected area. Thyspunt and Batamsklip, Eskom land parcels for the future expansion of the nuclear plan, are registered natural heritage sites and identified within ecologically sensitive locations. The site specific Control Plans for these land parcels are attached as Annexure B.

The status of Invasive animal species on Eskom Management Units

The management of animals predominantly at power stations is based on the following categories:

- a. Historic and recent introduction of animals for aesthetic purposes
- b. Wildlife occurring naturally on Eskom land
- c. Control of Alien and/or Invasive species

In accordance with Eskom’s Wildlife Interaction and Management Standard, game management plans are being compiled for all applicable sites as per the table below. This tool also serves to identify any compliance requirements to provincial legislation and permit specifications to keep and maintain animals on Eskom land and will enable sites to co-currently manage invasive animal species.

Power station	Valid Permit Held (Yes/No)	Game Management Plan completed (Yes/No)	
Arnot	No	No	
Duvha	No	No	
Hendrina	No	No	
Kendal	Yes	No	
Kriel	No	No	
Lethabo	No	No	
Matimba	No	No	
Matla	Yes	No	
Tutuka	Yes	Yes	
Grootvlei	No	No	
Komati	No	No	
Camden	No	No	
Koeberg	Yes	Yes	
Majuba	Yes	Yes	
Peaking	No	No	
			Total: 33% Complete

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6. DESCRIBING THE PRIORITIZATION OF THE LAND PARCELS IN ESKOM

Spatial analysis was undertaken to aid the prioritisation of invasive plant species control and monitoring. Maps illustrating the location of Eskom's management units and linear servitudes (Section 5) in relation to the "Very high" and "High" priority categories of the National Invasive Alien Plant Survey (ARC, 2010), show that a high percentage of Eskom land parcels fall within these 2 categories.

In alignment with national invasive species priorities and related legislative requirements the following Eskom land parcels will be prioritised:

- Eskom sites proclaimed as Protected Areas and sites falling within national areas of high biodiversity importance
- Sites and servitudes identified spatially with Category 1 a & b invasive species
- Sites and servitudes within NEMPAA proclaimed protected areas and nature reserves

The above organisational prioritisation will enable Eskom to practically and cost effectively implement the AIS Regulations, 2014.

Eskom management units will use the National Invasive Alien Plant Survey, 2010 spatial data, any existing and/or new vegetation assessments to further identify and prioritise implementation of their site specific control plans. Prioritisation of control areas within these sites will also be determined by factors including areas of high biodiversity sensitivity/value, water security, risk of wild fires, siltation, flooding, erosion and business operational risks.

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7. REPORTING ON THE EFFICACY OF PREVIOUS CONTROL OR ERADICATION MEASURES

Eskom has historically always controlled vegetation under powerlines and within our sites in compliance to the OHSA. Invader weeds and invasive plants were controlled as per CARA specifications. Detailed records of clearing were however not kept for all management units across the organisation.

The more recent strategy adopted by Eskom to maintain vegetation on servitudes was to follow a biome related specification. Indicator species per biome was identified to determine the average growth per annum and hence the frequency of the maintenance cycle. A specification, including controlling declared weeds and invader plants as promulgated in terms of legislation was also developed by Eskom for each of the biomes.

The approach to be followed by Eskom to holistically eradicate and control invasive plant species listed in the Alien Invasive Species Lists, 2016 will be to expand Eskom's specification to control these species for the total width of the servitude as compared to historically only focusing on the area under the power lines. With Eskom's footprint of servitudes being in excess of 300 000 km, pre-identification on site of declared weeds and invasive plants is economically unfeasible. Eskom will therefore control these invasive plant species as part of its normal maintenance cycles leading to a gradual control of these species on its full servitude footprint.

Power line Corridors Vegetation Clearance Widths

The following specification is being used by Eskom to determine the area of control of vegetation within servitudes. Note the requirement that all declared weeds and listed invasive plants to be controlled is integrated into the specification.

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Nominal voltage	Servitude/Way leave width	Maximum Vegetation Clearance
11 - 66kV	8 m	4 m on either side of the centre line will be cleared. Any tree outside the corridor capable of growing (canopy radius \geq 4 m) into or fall onto (height \geq 6 m) the trees will be cut.
88 kV	10 m	5 m on either side of the centre line will be cleared. Any tree outside the corridor capable of growing (canopy radius \geq 5 m) into or fall onto (height \geq 7 m) the power line will be cut. Eradication of declared weeds and invaders in the corridor and the full servitude width where there is continuous growth from the corridor to the boundaries of the servitude.
132 kV	16 m	8 m on either side of the centre line will be cleared. Any tree outside the corridor capable of growing (canopy radius \geq 8 m) into or fall onto (height \geq 10 m) the power line will be cut. Eradication of declared weeds and invader plants in the corridor and the full servitude width where there is continuous growth from the corridor to the boundaries of the servitude.
220 - 275 kV	36 m	18 m on either side of the centre line will be cleared. Any tree outside the corridor capable of growing (canopy radius \geq 18 m) into or fall onto (height \geq 19 m) the power line will be cut. Eradication of declared weeds and invader plants in the corridor and the full servitude width where there is continuous growth from the corridor to the boundaries of the servitude.
400 kV	42 m	21 m on either side of the centre line will be cleared. Any tree outside the corridor capable of growing (canopy radius \geq 21 m) into or fall onto (height \geq 22 m) the power line will be cut. Eradication of declared weeds and invader plants in the corridor and the full servitude width where there is continuous growth from the corridor to the boundaries of the servitude.
533 kV DC	16 m	8 m on either side of the centre line will be cleared. Any tree outside the corridor capable of growing (canopy radius \geq 8 m) into or fall onto (height \geq 17 m) the power line will be cut. Eradication of declared weeds and invader plants in the corridor and the full servitude width where there is continuous growth from the corridor to the boundaries of the servitude.
765 kV	60 m	30 m on either side of the centre line will be cleared. Any tree outside the corridor capable of growing (canopy radius \geq 30 m) into or fall onto (height \geq 31 m) the power line will be cut. Eradication of declared weeds and invader plants in the corridor and the full servitude width where there is continuous growth from the corridor to the boundaries of the servitude.

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The control of AIS for new powerlines and sites are addressed by the recommendations and control measures identified by specialist studies in the Environmental Impact Assessment. Should there be no legislative requirement to undertake an Environmental Impact Assessment for a power line; Eskom's internal environmental screening includes the completion of the Distribution Environmental Screening Document which flags environmental risks. There is opportunity in this process to include the spatial identification of invasive plant species and raise priority within the maintenance cycle.

Subsequent to the construction of a Transmission powerline or substation, Eskom generally has a botanist/ecologist undertake a walkthrough of the site. Any further findings by the botanist/ecologist are documented into a management plan or method statement for alien invasive plants.

Sites

The control of invasive plants at sites has historically been undertaken during landscaping and maintenance of the site. Site specific Environmental Management Plans included the management of alien invasive plants. Control measures included manual, mechanical or chemical (use of pesticides and herbicides) methods. Invasive plants were further addressed in the preparation and maintenance of firebreaks, maintenance of security fences and rehabilitation of sites.

Based on the organisational risk of Eskom's supply of electricity, the focus historically has been on wildlife and powerline interactions by the Eskom/Endangered Wildlife Trust (EWT) partnership. Going forward with the overall goal to protect, sustain, and manage wildlife and wildlife habitat on Eskom land, whilst still providing a safe working environment for all employees, the compilation of site specific game management plans has been initiated.

8. TARGETS AND TIMELINES FOR THE CONTROL PLAN

Alien invasive species have been identified as a major threat to biodiversity and ecosystem services and can pose a threat to food security, human health and economic development (Aichi 2011-2020 Target 9). As such international and national-level targets have been set:

- Aichi Biodiversity Target and 2020 Implementation Framework

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- Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use.
 - Target 9: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated and measures are in place to manage pathways to prevent their introduction and establishment.

South Africa is a signatory to the Convention on Biological Diversity (CBD) and subsequently a contributor to the implementation of the Aichi Biodiversity Targets. In alignment with the Aichi Biodiversity Targets and Global Strategy for Plant Conservation (GSPC), South Africa’s Strategy for Plant Conservation Target 10 outcomes for 2020 is “Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded”.

Eskom’s organisational target for the management of alien invasive species is provided through a set of key performance indicators (KPI). The following targets have been defined in the Eskom Biodiversity Implementation Plan for financial years 2016 – 2021:

Key Performance Area	Key Performance Indicators	Target 2016/7	Target 2017/8	Target 2018/9	Target 2019/20	Target 2020/21
Alien Invasive Species Implementation plan	Compilation, submission and implementation of Eskom Control Plan	Eskom Control Plan submission to DEA	Completed Control Plans for all legislated protected areas and other conservation sites	5% reduction of AIS (Terrestrial Plants & Animals) on Eskom land	10% reduction of AIS (Terrestrial Plants & Animals) on Eskom land	15% reduction of AIS (Terrestrial Plants & Animals) on Eskom land

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Targets and timelines are further provided for Eskom's priority land parcels and across all Eskom's business units.

Targets and Timelines for Eskom's prioritized land		
Priority Area	Specific goals	Timelines
Eskom sites proclaimed as Protected Areas and sites falling within national areas of high biodiversity importance	Compilation and implementation of site specific control plan	2018
Sites and servitudes identified spatially with Category 1 a & b invasive terrestrial plant and animal species	Compilation and implementation of site specific control plan Servitudes: OU/Grid identification and escalation in maintenance schedule	2019
Sites and servitudes within NEMPAA proclaimed protected areas and nature reserves	Compilation and implementation of site specific control plan Servitudes: OU/Grid identification and escalation in maintenance schedule	2018

Targets and Timelines for all Eskom land			
Management Units	Specific goals	Timelines	Responsible Division
All Power Station operational plant footprints	Compilation and implementation of control plan	2018	Generation
Renewables operational plant footprints			Transmission: Telecomms
Generation Residential property			
Telecommunication Infrastructure			
Eskom Real Estate Commercial & Residential Sites			Group Capital: Eskom Real Estate, Operations
Vacant Land: Generation non-operational plant footprints land handed over to Eskom Real Estate for management	Compilation and implementation of control plan	2019	Group Capital: Eskom Real Estate Land Management
Administrative Site (Rosherville)	Compilation and implementation of control plan	2017	Eskom Industries Rotek
Operational mining or mining rehabilitation footprints where Eskom has an agreement to	Compilation and implementation of control plan	2017	Primary Division Energy

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rehabilitate the land			
Vacant Land: Primary Energy non-operational mining footprints handed over to ERE for management	Compilation and implementation of control plan	2019	Group Capital: Eskom Real Estate, Land Management

A detailed breakdown of the targets and timelines of the various management units within each business units is attached as Annexure A.

The objectives of the control plans will be reviewed annually pending factors such as the possible introduction of new invasive species; success of control methods, the modification of the problems posed by invasive species through a wild fire, or through flooding that impacts on riparian areas; climate change influences, and other variables and feedback from the evaluation of the plan.

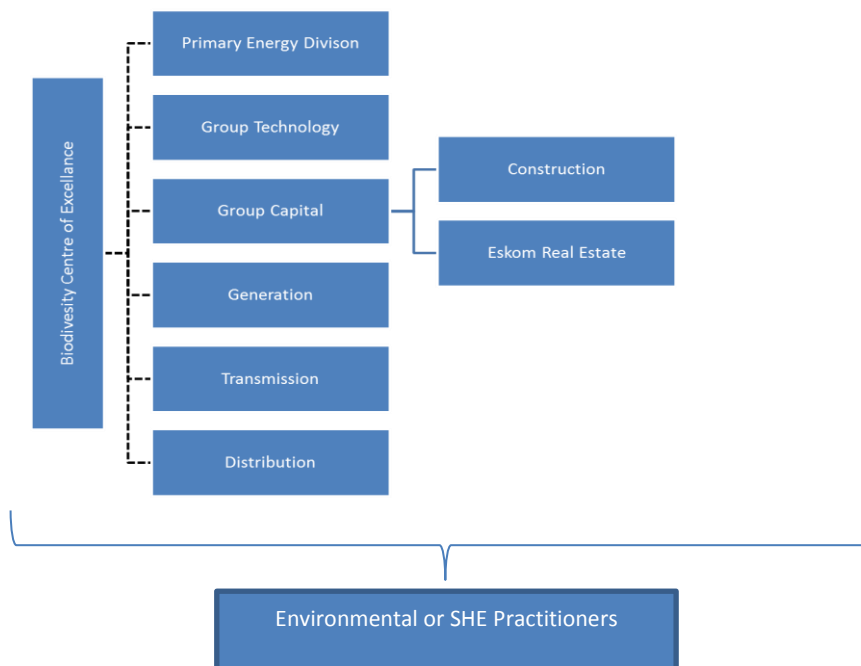
9. RESPONSIBILITIES AND REPORTING REQUIREMENTS OF THE CONTROL PLAN

The Eskom organisational structure currently embraces a centre led approach. The Biodiversity Centre of Excellence within the Environmental Management Department, Sustainability Division is mandated to shape, service, and safeguard the organisation in terms of biodiversity management at national level and will be the driver of this organisational plan.

All Eskom business units have dedicated environmental practitioners who report directly into their respective business unit structures. Eskom environmental or SHEQ practitioners will be responsible for the execution and reporting of the site specific control plans based on their independent resource capacity and budget allocation.

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Organisational support for the overall implementation of this Plan will be via Eskom's highest governance body, the Environmental Steering Committee, whose mandate is to provide assistance to the Eskom environmental manager in developing and managing the implementation of the Eskom environmental strategy across the organisation. The committee constitutes representatives from all business units across Eskom and thus will be the platform for reporting implementation progress, quarterly initially and progressing to an annual frequency.

Eskom's Vegetation Management Care Group will focus on the invasive plant species component of this plan for linear assets. This group provides a platform to direct Eskom on corporate governance, interpretation of statutory and regulatory requirements and specification for vegetation management and maintenance within Eskom land, servitudes and rights of way and ensure vegetation management practises within Eskom land is undertaken in a manner to ensure the safe mechanical and/or electrical operation of infrastructure to meet Eskom's legal, business, social and environmental obligations. Currently this group focuses on linear assets and some Eskom land however the future opportunity of this group to include representatives from all business units across Eskom needs to still be explored.

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The invasive mammal component of the plan will be addressed through site specific game management plans compiled by the Eskom. Quarterly or Bi-annual updates of the implementation of these plans will be provided by the Biodiversity Centre of Excellence.

The AIS Regulations, 2014 specifies that all control plans need to be revised and submitted to Department of Environmental Affairs every five years. As such the Eskom Organisational AIS Control plan will be a 5 year rolling plan reviewed annually by the Biodiversity Centre of Excellence. This plan will be the first in a series of five-year iterations where the success and challenges of the preceding five years will be measured, and adaptations made to ensure that the plan for the following five years is appropriate for the circumstances at the time.

10. THE METHODS TO BE EMPLOYED IN THE CONTROL PLAN

A range of different management practises and control methods will be strategically combined to address AIS on Eskom land.

Sites

With Eskom's sites being located in such diverse environments, control methods for invasive plant species will vary. However the ultimate goal is the effective control of invasive plants in a cost-effective and responsible manner.

Overarching controls methods across the organisation will include:

- manual/labour-intensive clearing
- chemical control with the application of herbicides
- biological control (if researched and feasible),
- fire / block burning,
- suppression by indigenous or other vegetation,
- mechanical control with the use of various tools and heavy machinery.

Site specific control plans, based on the available resources and finances, will specify the most appropriate control methodology.

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The control or eradication of invasive animals on Eskom land will be managed through site specific game management plans. The presence or absence of invasive animal species will be observed through manual observations and counts where such species are present. This analysis will form the basis of a game management plan for that management unit.

Control methodologies could include the removal of invasive species through relocation or culling. The game management plans will be submitted for approval to the provincial authorities, who will ultimately dictate the control methods based on provincial legislative requirements.

Linear Assets

Vegetation management under power lines in Eskom is performed as part of the asset maintenance cycle of the power lines. Power lines are not fenced off areas where vegetation can be sterilized. That would lead to adverse environmental effects like soil erosion and chemical run-off. Eskom's vegetation management strategy and supporting various control practises for powerline servitudes is based on South Africa's 11 Biomes and bio-regions. Aspects such as the type, diversity and quantity of vegetation, burning regimes, the soils, hydrology, rainfall, the impact on wildlife and land use practices influence the vegetation management for a particular stretch of power line.

Methods that are employed in the vegetation maintenance cycles in our servitudes include:

Cycle 1: Mechanical harvesting and removal of trees and brushes

This method of vegetation control is currently the preferred and only vegetation elimination technique applied by most Distribution Operating Units and Transmission Grids. It entails the mechanical felling or cutting of various vegetation types using chain saws, brush cutters. This phase is immediately followed with stump treatment, either chemically or mechanically to prevent the cut tree or brush to sprout and grow again.

Cycle 2: Follow-up Maintenance

Cycle 2 entails follow up treatment of any regrowth with herbicides.

A detailed specification on how vegetation is controlled within each of the biomes as well as the maintenance frequency which was derived from indicator species per biome for various power line voltages and applicable servitudes is provided in Annexure C. All declared weeds and invader plants falling within each of the biomes shall be cut and treated for the total width of the servitude and with herbicides during subsequent maintenance cycles.

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Guidance with respect to best and up-to-date control methods for terrestrial plant species will also in future be sought through the DEA Working for Water Programme.

11. MONITORING AND EVALUATION OF THE CONTROL PLAN

Several business units within Eskom and its subsidiaries have achieved ISO14001 certification. Generation, Group Capital: Construction Management, Transmission, Telecommunication, Eskom Rotek Industries, Sustainability Systems Department, Climate Change and Sustainable Development and Eskom Real Estate have certified Environmental Management Systems. Achieving certification provides the foundation for sound environmental management practises. Alien invasive species management will be monitored and evaluated as a key aspect and legal requirement in the Environmental Management System.

This organisational control plan will be reviewed annually by the Biodiversity Centre of Excellence within the Environmental Management Department, Sustainability Division. Site specific control plans will also be reviewed annually by the directly responsible business unit.

The objectives of the annual review of the organisational and site specific control plans are to:

- Review how effectively the control plan has been implemented.
- Identify the next milestones for defined management units and setting of appropriate time frames and budgets.
- Enable effective adaptive management by identifying changes, challenges and modifying management interventions.

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12. LIST OF ANNEXES

Annexure A – Eskom’s Management Units Status Quo of AIS

Annexure B – Site specific control plans for Eskom land under conservation status

- Ingula
- Koeberg – Chapter 5 of the Nature Reserve Management Plan focusing on Invasive Species Management
- Thyspunt
- Batamsklip
- Duynefontyn

Annexure C – Control Methods – Vegetation Control practises per biomes for all powerline voltages

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