DEA National Electricity Grid Infrastructure SEA

The identification of suitable routing corridors for the efficient and effective expansion of Electricity Grid Infrastructure (EGI)

GAUTENG, LIMPOPO AND MPUMALANGA PROVINCES

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Electrical Grid Infrastructure SEA Project Team

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Project Partner: Eskom

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Environmental Consultants: CSIR

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Joint Service Provider: South African National Biodiversity Institute

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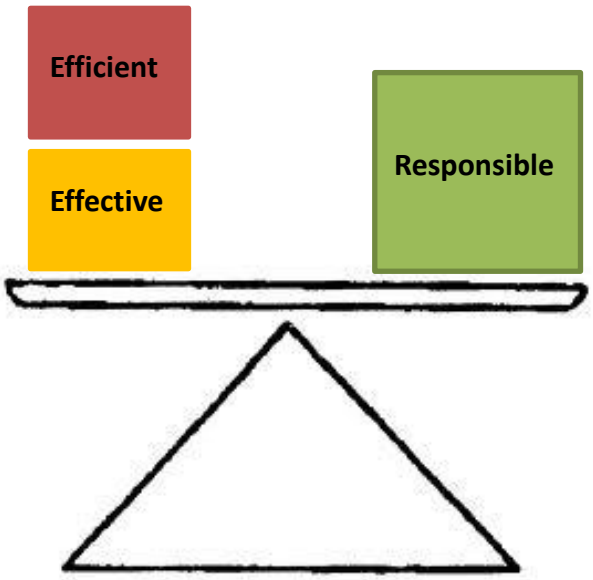
Meeting Objectives

- Inform provincial government on the national electricity grid infrastructure strategic environmental assessment process;
- Consult on the location of preliminary corridors;
- Consult on environmental and engineering sensitivities identified within the corridors;
- Identify what additional information (e.g. SDFs, EMFs, IDPs) should be taken into consideration when considering electricity grid infrastructure development within the province.

Vision and Objectives of SEA

Vision for the SEA: ***Strategic electrical grid infrastructure is expanded in an environmentally responsible and efficient manner that responds effectively to the country's economic and social development needs.***



Objectives of the SEA:

- Identify strategic corridors for future Electrical Grid Infrastructure (EGI) expansion.
- Determine high level suitability from an environmental, economic and social perspective.
- Streamline the authorisation process for EGI within the corridors.
- Enable Eskom greater flexibility when undertaking land negotiation.
- Enable upfront strategic investment
- Promote collaborative governance between authorising authorities.
- Develop a site specific development protocol.

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SEA Objective: Legal context

- SEA not taking away the need for Environmental Authorisation i.e. NOT ‘delisting’ activities using Section 24A of NEMA
- SEA will not lead to a new process, rather keep to existing process (i.e. BA) but adapt.
- EIA regs will be modified to allow for certain listed activities in certain areas to be authorised through an ‘adapted’ BA process, provided there has been some form of pre-assessment undertaken.
- Level of BA assessment can either be more or less comprehensive than current process depending on the area selected for development.

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Approach to SEA

- No single approach to SEA can be applied to all circumstances
- Set of common principles for the application of SEA *(Guideline Document: Strategic Environmental Assessment in South Africa, DEAT and CSIR, 2000)*

Content	Process
• Sustainability	• Flexible
• Opportunities and constraints	• Strategic
• Levels of environmental quality	• Participative
	• Alternatives
	• Precaution and continuous improvement

- Three broad categories of SEA:
  - Policy SEA
  - Spatial plan and regional SEA
  - Sector plan and programme SEA

EGI SEA Process

Phase I (Jan-Aug 14)

Phase II (Sep –Feb 15)

Phase III (Mar-Dec 15)

Eskom Strategic Corridors

Environmental Constraints Map

Engineering Constraints Map

Provincial Government Input

Opportunities Map

Draft Composite Map

Sector Specific Inputs

Local Government Inputs

Second Draft Composite Map

Specialist Scoping Assessment

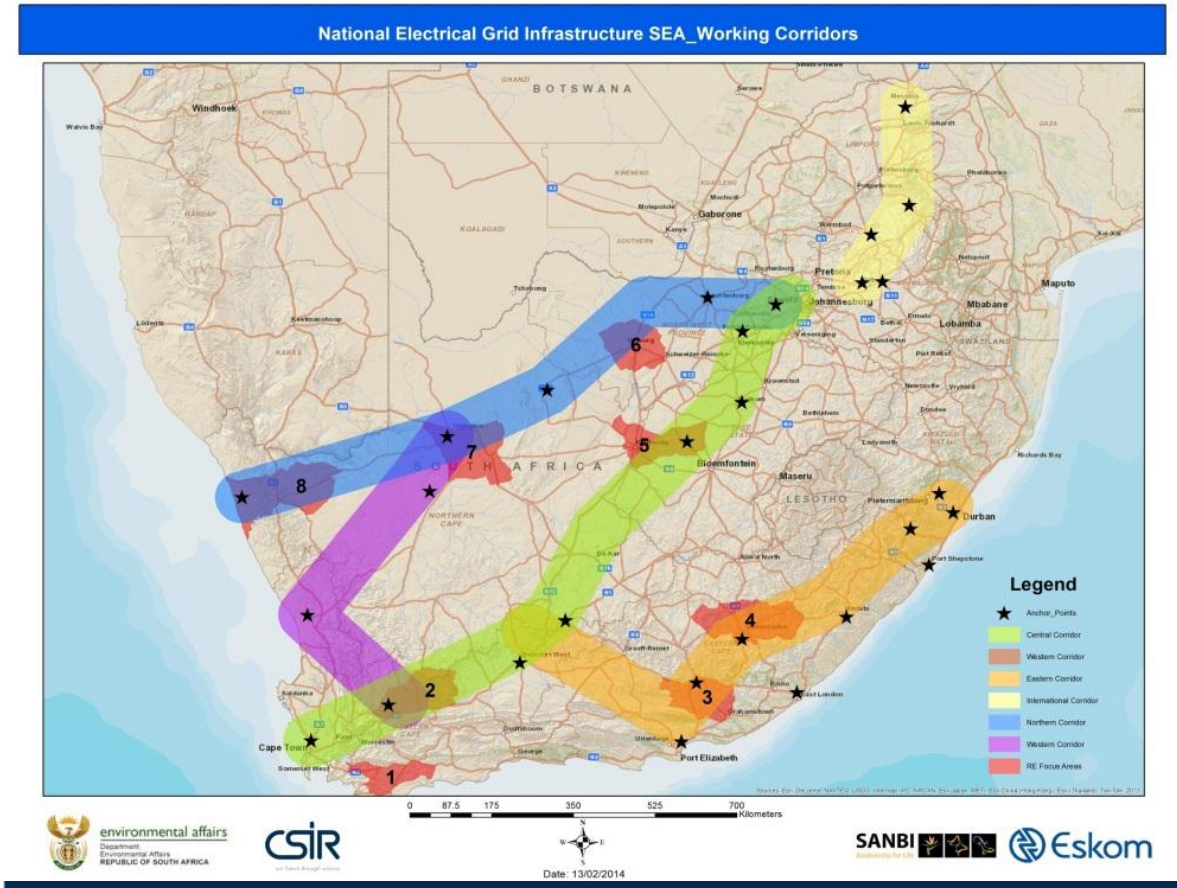
Final Composite Map

Site Specific Protocol

Birds and Bats Monitoring Database

Eskom Strategic Corridors

- Defined according to future generation and load balance scenarios;
- Three scenarios considered:
  - IRP
  - Increased renewable
  - Increased import
- 5 x Transmission corridors identified by Eskom
  - East Coast
  - West Coast
  - Central
  - Northern
  - International
- 100km wide- enables consideration of routing alternatives



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Environmental Constraints Map

- Impact of EGI on the Environment
- A strategic level, GIS map that spatially represents the location and level of constraints associated with environmental features within the corridors
- Features considered can be separated into three categories:
  - The biophysical impact on the natural environment
    - Protected areas
    - Birds
    - Natural forest
  - The impact on the cultural or heritage significance of certain areas
    - World Heritage sites
    - National Heritage sites
  - Land use- areas zoned for land uses of strategic or national importance
    - SKA
    - Airports

Environmental Constraint Categories

- Features categorised according to four levels of sensitivity as follows:

Impact on EGI on Environment: Constraints Categorisation	
Level of Constraint	Description
'No- Go'	The area is rated as extremely sensitive to the negative impact of development. As a result the area will either have **very high conservation value, very high existing/ potential socio-ecocomic value or hold legal protection status.**
High	The area is rated as being of high sensitivity to the negative impact of development. As a result the area will either have **high conservation value and or existing/potential socio-economic value.**
Medium	The area is rated as being of medium sensitivity to the negative impact of development. As a result the area will either have mediums levels of conservation value and or **medium levels of existing/potential socio-economic value.**
Low	Area is considered to have **low levels of sensitivity** in the context of electricity grid infrastructure development.

Engineering Constraints Map

- Impact of Environment on EGI
- Identifies engineering constraints which are likely to impact on the life-time cost (both construction and maintenance) for the development of EGI in certain areas within the corridor
- **Informative layer for Eskom only**
- Eskom line engineering team provided inputs into cost assumptions and classifications
- Cost impact of each constraint feature compared against a baseline cost scenario
- Baseline cost scenario: *Lifetime cost associated with the construction and maintenance of 1km of 400kV line over a 20 year period assuming optimal environmental conditions for construction and maintenance.*
- *Baseline cost scenario referred to as 'BLC index'*
- Each constraint feature was introduced to the above scenario to determine impact on 'BLC index'

Engineering Constraint Categories

- Features categorised according to four levels of sensitivity as follows:

Impact of Environment on EGI: Constraints Categorisation	
Level of Constraint	Description
'No- Go'	The lifetime cost associated with development in this area is **>3 times BLC index.**
High	The lifetime cost associated with development in this area is between **2 and 3 times the BLC index.**
Medium	The lifetime cost associated with development in this area is between **1.5 and 2 times the BLC index.**
Low	The lifetime costs associated with development in this area is **< 1.5 times the BLC index.**

Opportunities Map

- Identification of Positive features to enhance the economic and social component of the assessment
- Polarise the location of the corridors in the direction of national, regional or local economic or social development opportunities/priorities.
- Also identify key ‘pull’ factors for route placement within the corridors to maximise benefit and reduce negative impacts:
  - Recycling of existing transmission lines
  - Aligning to existing linear developments
  - Make use of existing servitude purchases
  - Seek out visual screening opportunities
  - Target degraded/transformed land
- Input from government (provincial and local) essential to understanding pull factors

Specialist Scoping Assessment

- Specialist studies will be undertaken- high level desktop assessments
  - Validate and adapt constraints and opportunities mapping assumptions ;
  - Undertake assessments where no existing data is available e.g. visual impact
  - Contribute to site specific protocol development

Consultation Process

- **Comprehensive consultation process will be undertaken throughout the duration of the project**
  - **Expert Reference Group meetings**
  - **Project Steering Committee meetings**
  - **Provincial Government workshops**
  - **Local Government workshops**
  - **Sector Specific meetings (BUSA, CoM, Agric SA, SAPVIA, SAWEA, farmer associations, NGOs)**
- **Consultation will be accomplished through workshops, focus group meetings and an online consultation process**

Timeframes

- **24 month project**
- **Corridors identified, assessed , supporting documentation completed and legal implementation process agreed by end of 2015**
- **Submitted for Cabinet approval thereafter and gazetted subsequently**

EGI SEA Provincial Road Show Schedule

	Meeting	Date	Location
Trip 1	Western Cape Provincial Consultation	12 May 2014	Cape Town
Trip 2	Eastern Cape Provincial Consultation	13 May 2014	King Williams Town
Trip 3	Limpopo, Gauteng, Mpumalanga Provincial Consultation	22 May 2014	Pretoria
Trip 4	Free State Provincial Consultation	27 May 2014	Bloemfontein
	Northern Cape Provincial Consultation	28 May 2014	Kimberly
	North West Provincial Consultation	29 May 2014	Mahikeng
Trip 5	KwaZulu Natal Provincial Consultation	3 June 2014	Pietermaritzburg
Trip 6	Wind and Solar SEA and EGI SEA Expert Reference Group Meeting	11, 12 June 2014	Pretoria

Thank You

Any Questions?

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