



**environmental affairs**  
Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA



**energy**  
Department:  
Energy  
REPUBLIC OF SOUTH AFRICA



**public enterprises**  
Department:  
Public Enterprises  
REPUBLIC OF SOUTH AFRICA



# Development of a Strategic Environmental Assessment for the Identification of Energy Corridors, as well as Assessment and Management of a Gas Pipeline Network for South Africa

## Authority and Public Meeting Roadshow

01 – 13 November 2017

**SANBI**

Biodiversity for Life

South African National Biodiversity Institute



**CSIR**

*our future through science*

# Need for an SEA

- To support objectives of Operation Phakisa Offshore Oil and Gas Lab
- To be proactive rather than reactive with regards to planning for infrastructure
- To ensure that when required, environmental authorisations are not a cause for delay



**Strategic Environmental Assessment**

# SEA Project Team

## Project Coordinator: DEA

**Dee Fischer**  
Project Coordinator

**Simon Moganetsi**  
Project Manager

## Project Partners

**DoE**  
iGas

**DPE**  
Transnet, Eskom

## Environmental Consultants: CSIR

**Paul Lochner**  
Project Advisor

**Annick Walsdorff**  
Project Leader

**Rohaida Abed**  
Project Manager

**Samukele Ngema**  
Project Intern

## Joint Service Provider: South African National Biodiversity Institute

**Jeffrey Manuel**  
Director Biodiversity  
Information and Planning

**Fahiema Daniels**  
Deputy Director: Biodiversity  
Planning

**Tsamaelo Malebu**  
GIS specialist



# Vision of SEA: Development of a Strategic gas pipeline network and expansion of the gazetted EGI in an environmentally responsible and efficient manner that responds effectively to the country's economic and social development needs.

- **Effective**

- Identify strategic corridors for gas pipeline network and future electrical grid expansion
- Secure long term energy zones and corridors (against incompatible land uses and activities).

- **Efficient**

- Streamline the authorisation process (determine environmental sensitivities).
- Enable developers greater flexibility when undertaking land negotiation.
- Promote collaborative governance between authorising authorities.

- **Responsible**

- Develop a site specific development protocol, norm or standards and EMPr.
- Contribute to skills development.

# Overview of SEA Process

Key Stakeholders Consultation  
ERG, PSC, Sector Specific Meetings

Public outreach 1

Public outreach 2

## PHASE 2

## PHASE 3

Decision-support  
outputs and  
Gazetting

2018

SEA Outputs

Final  
Corridors

Final Corridor  
Environmental  
Constraints  
Map

Protocols,  
Standards and  
Norms

Task III  
(Corridor Refinement)

Nov 2017

Draft  
Corridors

Example

Draft Corridor  
Environmental  
Constraints  
Map

Example

Task IV  
(Environmental Assessment)

Oct 2017 – March 2018

Specialist  
Studies

Review and  
Final corridor  
alignments

Task II  
(Negative Mapping)

Sept-Oct 2017

W2W  
Environmental  
Constraints  
Map

Example

W2W  
Engineering  
Constraints Map

Example

Task I  
Initial Corridors  
(Starting Point)

June 2017

Preliminary  
Corridors

Example

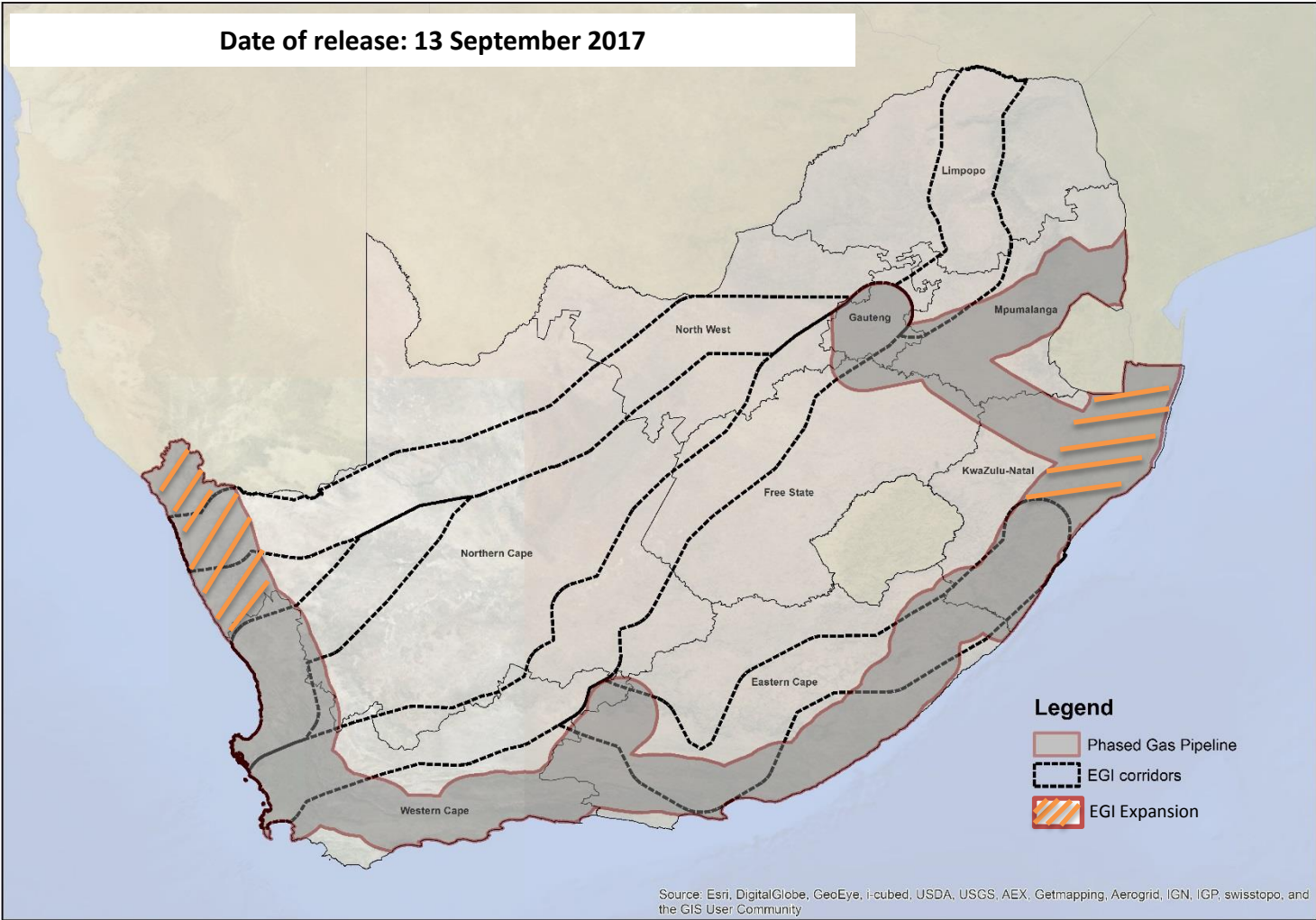
PHASE 1: Inception

We are here

Skills Development

# DRAFT Initial Corridors

Date of release: 13 September 2017





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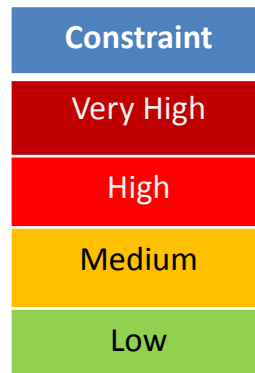
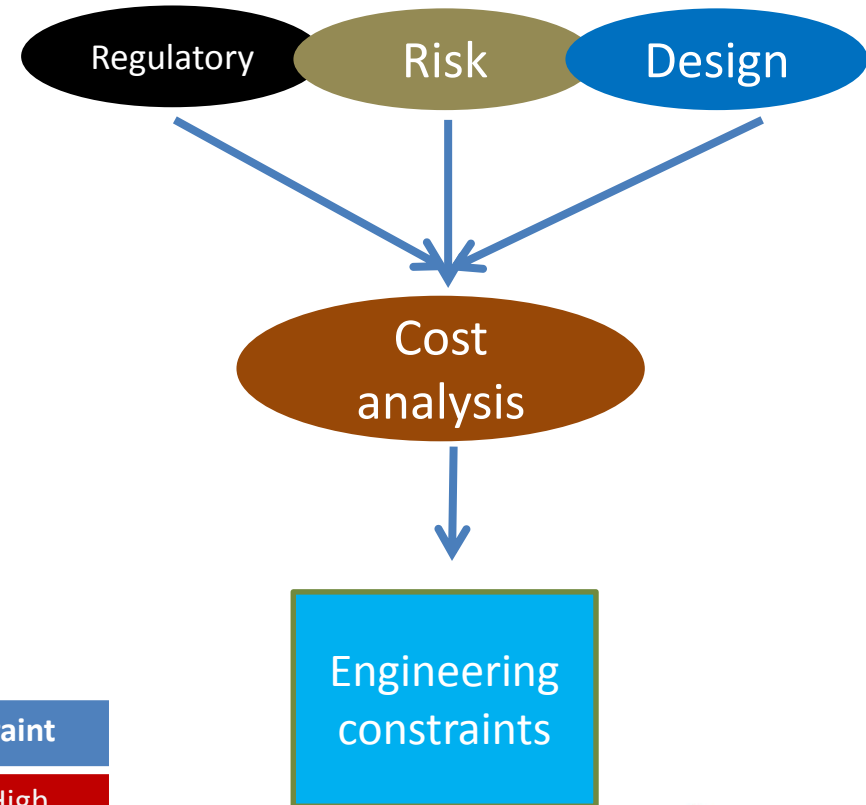
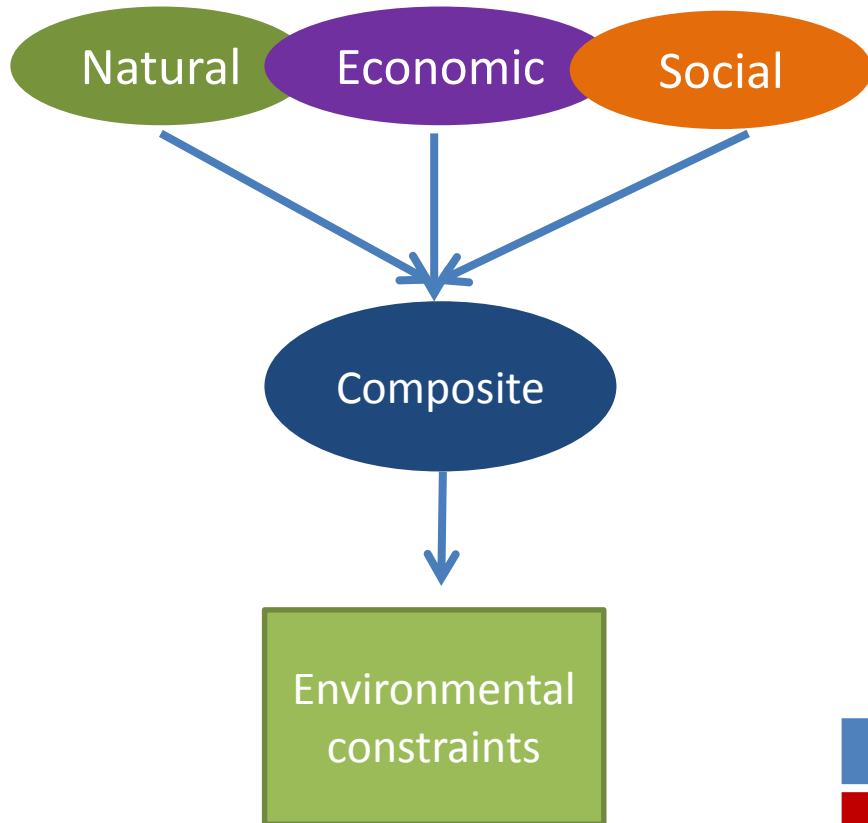
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Skills Development

# Constraints framework

Impact of EGI/Gas pipelines on Environment

Impact of Environment on EGI/Gas Pipeline





# Constraints Matrix

Constraint	Environmental	Engineering
Very High	Area is rated as being extremely sensitivity to development. As a result the area will either have very high conservation or socio-economic value	The lifetime cost associated with development in this area is greater than 175% the baseline lifetime cost index.
High	Area is rated as being highly sensitivity to development. As a result the area will either have high conservation or socio-economic value	The lifetime cost associated with development in this area is between 150% and 175% the baseline lifetime cost index.
Medium	Area is rated as being of medium sensitivity to development. As a result the area will either have medium conservation or socio-economic value	The lifetime cost associated with development in this area is between 120% and 150% the baseline lifetime cost index.
Low	Ares is considered to have low levels of sensitivity in the context of Gas or EGI development	The lifetime costs associated with development in this area is less than 120% times the baseline lifetime cost index.

## Protected Areas

National Parks

Provincial NRs

Contract NRs

Forest PAs

Special NRs

MCAs

PEs

PA expansion

PA buffers

## Terrestrial

Natural Forest

Thicket

Threatened spp  
localities

CBAs

Threatened  
Ecosystems

## Freshwater

All wetlands

Rivers

Dams

Estuaries

## Degradation

Eroded areas

Soil erodibility

## Avifauna

IBAs

Colonies and roosts  
for large birds

Bat roosts

Bat ecoregions

# Environmental Constraints

## Production Landscape

Commercial Forestry

Forestry expansion

Deep rooted agriculture

Irrigation pivots > 500m

Other agriculture fields

## Cultural Landscape

Heritage Sites

Landscape integrity

## Urban and settlements

Rural Settlement

Urban areas

Urban Expansion

## Infrastructure and Industrial

Square Km Array

Industrial areas

Industrial expansion

Roads

Railways

Pipelines

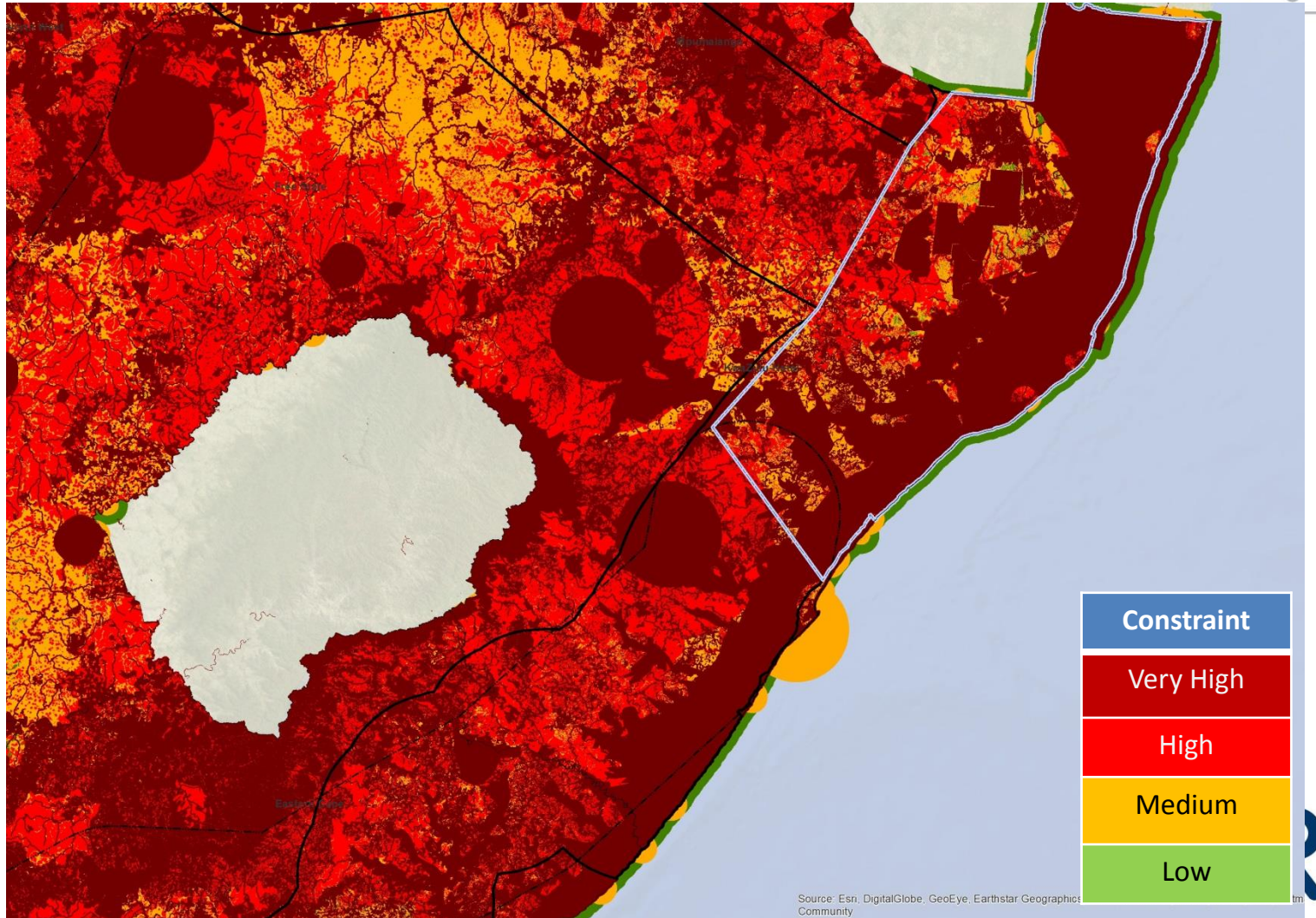
# Wall to Wall Gas Environmental Constraints

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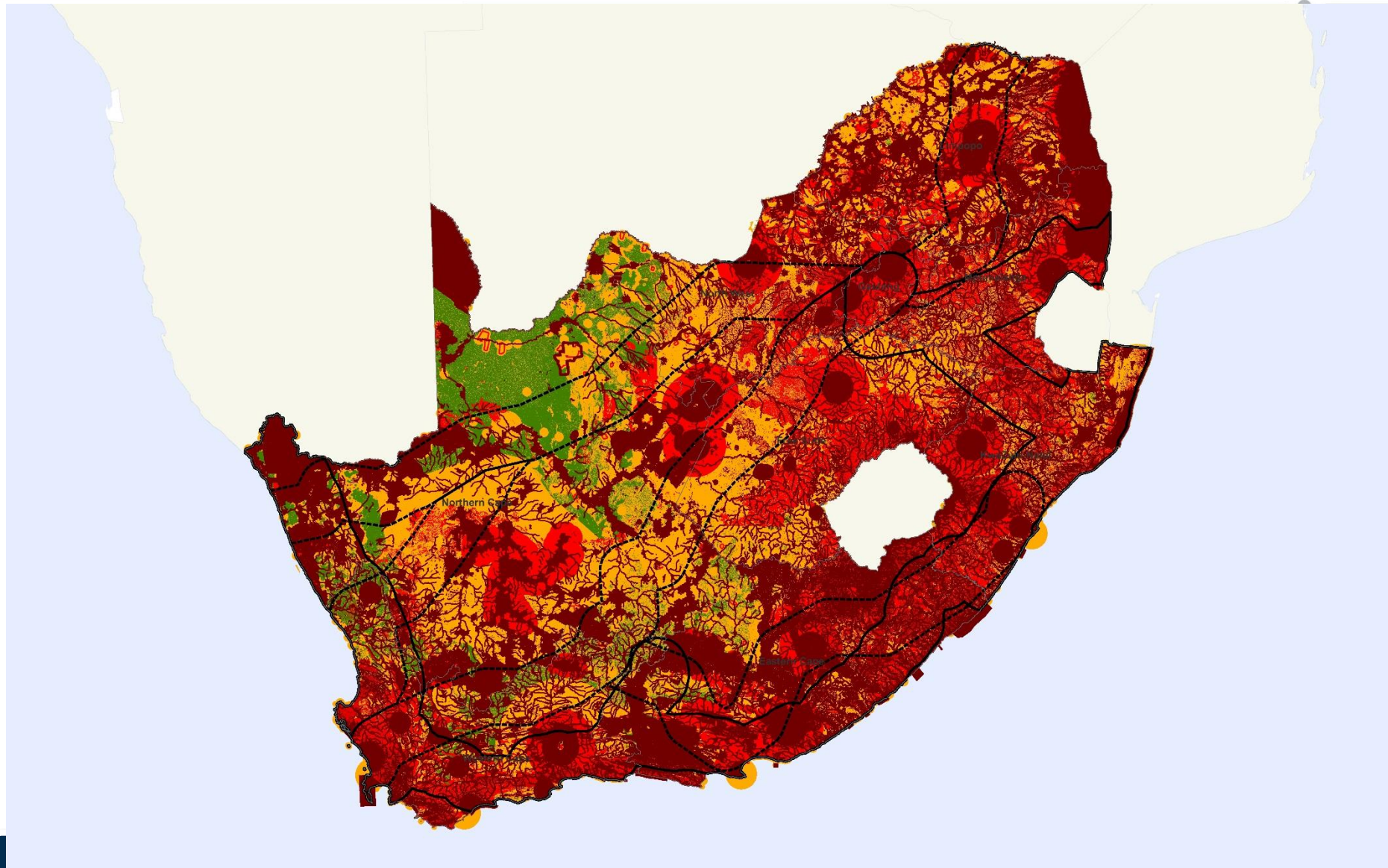
**DRAFT**



# Wall to Wall Gas Environmental Constraints



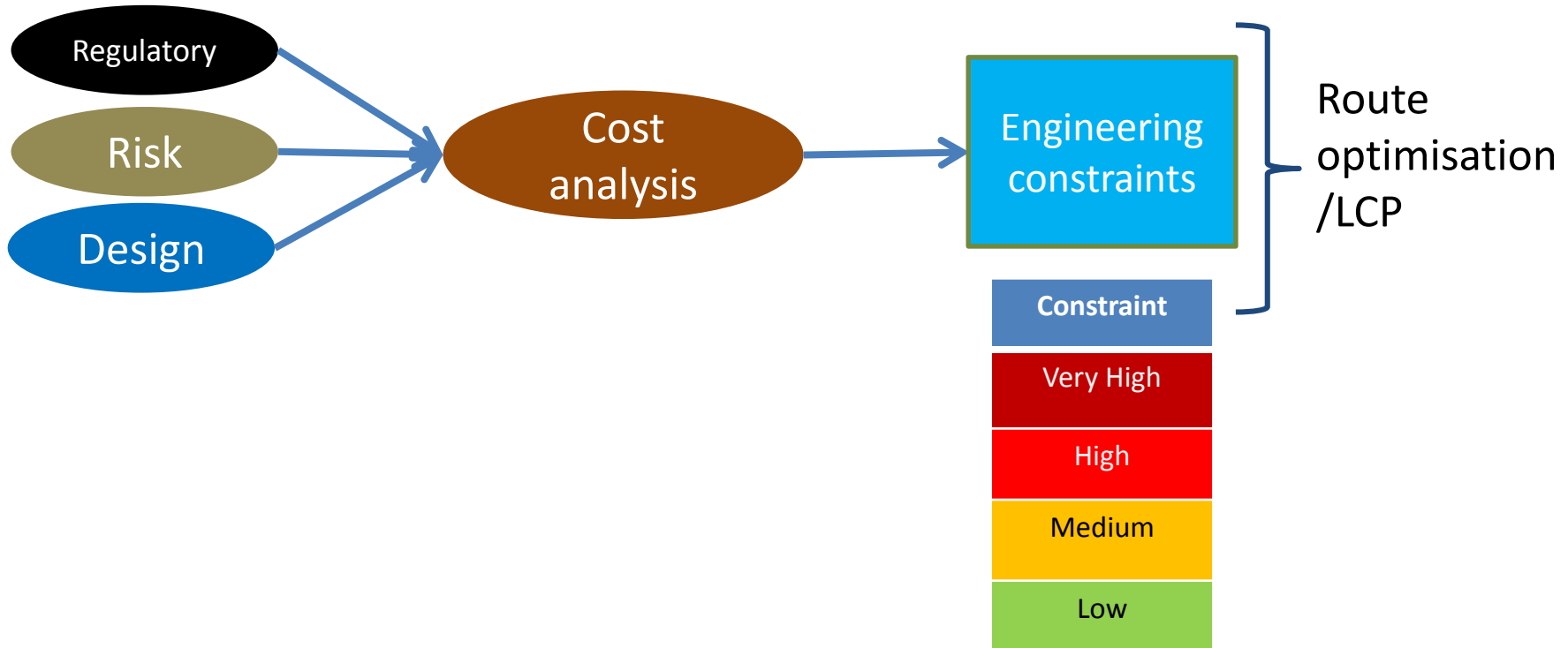
# Wall to Wall EGI Environmental Constraints





# Constraints Framework

## Impact of Environment on EGI/Gas Pipeline





# Engineering Constraints

## Industry

SKA

Forestry

Urban settlement

WULAs

Mining

## Natural Environment

Rivers & wetlands

Agriculture fields

Thicket

Dams & estuaries

Slope

## Specific EGI data

High fire

High wind

High snow

Pollution

Flooding

Eroded areas

## Specific for Gas

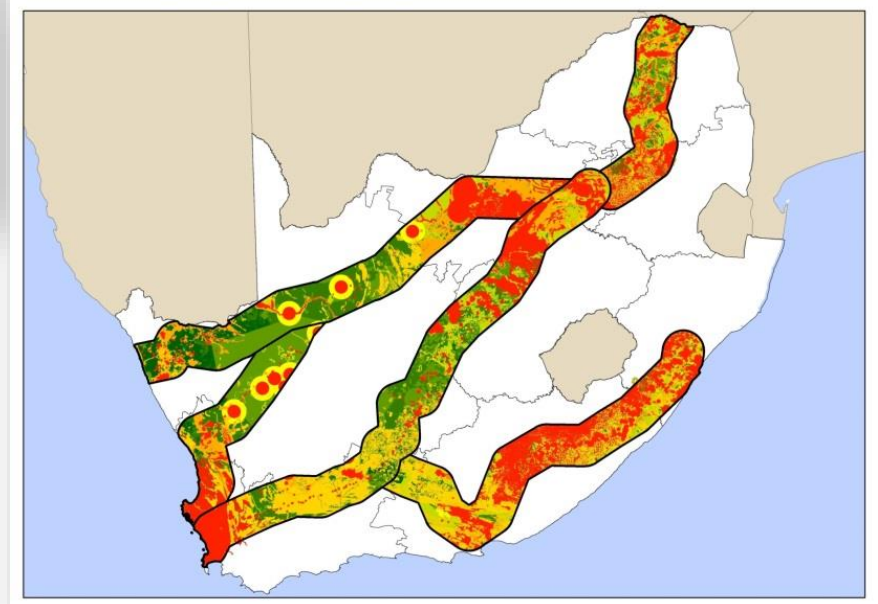
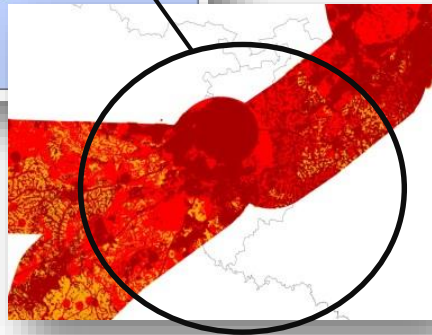
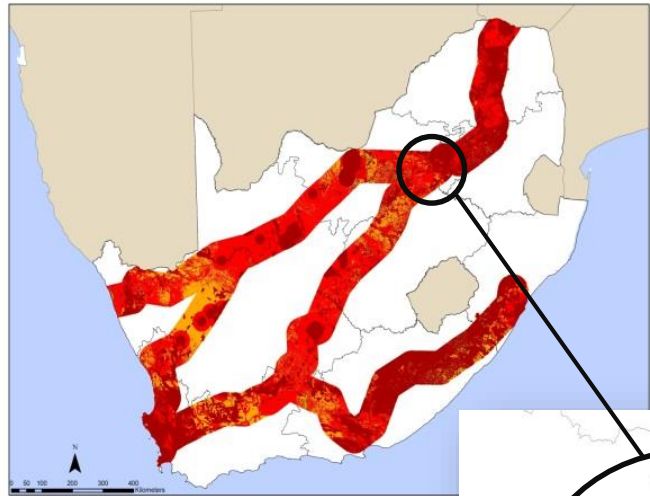
Geotechnical

Fault lines and seismic data

# Energy Corridors Assessment - Way forward

- Refine and collect additional data (e.g. SAHRA, etc)
- Engage with sector to improve sensitivity of data sets
- Complete Engineering constraints
- Specialist/ sector assessment and input
- Pinch Point analyses for identification of routing options

# Least Coast Path Analysis Process



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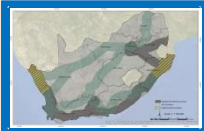
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Skills Development

# Prioritising Energy Corridors

- Protect the energy corridors identified through this SEA from incompatible and conflicting land uses being developed within the identified areas.
- Corridors needs to be embedded in all the spatial planning of the municipal areas and other national plans.
- Two levels:
  - National long term planning: e.g. National Planning Commission, Spatial Planning and Integrated Resource Plan (IRP), Integrated Energy Plan (IEP), Economic Development Spaces.
  - Short term spatial planning: e.g. Town planning, IDZ input and local governments.

# Deliverables

## Timeframes

- 18 months project
- Corridors identified, assessed, draft supporting documentation completed and legal implementation process agreed by mid of 2018
- Submitted for Cabinet approval thereafter and gazetted subsequently

## Main Deliverables

- The SEA approach, methodology and findings will be written up.
- Corridor specific development protocols, norms or standards will be drafted.
- Final outputs of SEA presented to cabinet

# Way Forward

- **Planned Consultations**

- Series of sector specific meetings.
- Assistance from and reliance on Provinces and District Municipalities to engage with Local Government (public meetings).
- Public meetings and Focus Group meetings (District Municipalities) in strategic areas (i.e. Johannesburg, East London, Cape Town, George, Springbok and Durban).
- Focus group meetings to ensure that corridors are embedded in all the spatial planning of the municipal areas and other national plans; PICC, MUNIMEC, IRP/IEP, etc.



# Project Website

**Project Email Address:**  
**gasnetwork@csir.co.za**

**Project Website:**  
**https://gasnetwork.csir.co.za/**

Strategic Environmental Assessment for the Development of a Gas Pipeline Network for South Africa



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You are here: Home

[The Need for an SEA Objectives](#)

Welcome to the official website for the Strategic Environmental Assessment (SEA) for the development of a Gas pipeline network for South Africa.

The website provides the general public with the opportunity to register as stakeholders; conveys the latest information and outputs of the assessment process for review and comments; and describes the opportunities for how stakeholders can engage further in the assessment over the 18 month SEA process.

**The Need for an SEA**

In 2012, Cabinet adopted the National Development Plan (NDP), which provided South Africa's plan to accelerate infrastructure development in order to address service delivery backlogs and facilitate economic growth and job creation. Operation Phakisa is a fast results delivery programme that was launched in July 2014 to help implement the NDP. This is a unique initiative of the South African government to address key issues such as poverty,

SEARCH

USEFUL INTERNET LINKS

- DEA
- SANBI
- SIP 10: Electricity transmission and distribution for all
- DEA Environment GIS (EGIS)
- Operation Phakisa

RECENT POSTS

- 20 April 2017 Project Launch

# QUESTIONS

- Confirm location of corridors
- Incompatible land uses
- Any specific new/updated data to be used in the sensitivity analysis
- Mechanisms to secure the corridors



Thank you