



ESKOM HOLDINGS LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE DEA REF. No.:12/12/20/944

**EIA Phase Public Meeting:
Review of Draft Environmental Impact Report**

March / April 2010

PROPOSED AGENDA

1. Sign attendance register and discussion with team: 17:00 – 17:50
2. Welcome and introductions: 18:00 – 18:10
3. Presentation of EIA and EMP findings: 18:10 – 19:00
4. Discussion: 19:00 – 19:50
5. Way forward and close: 19:50 – 20:00



MEETING CONDUCT

- Please wait for the discussion session to ask questions
- Introduce yourselves prior to asking a question and indicate your specific interest
- You are welcome to ask the question in your mother tongue. Presentations will be in English
- One person at a time
- Work through the facilitator
- Show respect
- Focus on the issue not the person
- Be constructive
- Agree to disagree

**Please switch
off all cell
phones!**



MEETING OBJECTIVES

- The focus of the meeting is to provide an opportunity for Interested and Affected Parties (I&APs) to comment on the findings of the EIA and the Draft Environmental Impact Assessment Report (EIR)
- Provide an opportunity for I&APs to seek further clarity on the proposed project, the EIA phase and the Draft EIR
- Provide I&APs with an opportunity for interaction with the EIA team
- Recording of issues - the proceedings will be recorded and used to compile meeting minutes. Comments will be included in the Issues and Response Report (IRR) and changes will be made to the Final EIR, where necessary



KEY ISSUES

- Some people are opposed to and others are in favour of a nuclear power station at Bantamsklip, Thyspunt and Duynefontein
- Concerns about the potential impacts on human health and safety
- Local residents share a deep-felt connection to the area and have a strong “sense of place”
- A power station could potentially be unsightly
- Tourism is linked to conservation and preservation of the coastline



KEY ISSUES

- Marine life could potentially be adversely affected by altered sea temperature and turbulence caused by inflow and output of sea water to the plant
- Concern that commercial and recreational fishing may be negatively impacted
- Light pollution
- Concerns about potential drop in property values
- Concern about cost of constructing a power station
- Some people expressed a lack of trust in the EIA
- Storage of hazardous waste
- Renewable ('green') energy (e.g. wind, solar) vs. nuclear



PROJECT MOTIVATION

- Increasing demand for electricity (> 4% growth per annum)
- Projected requirement for more than 40 000 MW of new electricity generating capacity over the next 20 years
- In SA only coal and nuclear power are solutions for base load generation, while gas turbines, hydroelectric power stations and pumped storage schemes are used for peaking and emergency electricity generation



PROPOSED ACTIVITY

- Eskom proposes the construction, operation and decommissioning of a conventional nuclear power station and associated infrastructure either in the Eastern or Western Cape
- A nuclear power station of the Pressurised Water Reactor (PWR) type technology e.g. Koeberg Power Station
- The transmission power lines are subject to separate environmental authorisation processes



TRANSMISSION (TX) LINE EIAs

- Bantamsklip – Scoping phase has been extended to include Multi-stakeholder Workshops and additional public consultation. Revised Draft Scoping Report will be made available for public comment
- Thyspunt and Duynefontein – Scoping Report accepted by Authorities and EIA phase has commenced



PROJECT BACKGROUND

- The power station and directly associated infrastructure will require approximately 31 ha (e.g. Thyspunt: 1.3% of current 2 400 ha Eskom property)
- The footprint assessed makes provision for the potential future expansion of a power station to 10 000 MW or the maximum carrying capacity. Separate EIA required for any further expansion beyond 4 000 MW
- The proposed nuclear power station will include nuclear reactor, turbine complex, spent fuel, nuclear fuel storage facilities, waste handling facilities, intake and outfall pipelines, desalinisation plant and auxiliary service infrastructure (e.g. access roads, OCGT plant, HV yard, visitor centre)



PROJECT BACKGROUND

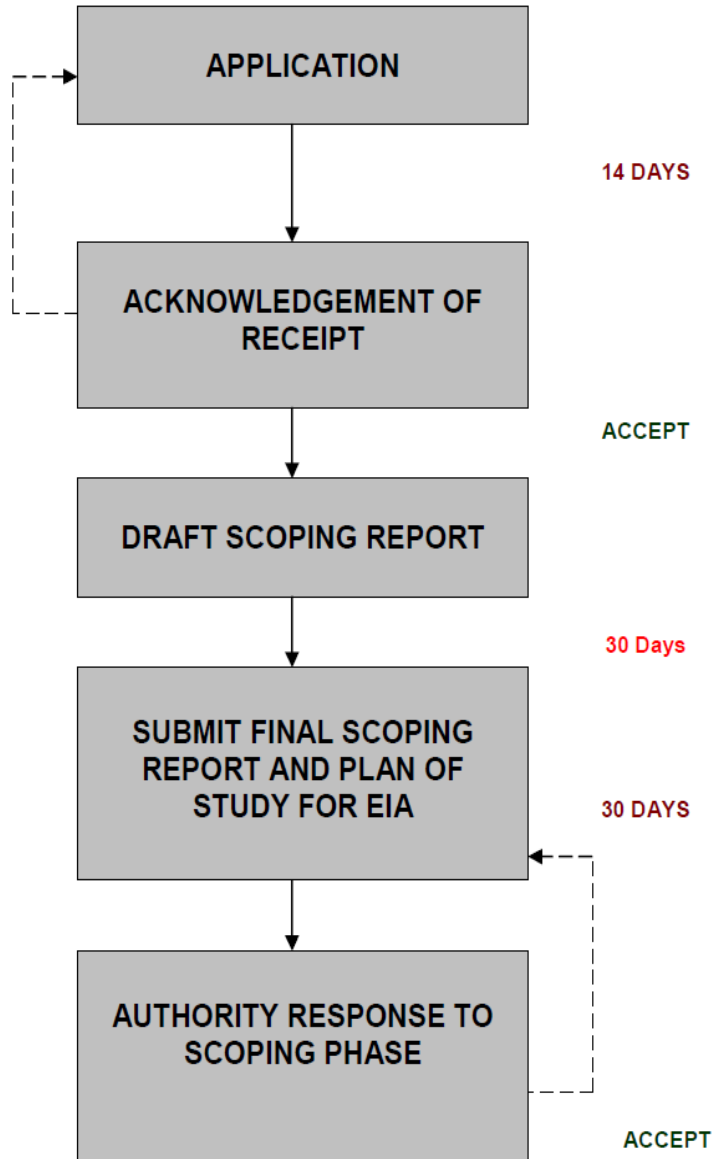
- Should the proposed project be authorised, it is anticipated that construction of the station could commence in 2011 with the first unit being commissioned in 2018 (optimistic)
- Construction period – 7 to 9 years
- Labour requirements:
 - Construction – 7 700 persons
 - Operation – 1 400 persons
- Construction and operational access routes to Thyspunt site (22 m wide, tarred)
 - Eastern access route (11 km)
 - Western access route (7 km)
- Normal (sedans), heavy (buses, trucks) and exceptionally heavy vehicles (42 m x 8.23 m max.)
- Peak construction vehicle trips: 828 morning and 945 evening



ENVELOPE OF CRITERIA

- Detailed description of proposed nuclear plant is not available, as preferred supplier has not been selected
- Approach used has been to specify enveloping environmental and other relevant requirements, to which the power station design and placement on site must comply
- Enveloping criteria represent the most conservative parameters associated with the various plant alternatives within the available Generation III PWR technology





Application submitted to DEA (May 2007) and amended in July 2008

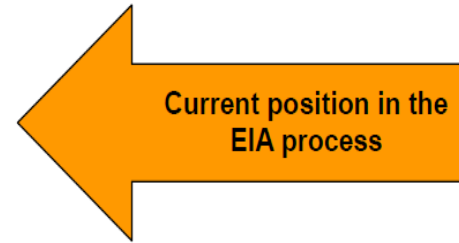
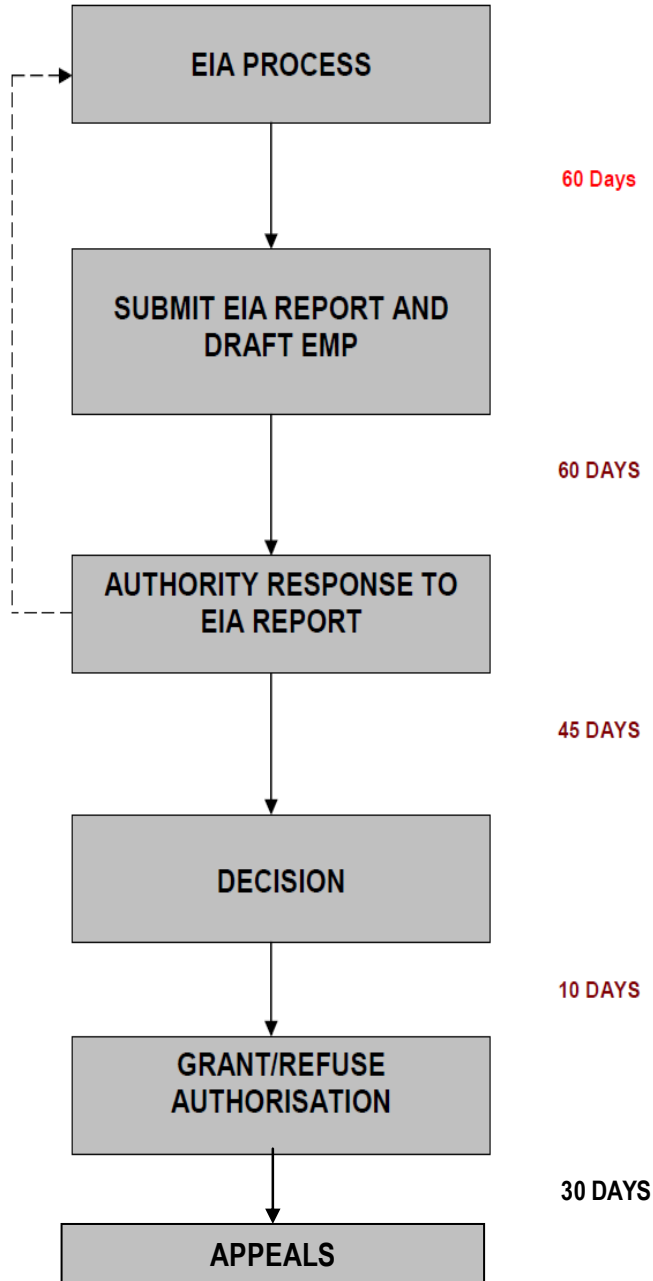
Mid 2009, Eskom considers amending application to include more than one power station. Eskom subsequently decided not to pursue the amendment

DEA approved the Scoping Report - November 2008

Plan of Study (PoS) for EIA was made available for two rounds of comment

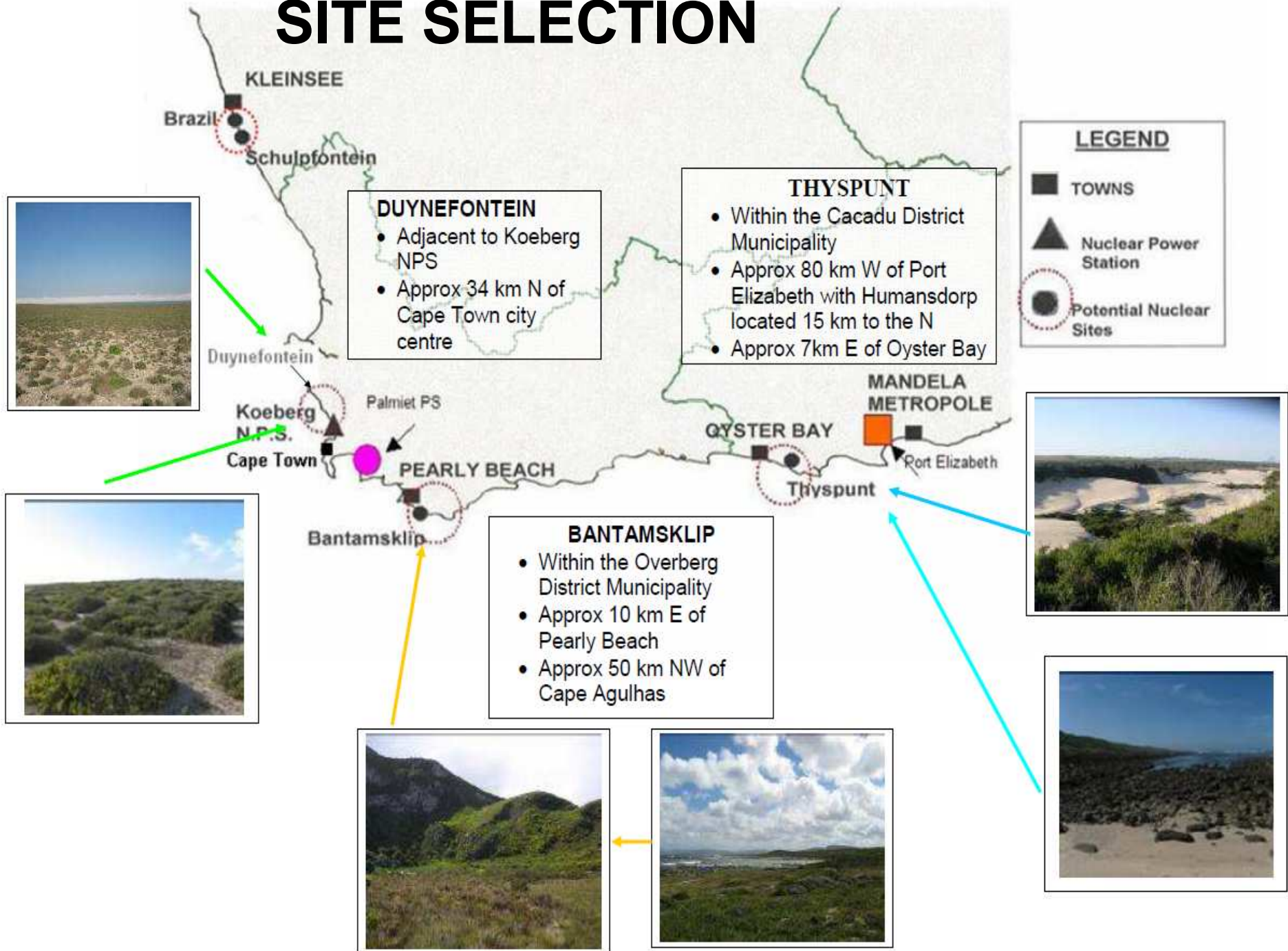
DEA approved Final PoS for EIA - January 2010

Scoping phase of the EIA process complete



In line with Eskom's intention to investigate the potential development of up to 20 000 MW of nuclear power generating capacity - application for the second nuclear power station may be submitted soon after the submission of the Final EIR for Nuclear-1

SITE SELECTION



LOCALITY



ASSESSMENT OF IMPACTS

- The potential impacts assessed were based on:
 - Issues identified by I&APs during the public participation process (PPP)
 - Issues identified by specialists through research
 - Experience of relevant specialists with projects of a similar nature or in a similar environment
 - Consultation with local specialists
 - Environmental resources and conditions identified during site surveys



METHODOLOGY

- Independent specialists assessed potential positive and negative impacts with and without mitigation
- According to the specialists:
 - all potential negative impacts can be mitigated
 - there are no fatal flaws at any of the alternative sites



SPECIALIST STUDIES

- **Physical Impacts**

Geology and geological risk

Seismological risk

Geo-hydrology

Geotechnical characteristics

- **Biophysical Impacts**

Dune geomorphology

Flora

Fauna (Invertebrate and Vertebrate)

Hydrology

Freshwater ecosystems

Oceanographic conditions

Marine biology

Air quality

Assessment of the 1:100 year floodline



SPECIALIST STUDIES

- **Socio-economic Impacts**

Social

Economic

Noise

Visual

Heritage and cultural resources

Waste

Tourism

Agriculture

Transport

- As per the NNR / DEA co-operative agreement, a number of specialist studies related to human health risk and safety were commissioned and included in this EIR for information (4 studies)





Site Sensitivity: Thyspunt – Wetlands



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: Wetlands on site Thyspunt

Legend

-  HVY Corridor
-  EIA corridor
-  Wetlands

0 0.5 1 2 Kilometers

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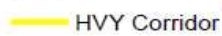
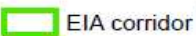


Site Sensitivity: Thyspunt – Flora



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vegetation fauna on site Thyspunt

Legend

-  HVY Corridor
-  EIA corridor
-  Vegetation



1:50,000






Site Sensitivity: Thyspunt – Vertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity vertebrate fauna on site Thyspunt

Legend

-  HVY Corridor
-  EIA corridor
-  Vertebrate Fauna



1:50,000





Site Sensitivity: Thyspunt – Heritage



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity heritage features on site Thyspunt

Legend

-  HVY Corridor
-  EIA corridor
-  Heritage

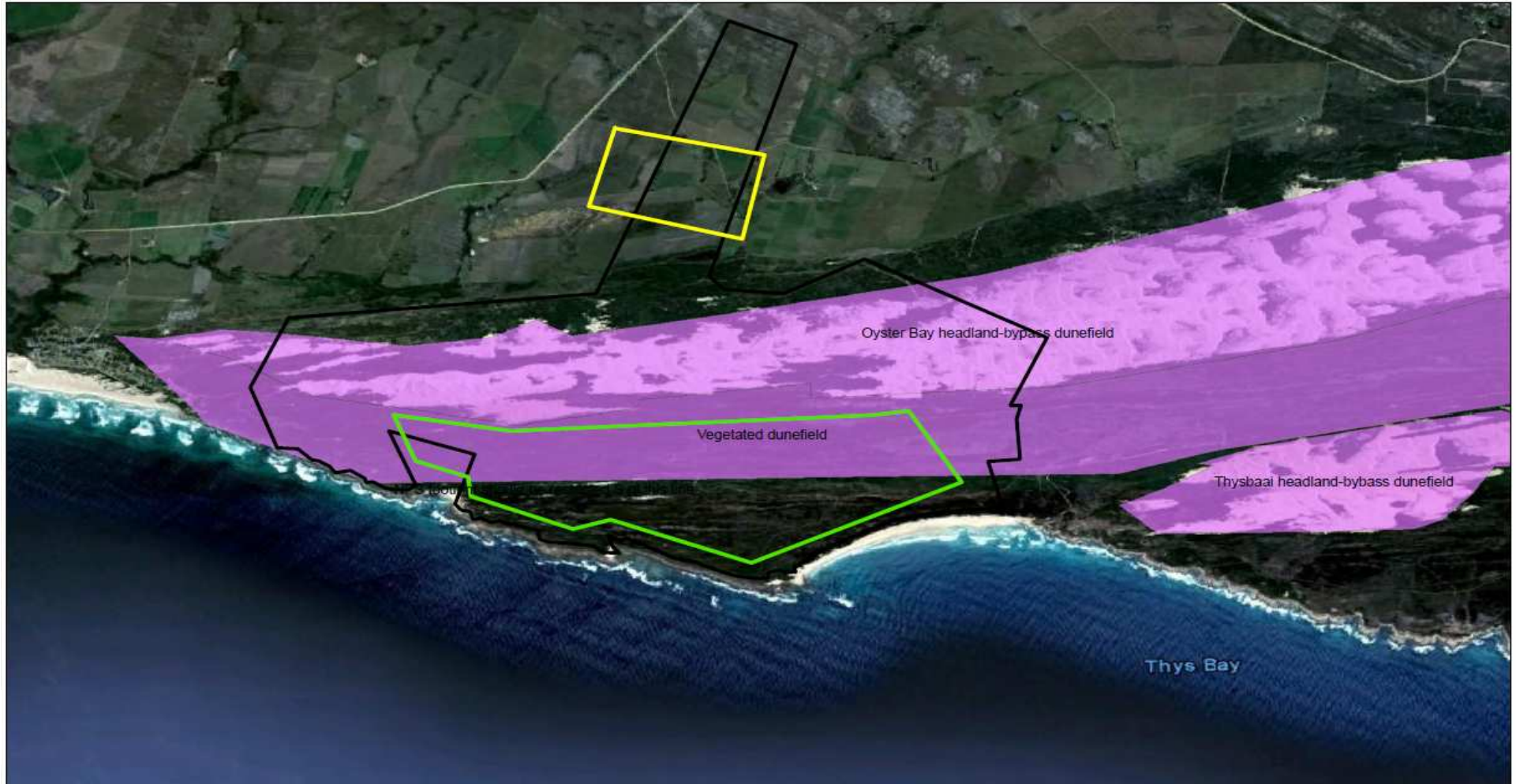


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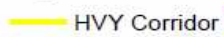




Site Sensitivity: Thyspunt – Dunefields



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity dunefields on site Thyspunt

Legend

-  HVY Corridor
-  EIA corridor
-  Dune Geomorphology

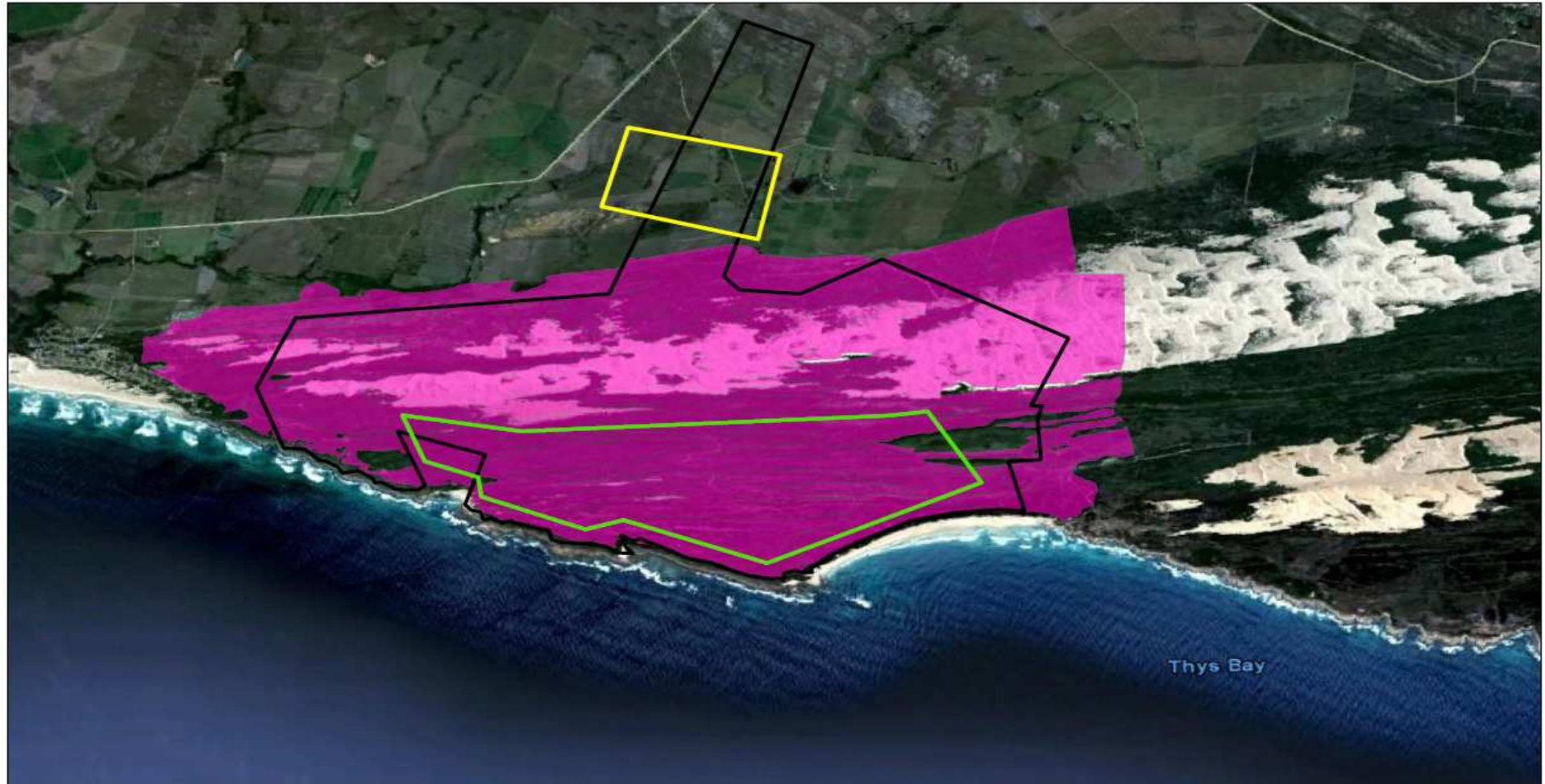


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Site Sensitivity: Thyspunt – Invertebrate Fauna



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity invertebrate fauna on site Thyspunt

Legend

— HVY Corridor — EIA corridor Invertebrate Fauna

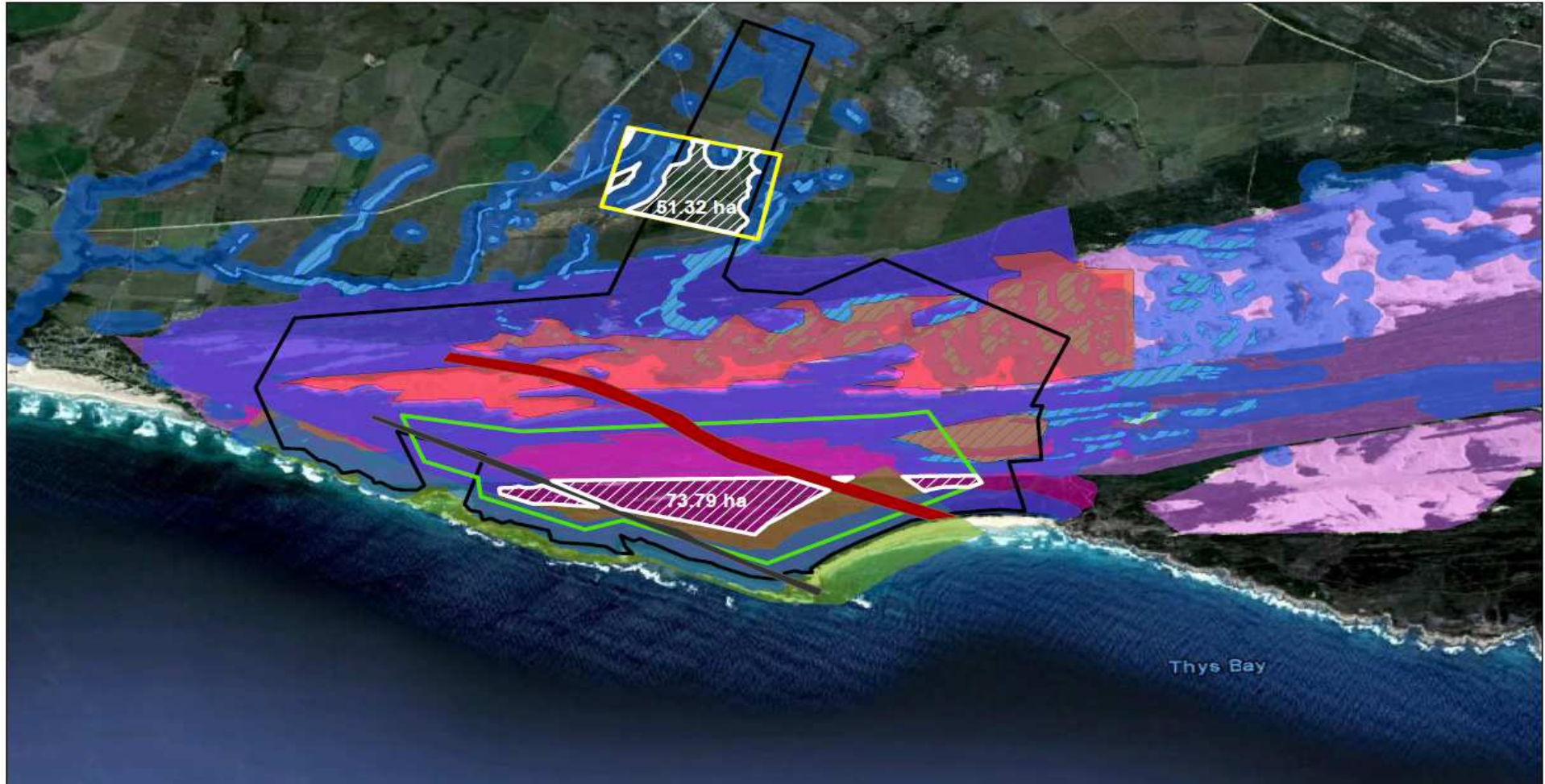
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Site Sensitivity: Thyspunt – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Thyspunt site

Legend

- | | | |
|----------------------|--------------------|--|
| Least sensitive area | Vertebrate fauna | Dune geomorphology |
| HVY corridor | Heritage | Geology, Seismology and Geotechnics |
| EIA corridor | Wetlands | 'No-go' Zone of Seismic Hazard (Goudini/ Cederberg Transition) |
| Vegetation | Invertebrate fauna | 'No-go' Zone of Seismic Hazard (Skurweberg/Goudini Transition) |

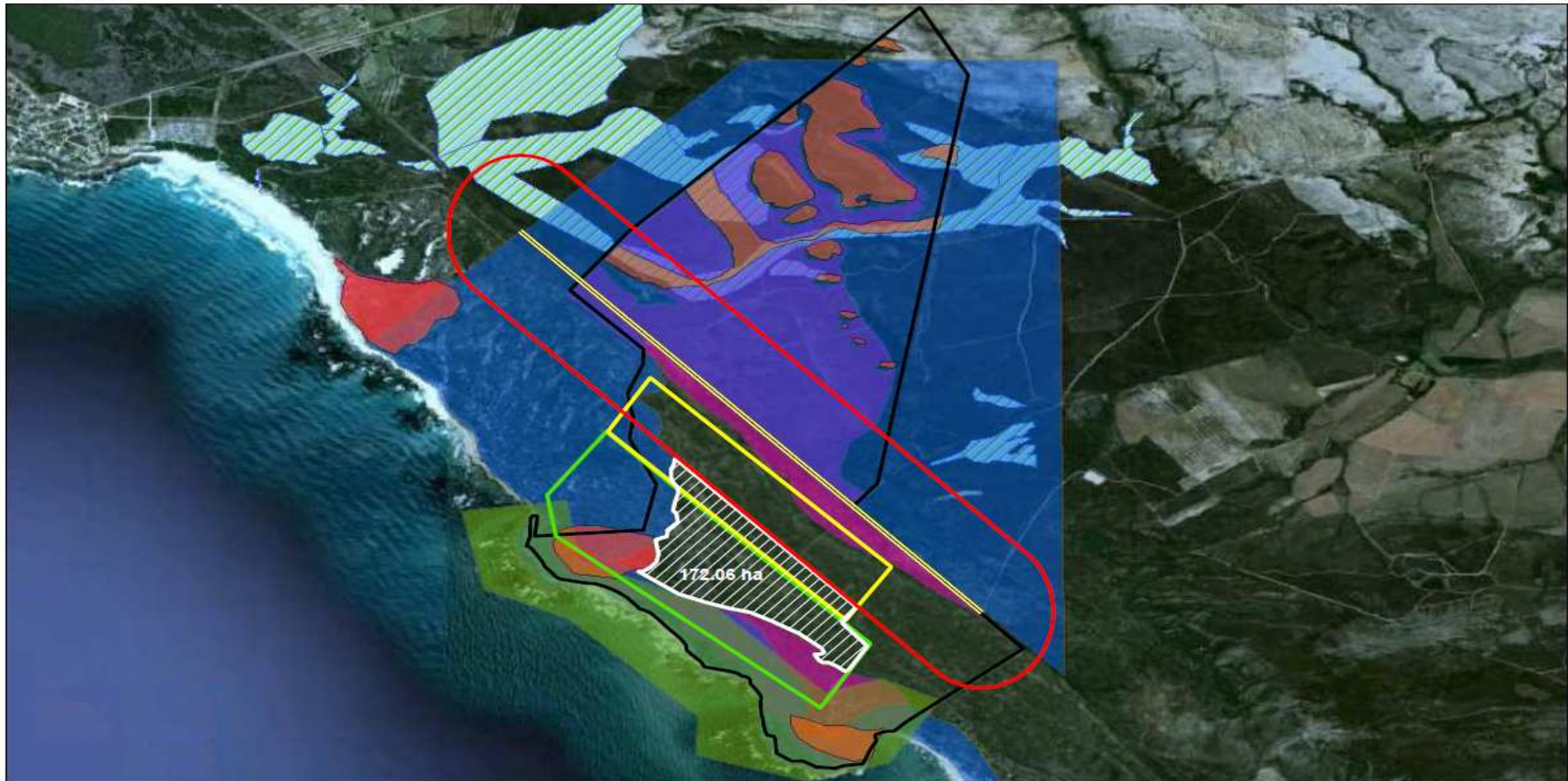


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Site Sensitivity: Bantamsklip – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Bantamsklip site



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Site Sensitivity: Duynefontein – Combined Sensitivity



Eskom Proposed Nuclear-1 Power Station and Associated Infrastructure: High sensitivity features on Duynefontein site

Legend

- Affected portion of road
- 800m road buffer
- Least sensitive area
- HVY corridor
- EIA corridor
- Heritage
- Vegetation
- Vertebrate fauna
- Invertebrate fauna
- Wetlands (not significant)
- Geotechnical and seismology not significant



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KEY MITIGATION MEASURES

- Independent specialists have proposed mitigation measures to reduce potential negative impacts
- Draft EMP has been compiled as part of draft EIR and if authorised, it will be a legally binding document
- Compliance to EMP must be independently audited throughout construction and operation
- Mitigation measures for botanical impacts, vertebrate and invertebrate fauna, wetlands and heritage resources are particularly important
- Mitigation of heritage impacts will require the work of a site-specific team dedicated to excavations over a period of several years prior to construction



KEY MITIGATION MEASURES

- Qualified and experienced botanical, wetland, vertebrate and invertebrate fauna, dune geomorphology and heritage specialists will need to find acceptable detailed final access route alignments
- Additional groundwater studies are necessary to improve accuracy to of the groundwater model to understand interaction between groundwater and coastal seep wetlands
- Cut-off wall to prevent drawdown of groundwater affecting wetlands during construction
- Acquisition of properties on eastern side of site outside of current Eskom property up to the western boundary of The Links for dedicated wetland conservation



WAY FORWARD

- Comment Period – 6 March to 10 May (66 days)
- Websites: www.gibb.co.za and www.eskom.co.za/eia
- Public meetings and key stakeholder workshops will be held around the sites assessed from 23 March to 21 April. Minutes of meetings will be sent to attendees
- Comments received will be addressed in the Issues and Response Report in the Final EIR



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- Final EIR will be submitted to the DEA for consideration and decision-making
- Final decision regarding EIA will be communicated to registered I&APs
- Construction of Nuclear-1 is subject to other approvals e.g. the NNR site safety decision and transmission lines EIA authorisations



WAY FORWARD

Written comments can be submitted by:

- Post: Public Participation Office, Nuclear 1 EIA, PO Box 503, Mtunzini, 3867, SA
- Fax: +27 (0) 35 340 2232
- Email: nuclear1@acerafrica.co.za



MEETING CONDUCT

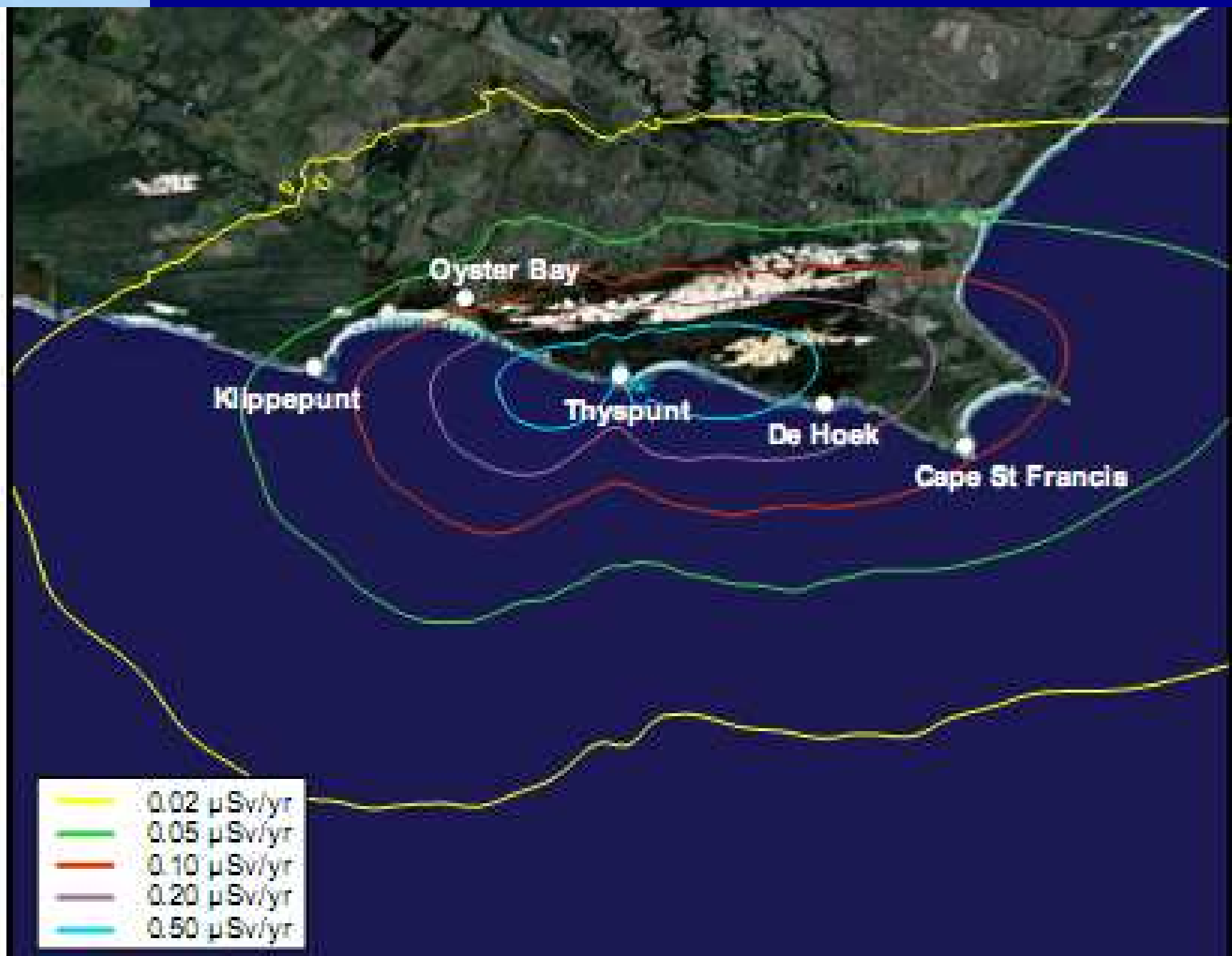
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THANK YOU



SPECIALIST STUDY RESULTS

Radioactive emissions

“Govt. Notice No. R 388 of 2009 specifies that the annual effective dose limit for members of the public ... is 1 000 μ SV, with an additional provision for an annual dose constraint of 250 μ SV. The highest predicted inhalation and external effective dose of 11.3 μ SV is therefore about 4.5% of the dose constraint and about 1% of the annual effective dose limit.”

