



ESKOM HOLDINGS LIMITED

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

**Authority Meeting:
Draft Environmental Impact Report**

3 August 2010

PROPOSED AGENDA

1. Welcome and introductions
2. Aim and expected outcomes of meeting
3. Presentation of EIA and EMP findings
4. Timelines and project schedule
5. General discussion
6. Close



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 lines and employee villages 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
- 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 sites (22 m wide, tarred)
- 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



OTHER AUTHORISATIONS

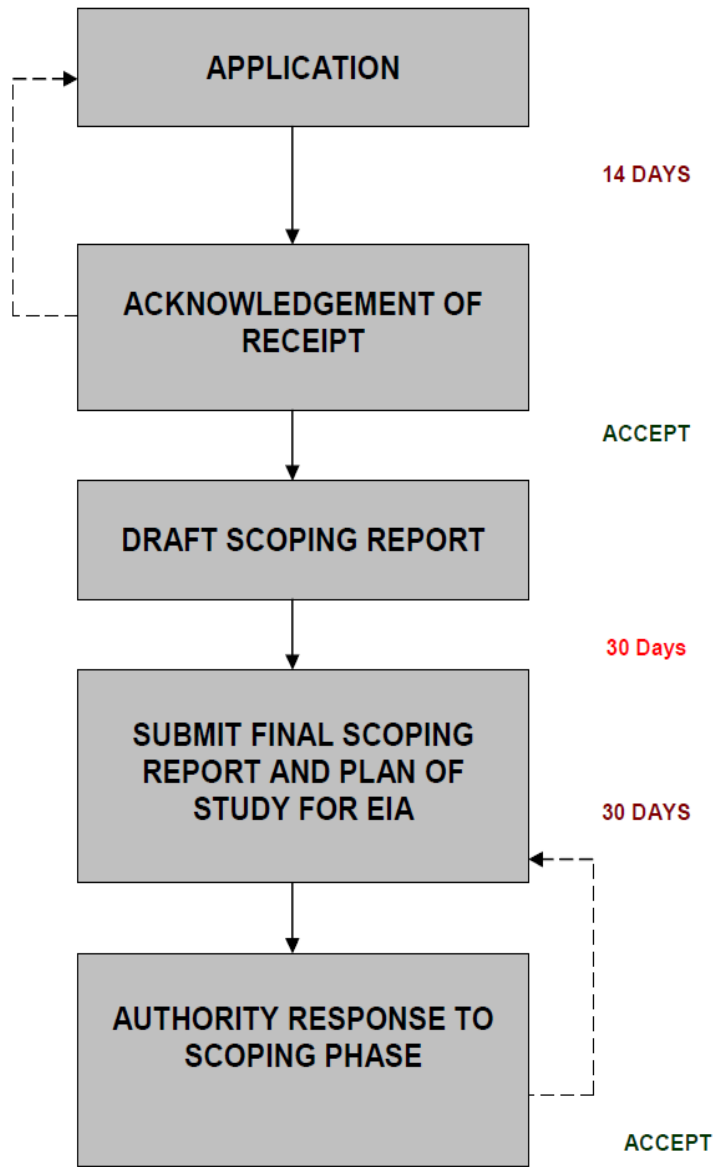
- >30 other permits and authorisations required (e.g. Waste Permits, Water Use Licenses, Air Quality Licenses, Heritage Permits, etc.) before construction can commence
- SAHRA authorisation:
 - Meetings held with SAHRA in Oct 2009 and July 2010
 - Detailed mitigation plan to be developed
- NNR licensing:
 - Once vendor has been appointed reports will be submitted;
 - 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
 - NNR licensing process is subject to public hearings



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

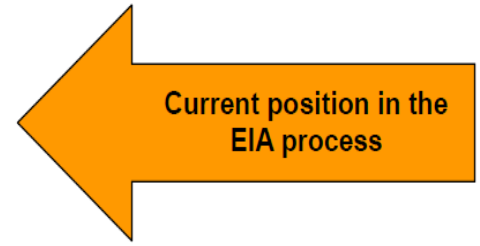
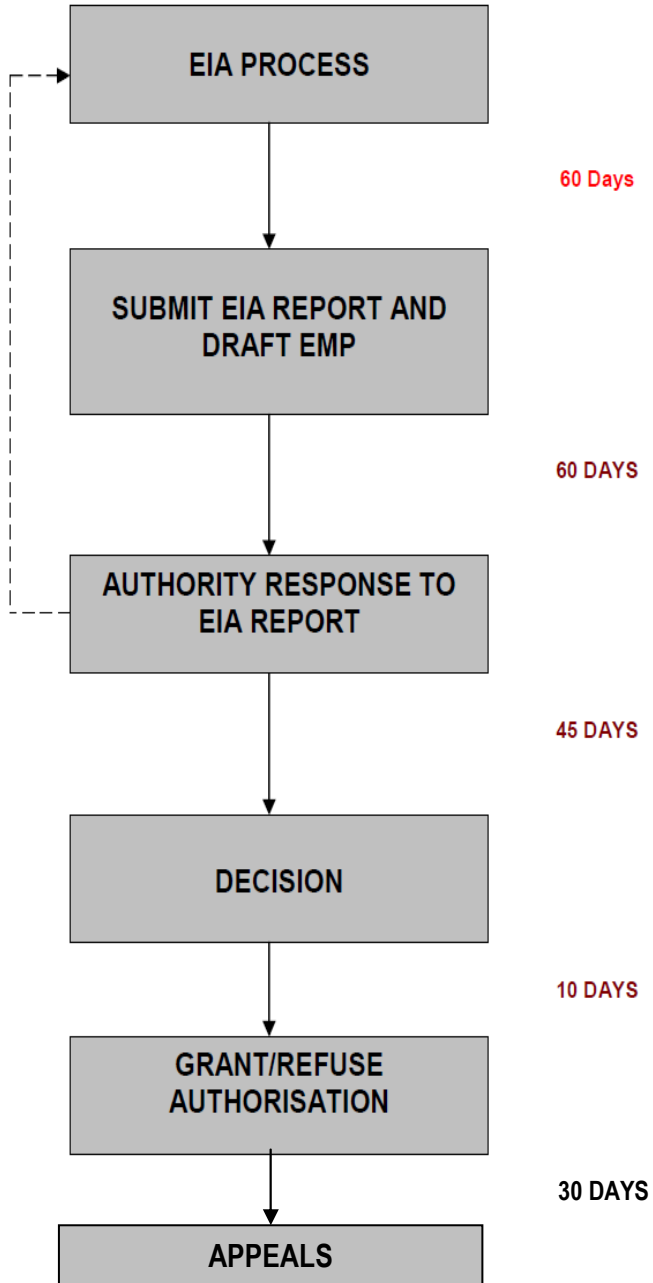
Mid 2009, Eskom considers amending application to include more than one power station. Eskom subsequently decided not to pursue the amendment

DEA approved the Scoping Report - November 2008

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

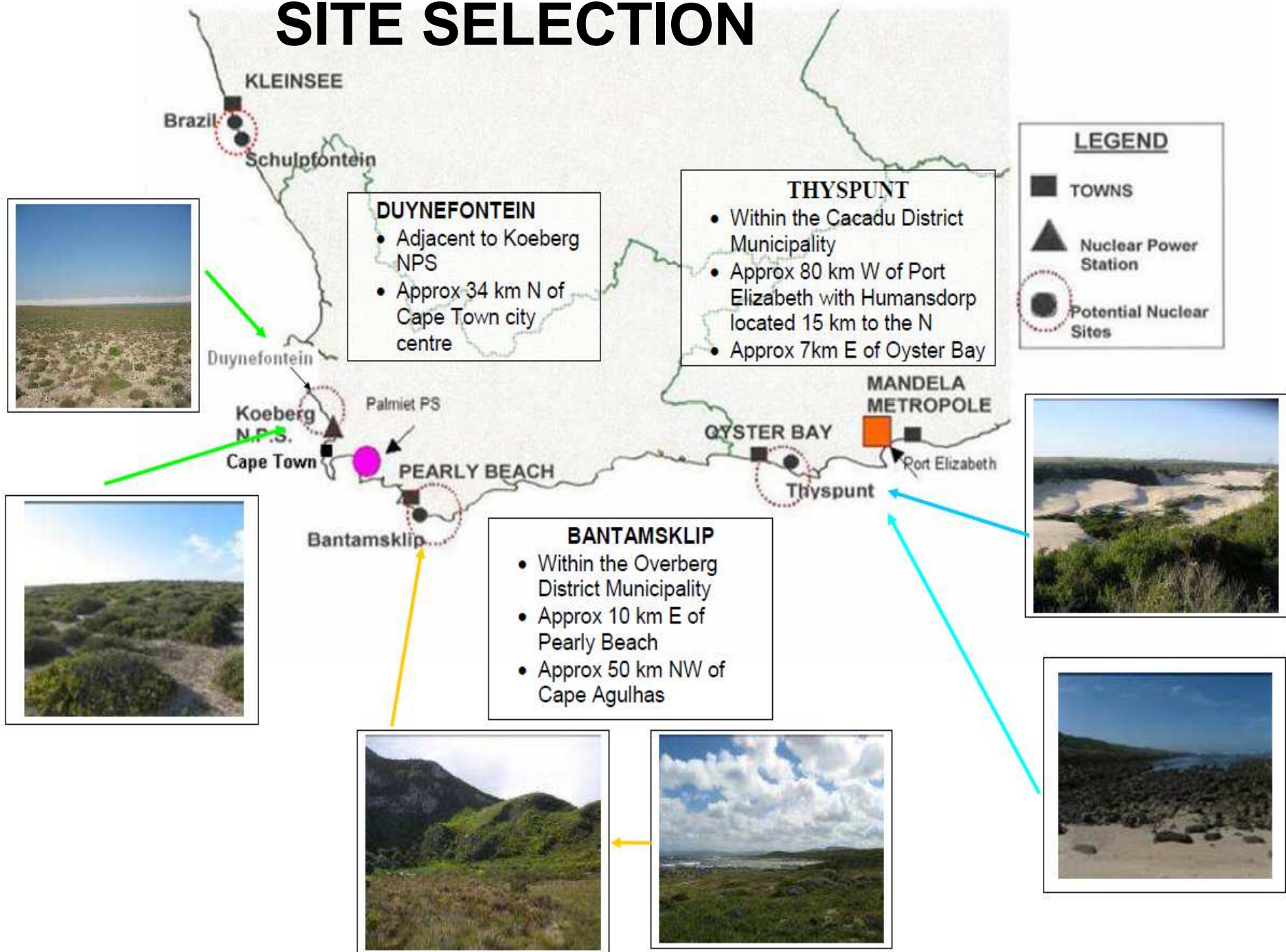
DEA approved Final PoS for EIA - January 2010

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

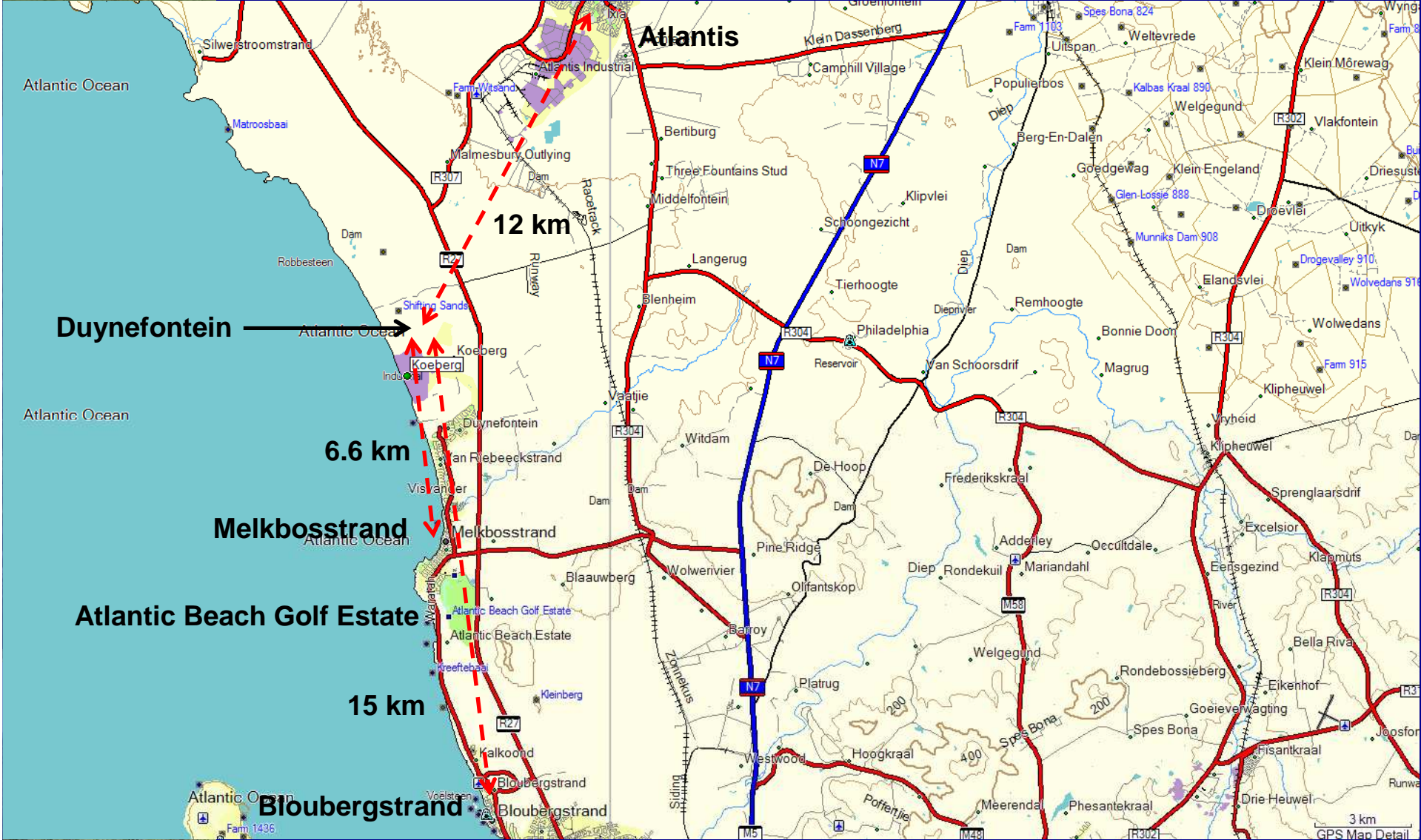
SITE SELECTION



DUYNEFONTEIN LOCALITY



DUYNEFONTEIN LOCALITY



BANTAMSKLIP LOCALITY



THYSPUNT 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, including cumulative impacts
- 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

