



Proposed Waterberg Coal Fired Power Stations

Strategic Overview

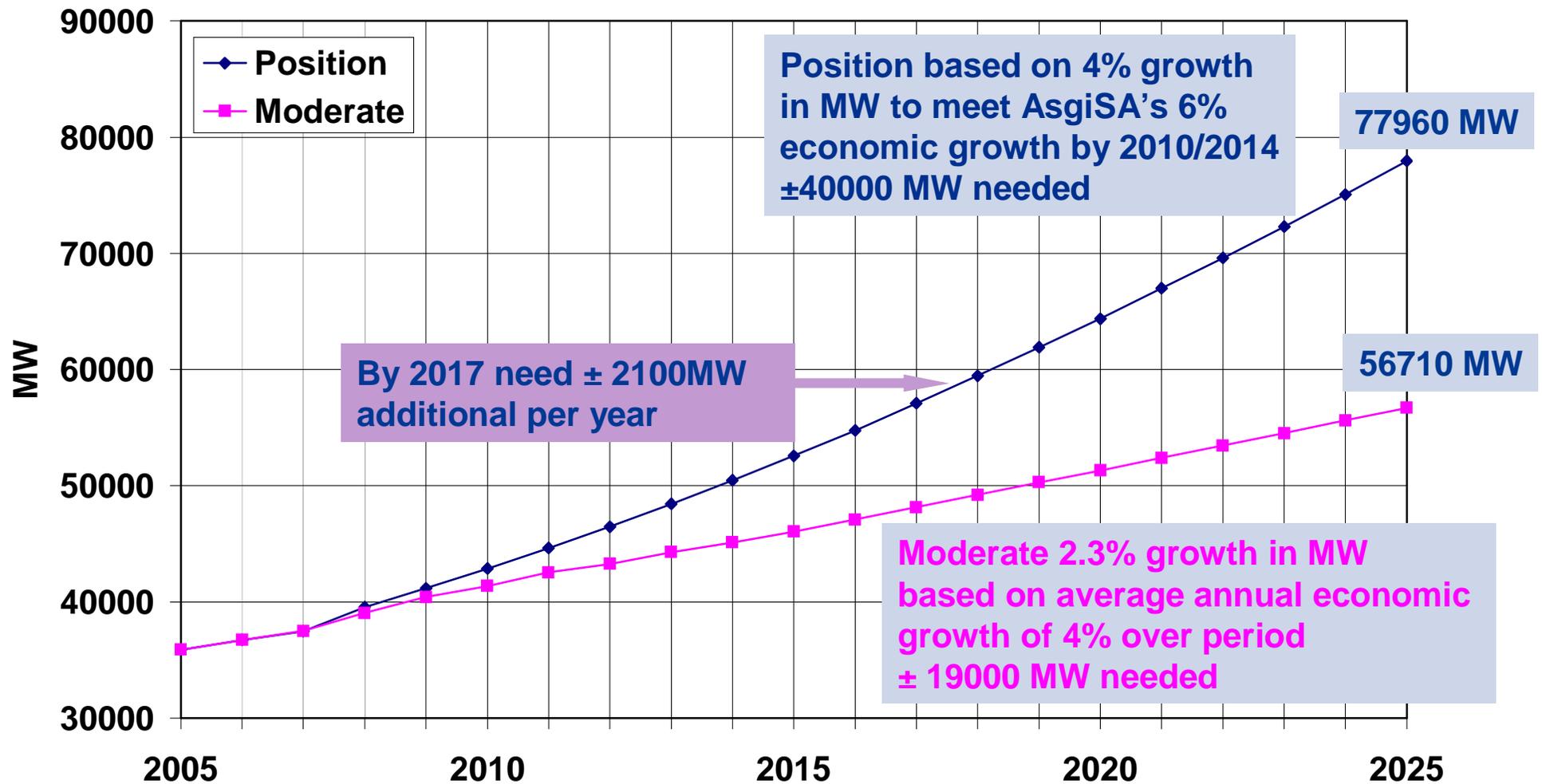
Public Participation Meeting
26 November 2008

Eskom Vision

Together building the powerbase for sustainable
growth and development

The Need – Long term forecasts

Long term forecasts - national + foreign



Electricity demand and supply – key challenges

- Demand for electricity continues to increase, resulting in South Africa approaching the end of its surplus generation capacity

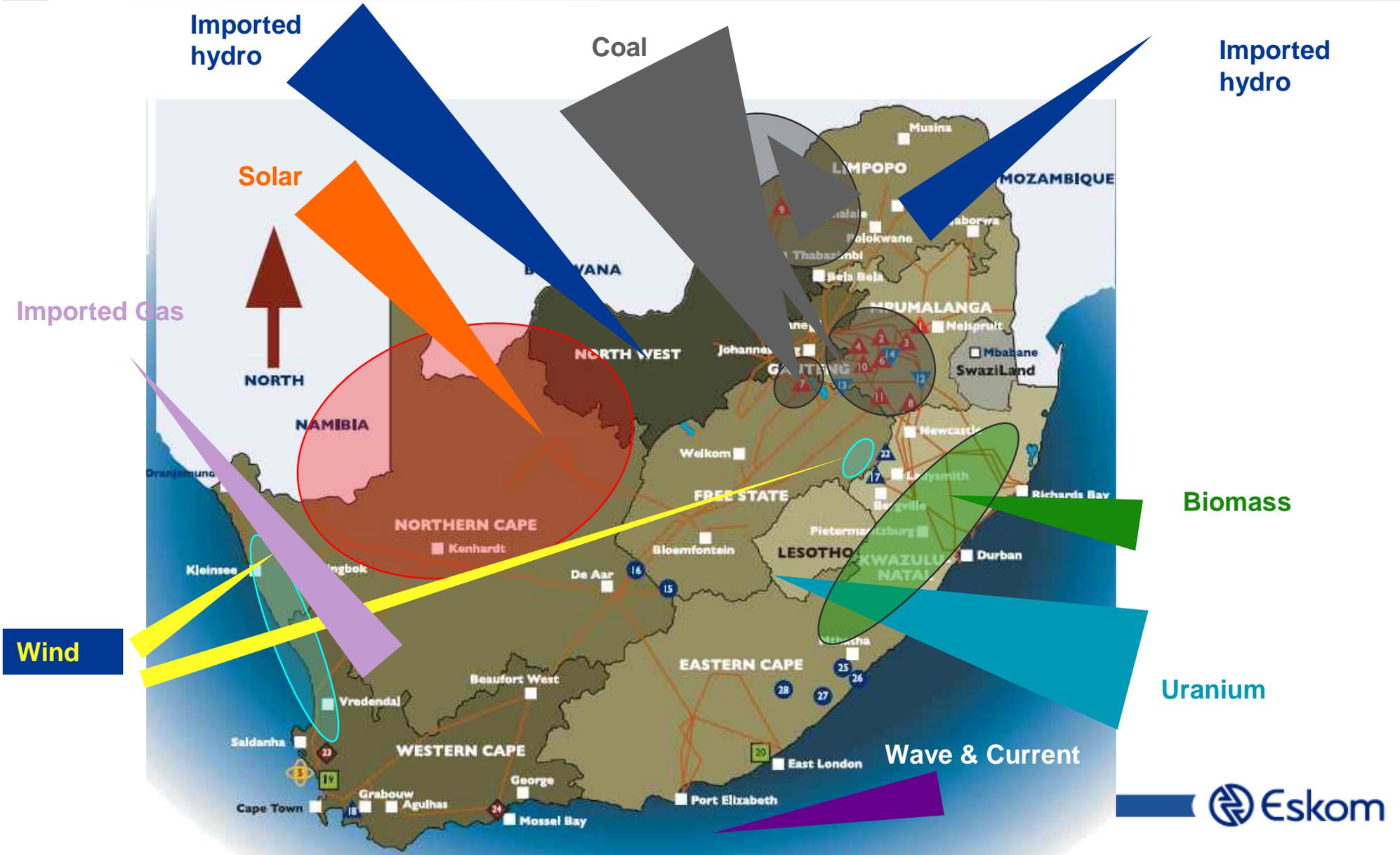
1st challenge: Avoiding mismatch between demand and supply

- Excess capacity - stranded resources
- Capacity shortage - constrained economic growth

2nd challenge: Correct choice of capacity to be constructed. The available options differ dramatically in terms of:

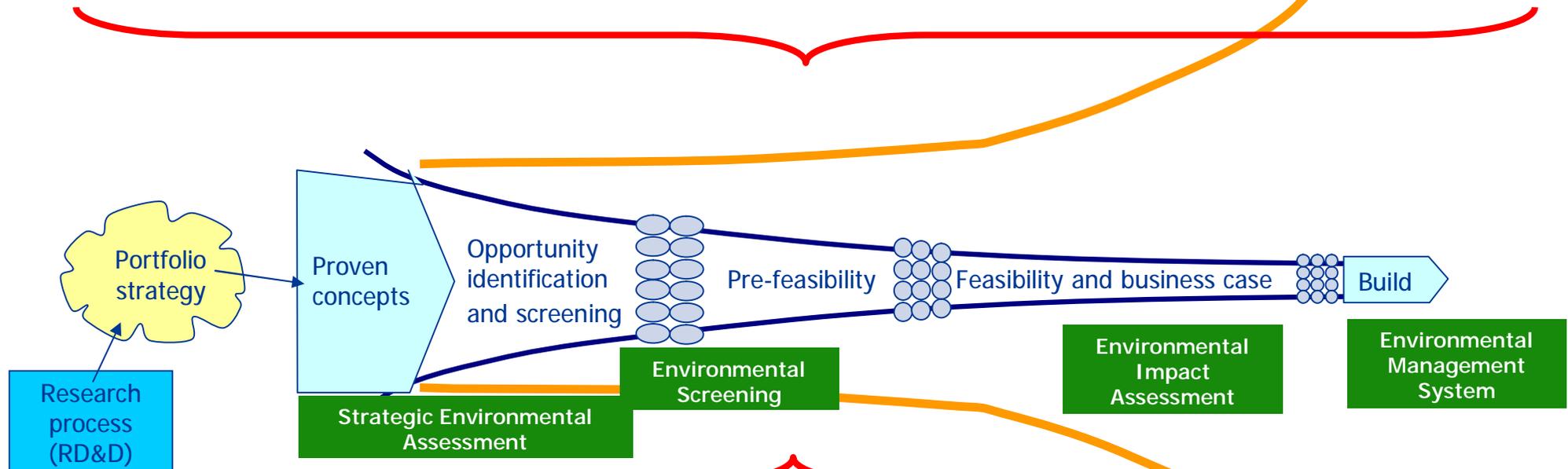
- Cost (construction and operating)
- Lead time to construction
- Environmental impact
- Operating characteristics (for example: peaking, baseload)

Then, to understand the Energy Opportunities & Constraints



How are choices made regarding alternatives

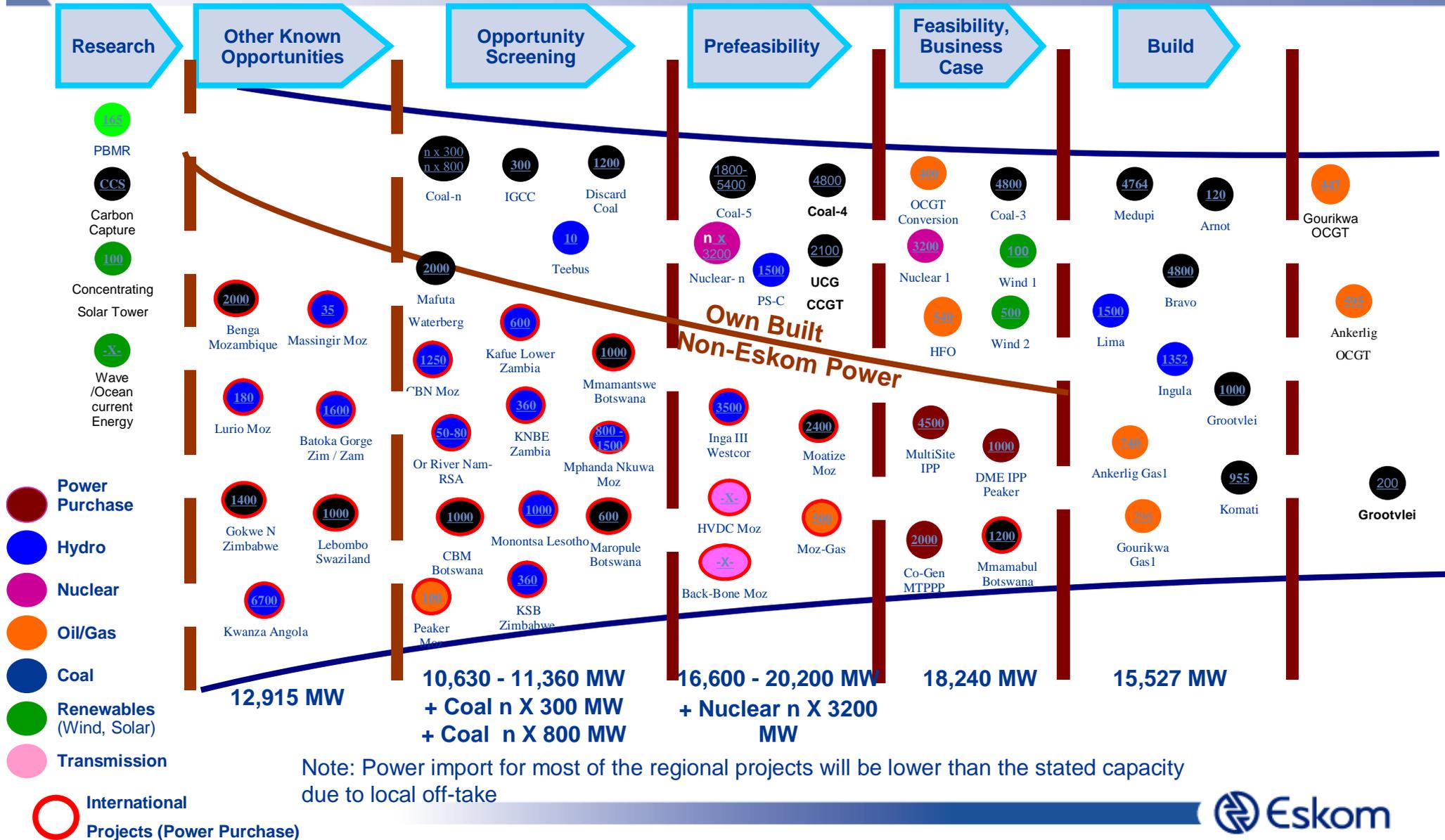
South African Policy, Plans and Legislation



Eskom Decision-making Criteria:

- Technical (including lead time)
- Safety & health
- Environmental (greenhouse gases, particulates, SO_x, NO_x, water, land)
- Economic (gross domestic product, fiscus)
- Other risks (delay, cost overruns, underperformance, liabilities)
- Cost and financial risk
- Strategic fit (market, partners, skills)
- Social (employment, households)
- Transmission impacts

PDD Capacity Projects Funnel



Regulatory processes

Environmental Impact Assessment

- Eskom is developing options to supply the electricity need.
- The EIA is an important step in determining the viability of a specific option.
- The EIA is on the critical path (in terms of the schedule) in developing a power station.
- This EIA is for two coal fired power stations of approximately 5400 MW capacity each.
- A separate EIA will be undertaken for the required transmission lines, the two processes will run in parallel as far as possible.

Other authorisations

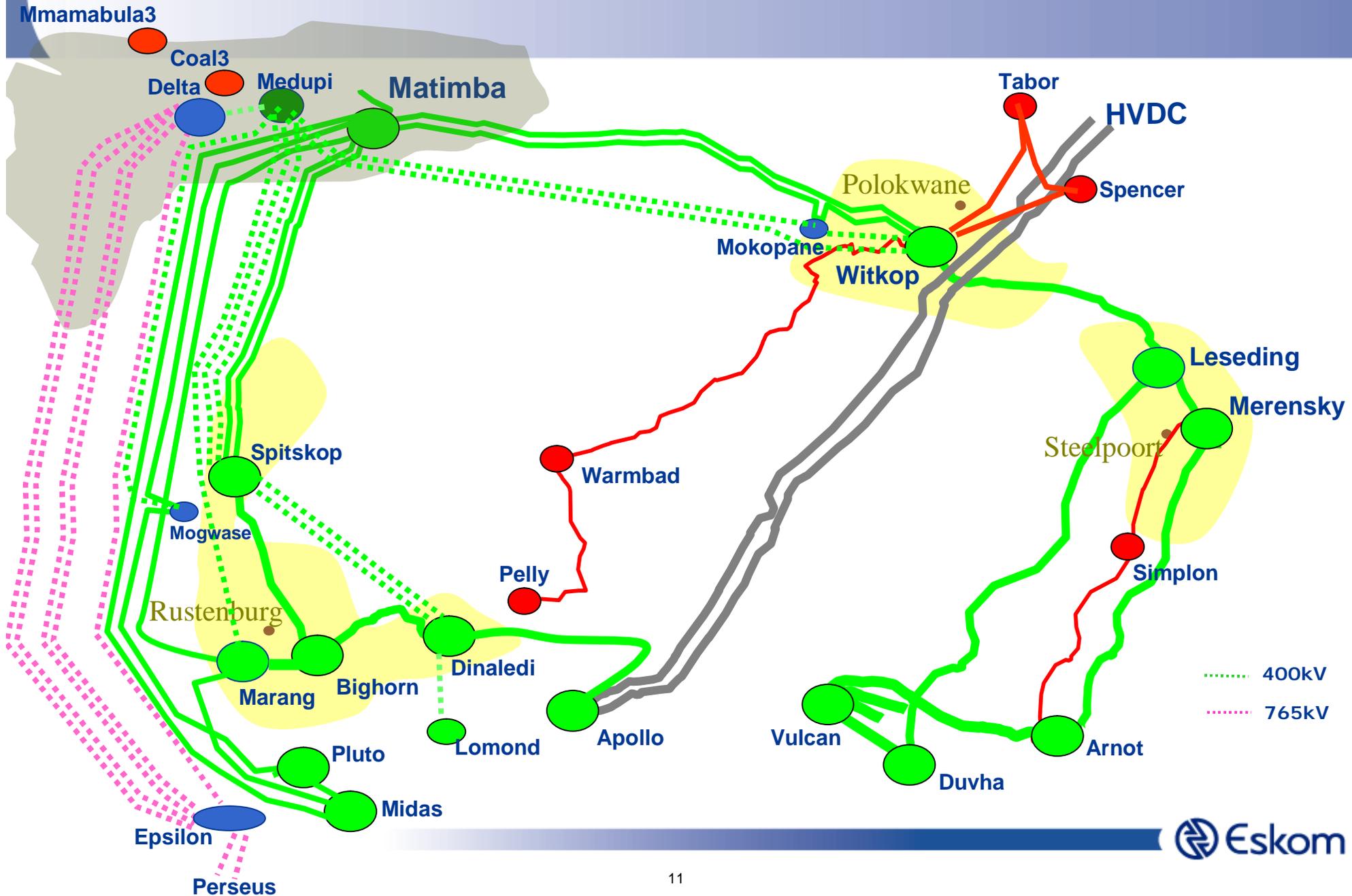
- Applications for authorisations and permits required from other Authorities - for example with respect to water, land use zoning, generating license - will be made at the appropriate stage during the project

Strategic Summary

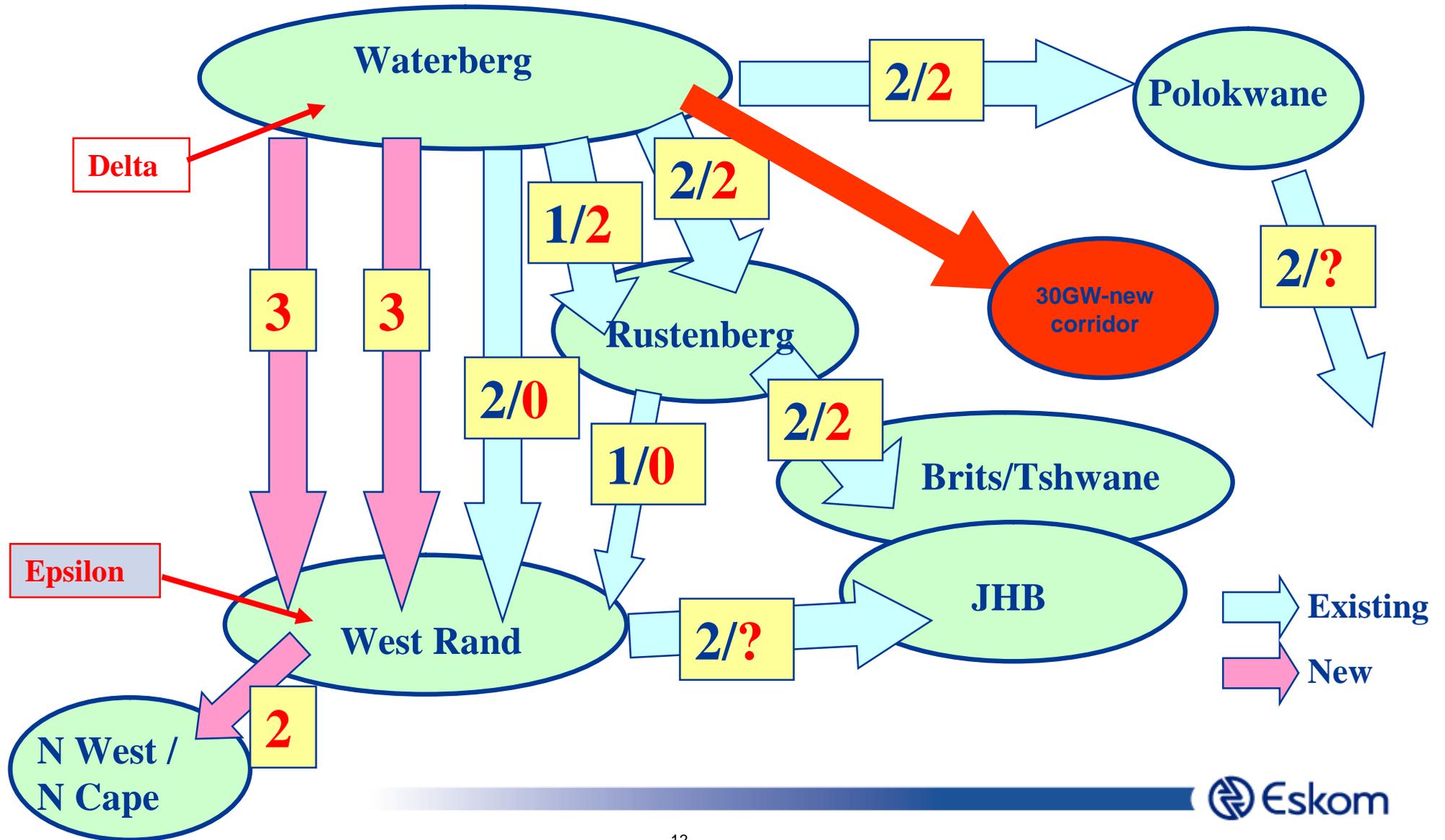
- **40 000 MW + additional generating capacity needed up to 2025, this trend continues after 2025.**
- **In addition to the existing approved base load stations additional base load power stations need to be constructed.**
- **Coal 3 and Coal 4 are developed as options for base load coal fired power stations in the Waterberg, each with a capacity of up to 5400MW. The decision to build will be made by Eskom Board, taking the environmental and other inputs into account.**
- **Three sites have been identified close to the Waterberg coal fields. These sites will be evaluated from an Environmental perspective. The aim is to complete feasibility studies for two power stations on the two most suitable of the three sites, considering environmental and various other issues.**
- **The approval by Eskom Board and the timing of the construction of Coal 3 & Coal 4 is dependant on various ever changing factors, amongst other the actual Electricity growth and the feasibility of these projects in relation to other available options.**

Transmission

WATERBERG COALFIELD: EXISTING Tx PLAN



Overview of Waterberg Corridors



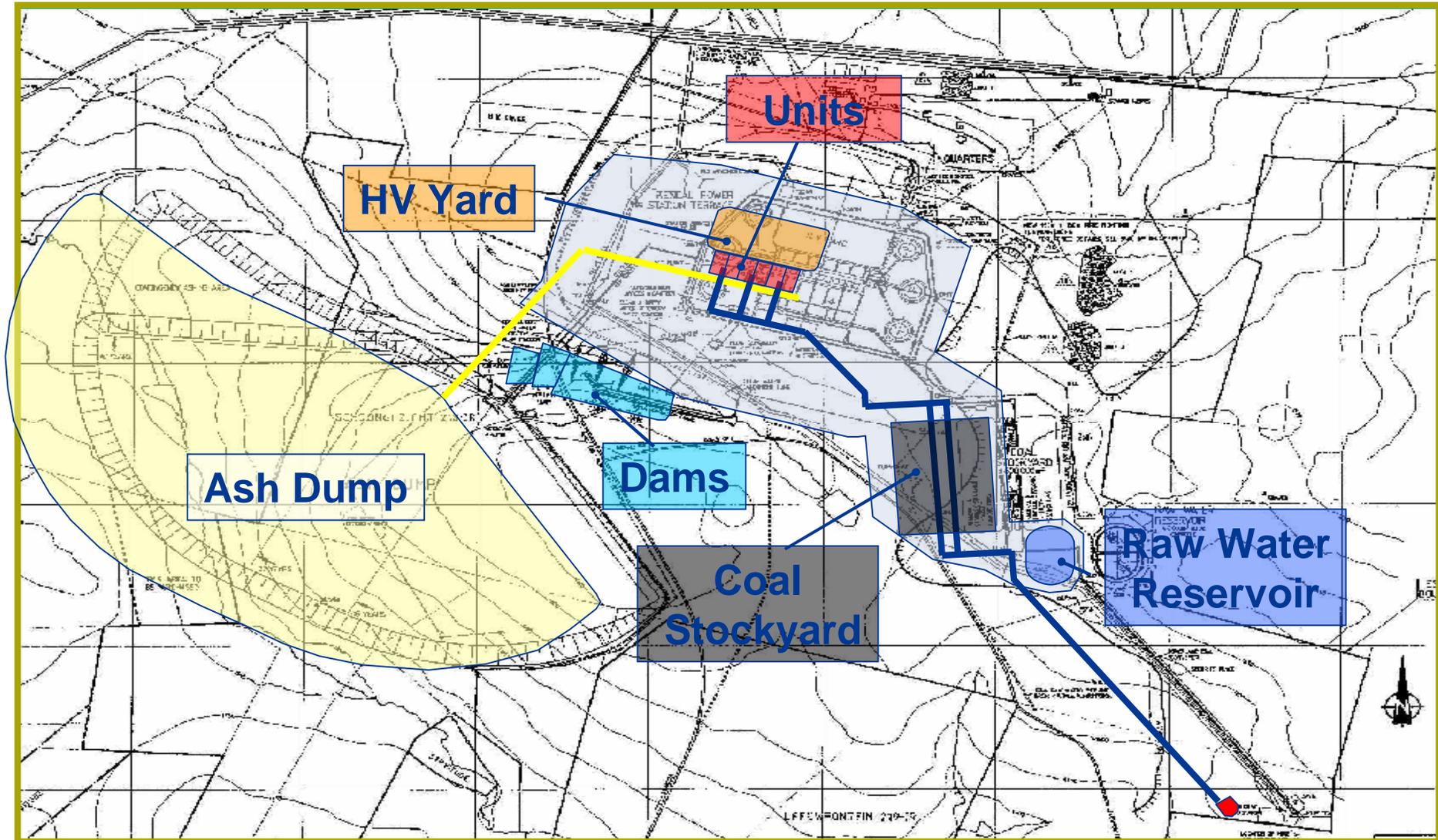
Power Station

Expected Technical Parameters

- 6 x 900 MW (nominal) = 5400 MW
- Pulverised fuel (pf) fired, based on the newer more efficient super critical technology as used for Medupi/Kusile or higher
- Dry cooled - note, photos show direct dry cooled. (Indirect dry cooling employing cooling towers will also be evaluated)
- Reduction of Sulphur dioxide - Flue Gas Desulphurization will be installed
- Reduction of Nox - Low NOx burners will be used
- Either Bag filters or precipitators will be used to control fine particulate matter



Typical Site Layout





THANK YOU

