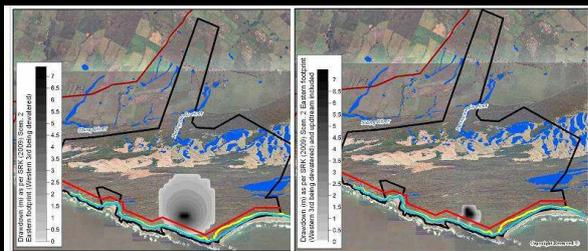




## Dewatering impacts:

Modelled draw-down scenarios (after SRK 2009)

Impact would affect coastal seeps and potentially the Langefonteinvlei



Slide 9

## Additional information needed to inform mitigation design for addressing draw-down impacts

- Quantification of wetland hydrology to establish critical wetland / groundwater thresholds
- Refinement of drawdown model based on accurate location options and sizing of the selected Nuclear-1
- Use of membrane or other technology to reduce draw-down effect

Monitoring programme currently underway to inform these issues

Slide 10

## Mitigation measures would include:

- Establishment of effective setback areas that take cognisance of surface and subsurface processes, based on new data
- Design of measures to allow artificial recharge of remnant coastal seeps

Slide 11

## Options for the transport and storage of spoil

- Transport of spoil over mobile dune associated with high, largely unmitigable impacts:
  - Disturbance and degradation of wetlands and associated dune systems
- Transport to St Francis Bay as piped slurry potentially mitigable
- Marine disposal

Slide 12

## Major impacts that would be associated with infrastructure

- Impacts associated with transmission lines (within the site)
- Impacts associated with access roads (within and to the site)

Slide 13 

## Impacts associated with the proposed transmission lines

- East-west physical fragmentation of interconnected terrestrial / wetland ecosystems
- Localised disturbance during construction
- Persistent degradation resulting from maintenance roads

Slide 14 

## Mitigation against transmission line impacts

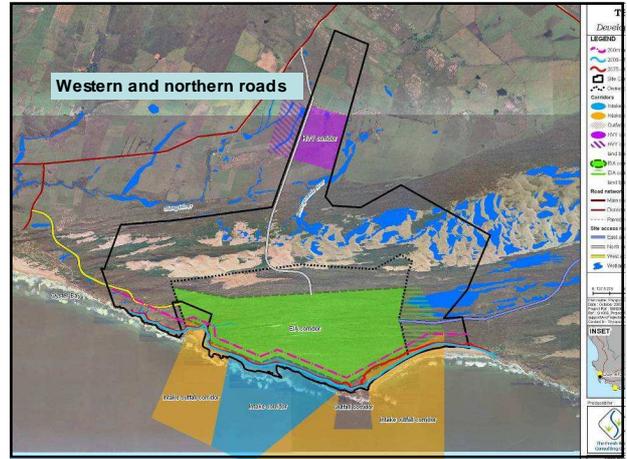
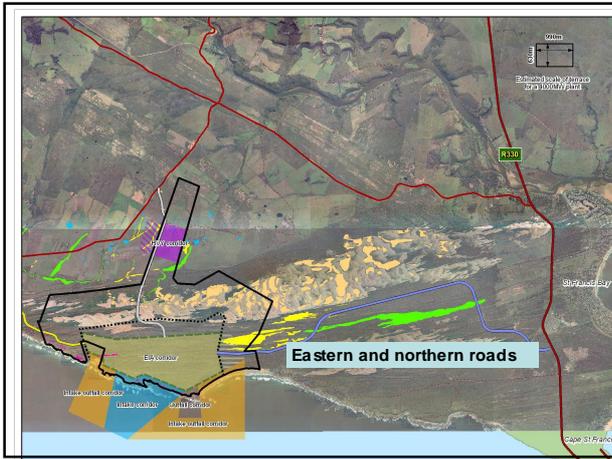
- Partial re-alignment
- Selection of least impacting pylon configurations
- No maintenance roads through mobile dunes

Slide 15 

## Impacts associated with the proposed access routes

- 3 routes initially assessed
- Mitigation measures generally need to address:
  - Fragmentation at the level of the dune system and the site
  - Hydrological connectivity and impacts
  - Changes in flow patterns within and between wetlands
  - Degradation through ongoing disturbance
  - Changes in dune dynamics (????)

Slide 16 



### Mitigation against impacts associated with access roads

- Northern road not recommended - (EIR concurs)
- Eastern and Western access routes
  - re-align to avoid seeps and coastal forest pockets
  - bridge wetlands

Slide 19

### Despite mitigation measures...

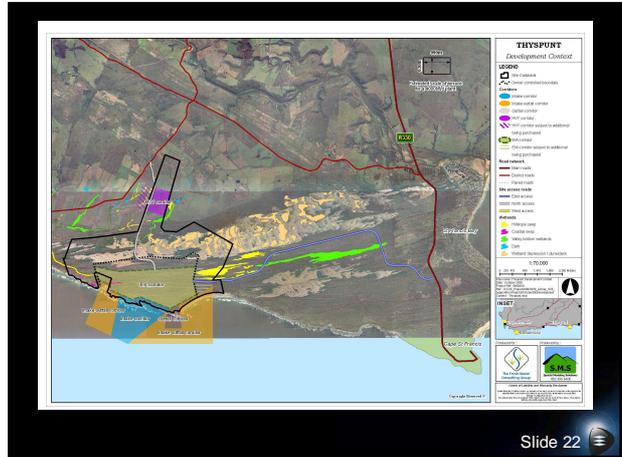
- Cumulative impacts likely to result in long-term degradation of presently unimpacted wetland ecosystems, and loss of an unquantified area of coastal seeps
- **Assessed as of high negative significance**

Slide 20

## Mitigation against cumulative impacts

- Establishment of the present site as a conservation area, outside of construction platforms
  - Trust fund to assure long term conservation beyond the life-span of the Nuclear-1 development
  - No additional development phases
  - Expansion of the conservation area to include all erven along the proposed eastern road, thus greatly extending the conserved and actively managed area of mobile dune and wetland mosaic
- This measure would only be effective if implemented in the short-term, before further development of the system to the east of the site takes place.

Slide 21



Slide 22

Overall assessment: still negative

### BUT

Given increased confidence in mitigation efficacy that assures conservation of:  
 duneslack wetlands  
 the Langefontein systems  
 reduced impacts to coastal seeps

PLUS conservation of extended dunefield and eastern valley bottom wetlands

### Concluded:

Development of Nuclear-1 could have positive significance compared to the likely outcome of a "no development" alternative

Slide 23

## BUT

Confidence in mitigation measures needs to be increased:

– Quantification of surface / groundwater interactions and thresholds in the Langefonteinvlei

– Refinement of the draw-down model

(current monitoring programme addressing these information gaps)

Slide 24

The End

Slide 25 