

# Carbon Capture and Storage in South Africa: Mandate and Progress

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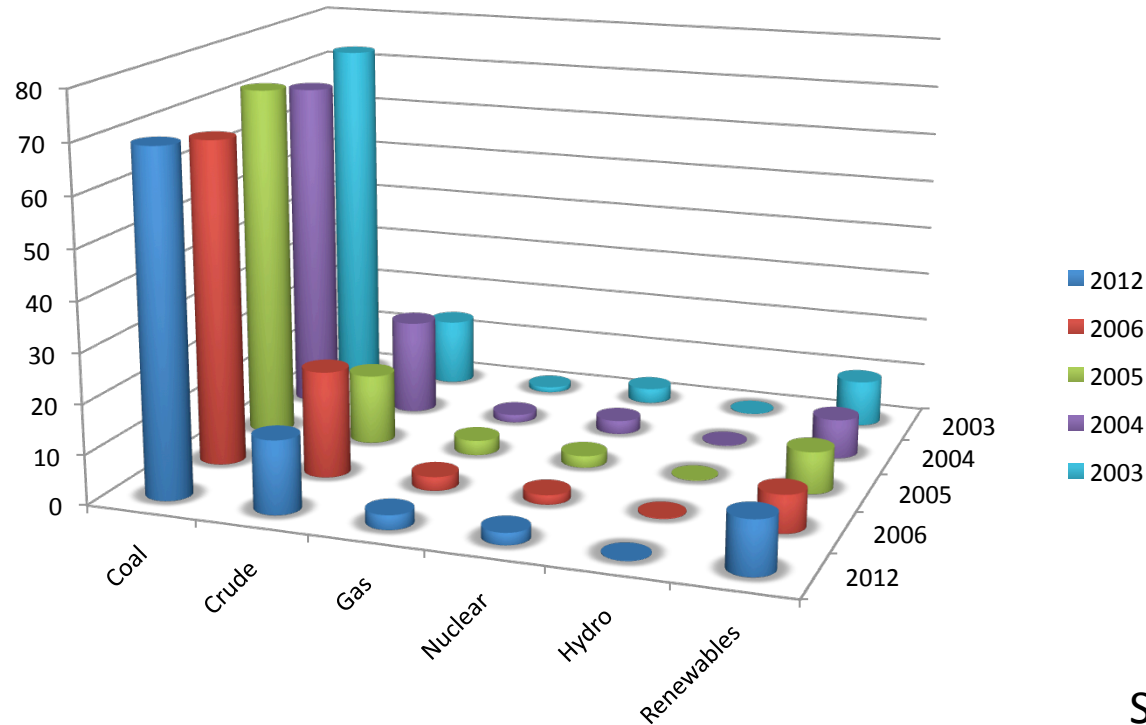
Manager: Pilot CO<sub>2</sub> Storage Project



**Off-Shore CO<sub>2</sub> Storage Workshop**

Austin, April, 2016

# WHY - CO2 Emission Mitigation



SA reliant on Fossil Fuels

Primary Energy ~90%

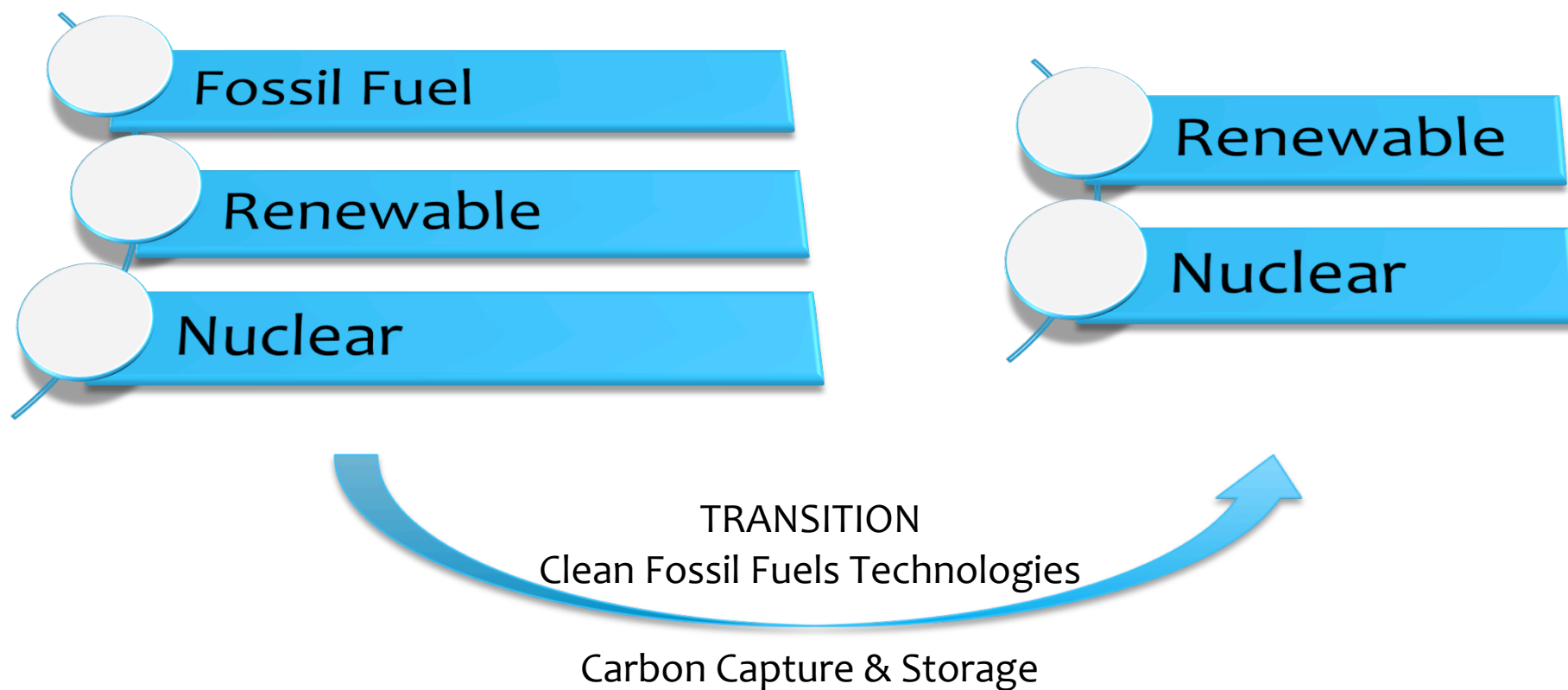
Coal ~72%

*Digest of Southern African Energy Statistics, 2009, Department of Energy*

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# Only Three Types of Energy

## Clean Fossil Fuels as a Transition Technology



# Mandate



- ☒ CCS is part of the Long Term Mitigation Scenarios  
Department of Environmental Affairs
- ☒ CCS is one of South Africa's eight Near-term Priority Flagship Programmes of the *National Climate Change Response White Paper*, October, 2011
- ☒ Cabinet endorsed the South African CCS Road Map during May, 2013
- ☒ CCS is included in the National Development Plan 2030

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# South African CCS Institutional Capacity



- Department of Energy  
Policy and Regulatory Regimes
- Department of Environmental Affairs  
Implementation of the *National Climate Change Response White Paper*
- Inter-Departmental Task Team for Carbon Capture and Storage
- South African Centre for Carbon Capture and Storage  
Technical development of Carbon Capture & Storage in South Africa
- Other Institutions;
  - *University Witwatersrand*
  - *University Pretoria*
  - *University Western Cape*
  - Council for GeoScience – Repository for geological information

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# South African CCS Road Map

**2004:** CCS Potential  
**Done / Yes**

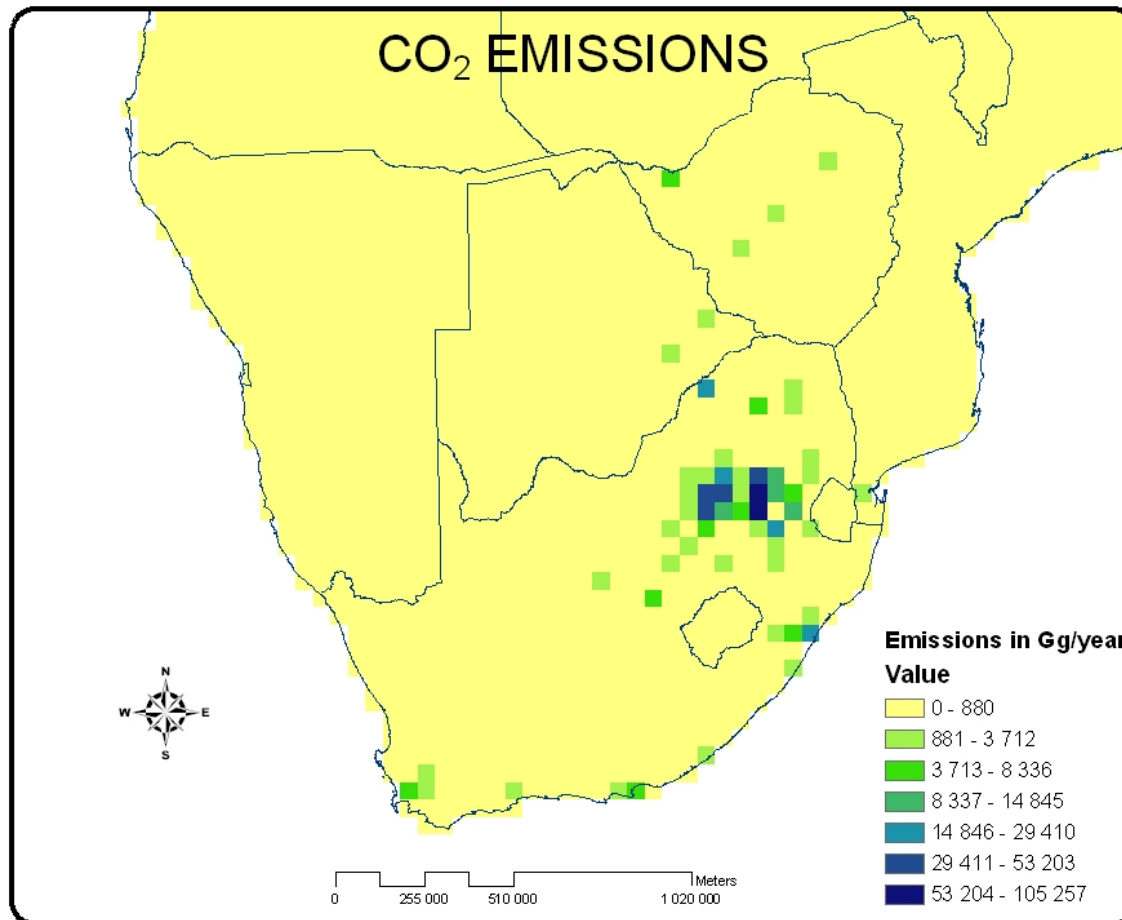
**2010:** Carbon Dioxide Storage Atlas  
**Launched by Minister Oct2010**

**2017:** Pilot CO2 Storage Project  
**Current Phase Underway – 10,000's t/yr**

**2020:** Integrated Demonstration Plant  
**Planned 100,000's tonnes/year**

**2025:** Commercial Operation  
**Planned millions tonnes/year**

# Sources of Carbon Dioxide Emissions



SOURCE: CSIR/DME

Need for a Capture  
Pilot Plant being  
accessed.

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Council for Geoscience



# ATLAS

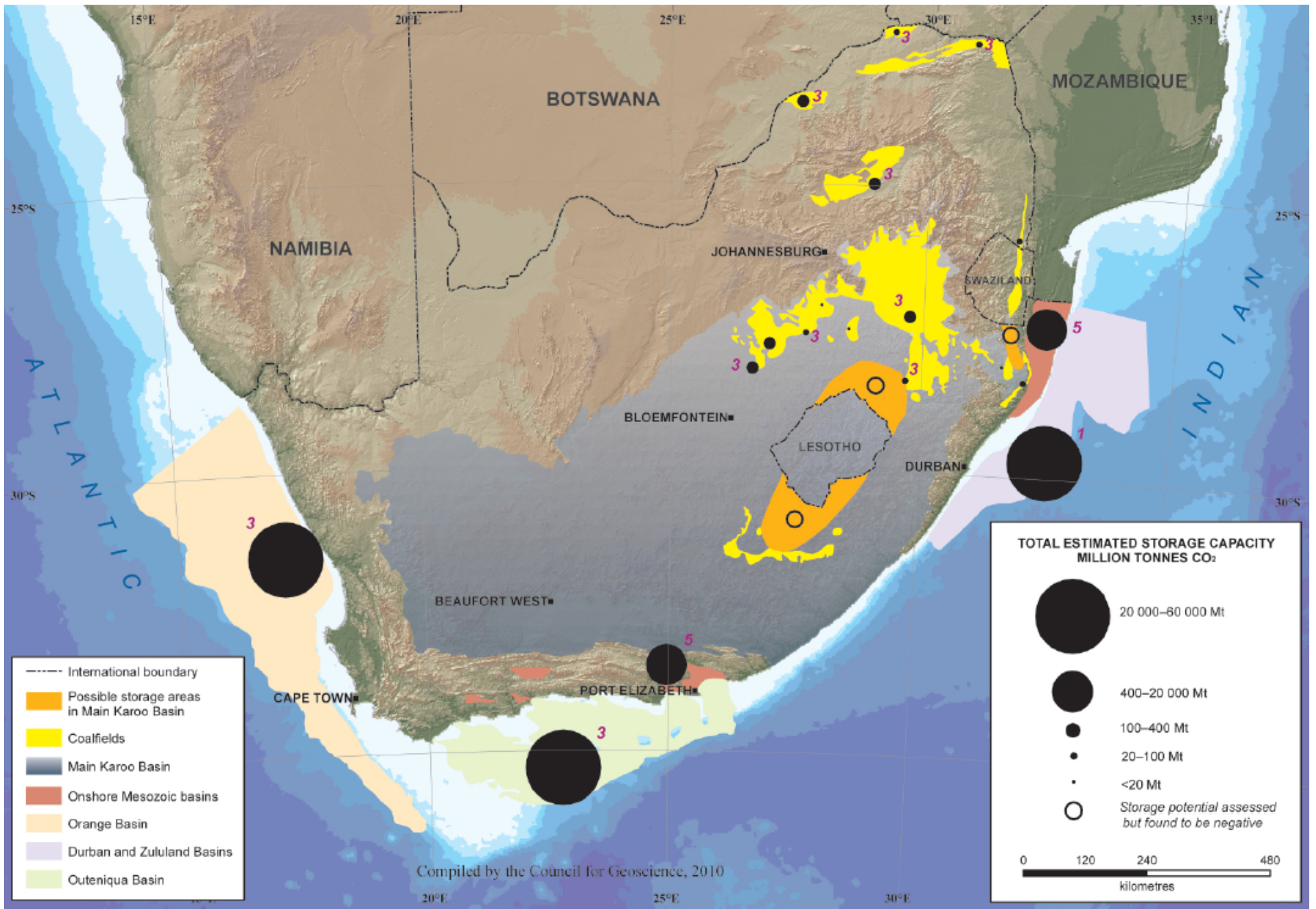
on  
geological storage of carbon dioxide in South Africa



saneri  
South African National Energy Research Institute  
Pty Ltd







# Pilot CO<sub>2</sub> Storage Project



- Demonstrate safe and secure CO<sub>2</sub> storage in South African conditions [“Proof of Concept”]
- Increase the South African human and technical capacity
- Raise awareness of the potential importance of CCS
- Platform for government to develop a South African CCS legal and regulatory environment

FOCUS ON ZULULAND ON-SHORE BASIN

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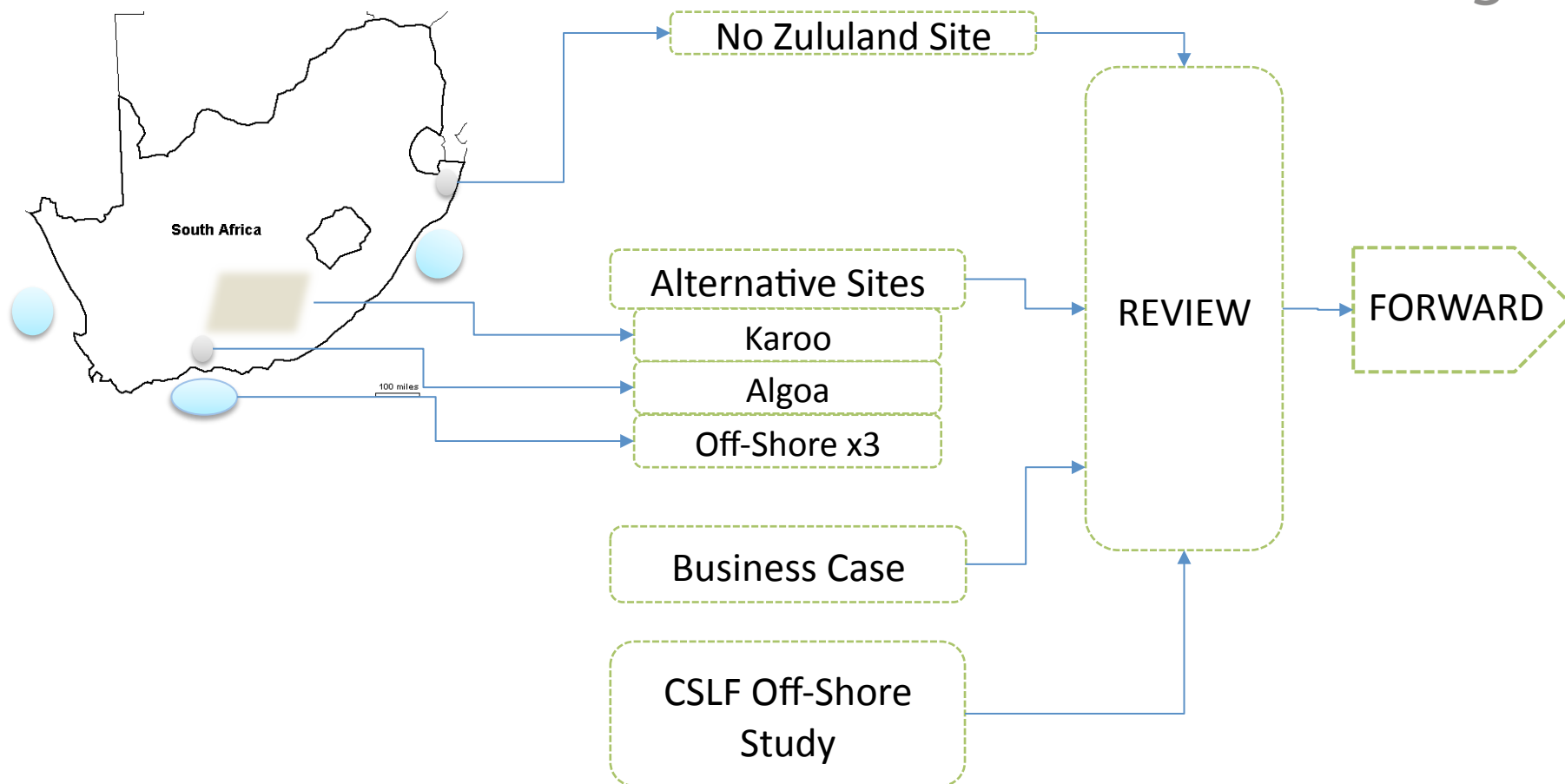


# Stakeholder Engagement

- National Government
  - *(DMR, DBE, SALGA, DWA, GCIS & DAFF);*
- Provincial Government
  - *(DMR, RMDEC, DEDTEA, DWA & COGTA);*
- Local Government
  - *(SALGA, SRVLM, NMBM, CDM & UMDM);S*
- Environmental NGOs
  - *(Greenpeace, Earthlife, Groundworks, WESSA);*
- Organised Labour
  - *(NUM, AgriSA);*
- National House Traditional Leaders *[Parliament]*
- Amakhozi *[Local Chiefs]*



# Contingency: No Pilot Site in Zululand



# General



- **Regulatory:**
  - CCS regulations under development
  - Current regulations sufficient for exploratory phase
  
- **Transport:**
  - Techno-Economic Study indicated that pipeline transport costs were not a major factor
  
- **Economics:**
  - Levels of prospective Carbon Tax insufficient to “pay” for CCS
  - Additional “incentives” required
  
- **Capacity Building:**
  - Bursary scheme
  - International co-operation

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