



# The South African Perspective on CCS

WORKSHOP ON MODALITIES AND PROCEDURES FOR  
CCS UNDER THE CDM

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South African Centre for  
**carbon capture  
& storage**



*South African Centre for*  
**carbon capture  
& storage**

## Core Parties



**s a n e r i**  
South African National Energy Research Institute  
(Pty) Ltd



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British High Commission  
South Africa



**NORWEGIAN EMBASSY**



## Participants



**ALSTOM**

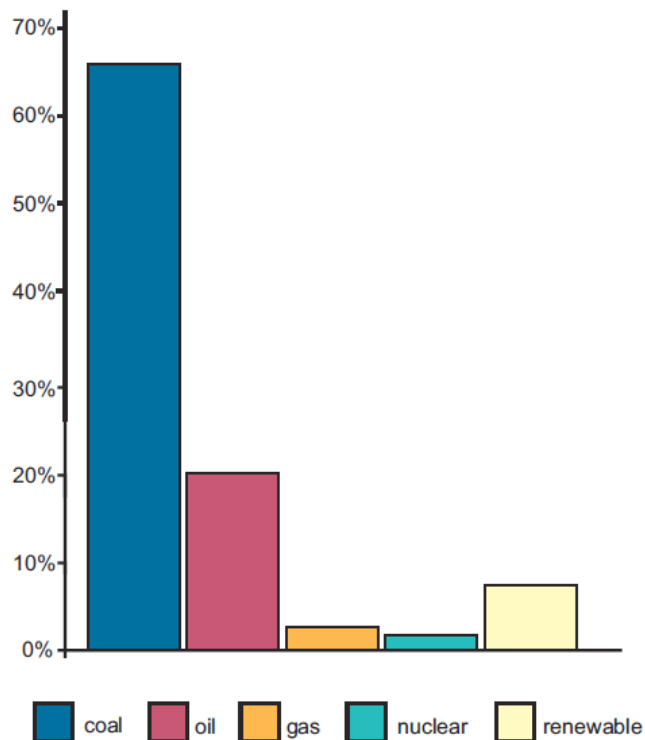


**exxaro**

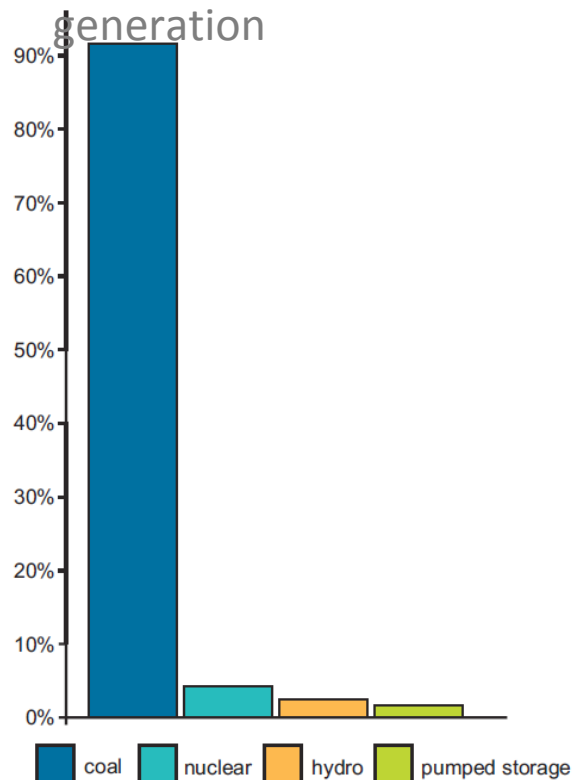


# South Africa's energy context

Total primary energy  
consumption



Electricity  
generation





# South Africa: committed to addressing climate change

“Developing countries are ready to play their part in reducing global emissions, but obviously rich countries have to take the lead”

“With financial and technological support from developed countries, South Africa for example will be able to reduce emissions by 34% below business as usual by 2020 and 42% by 2025”

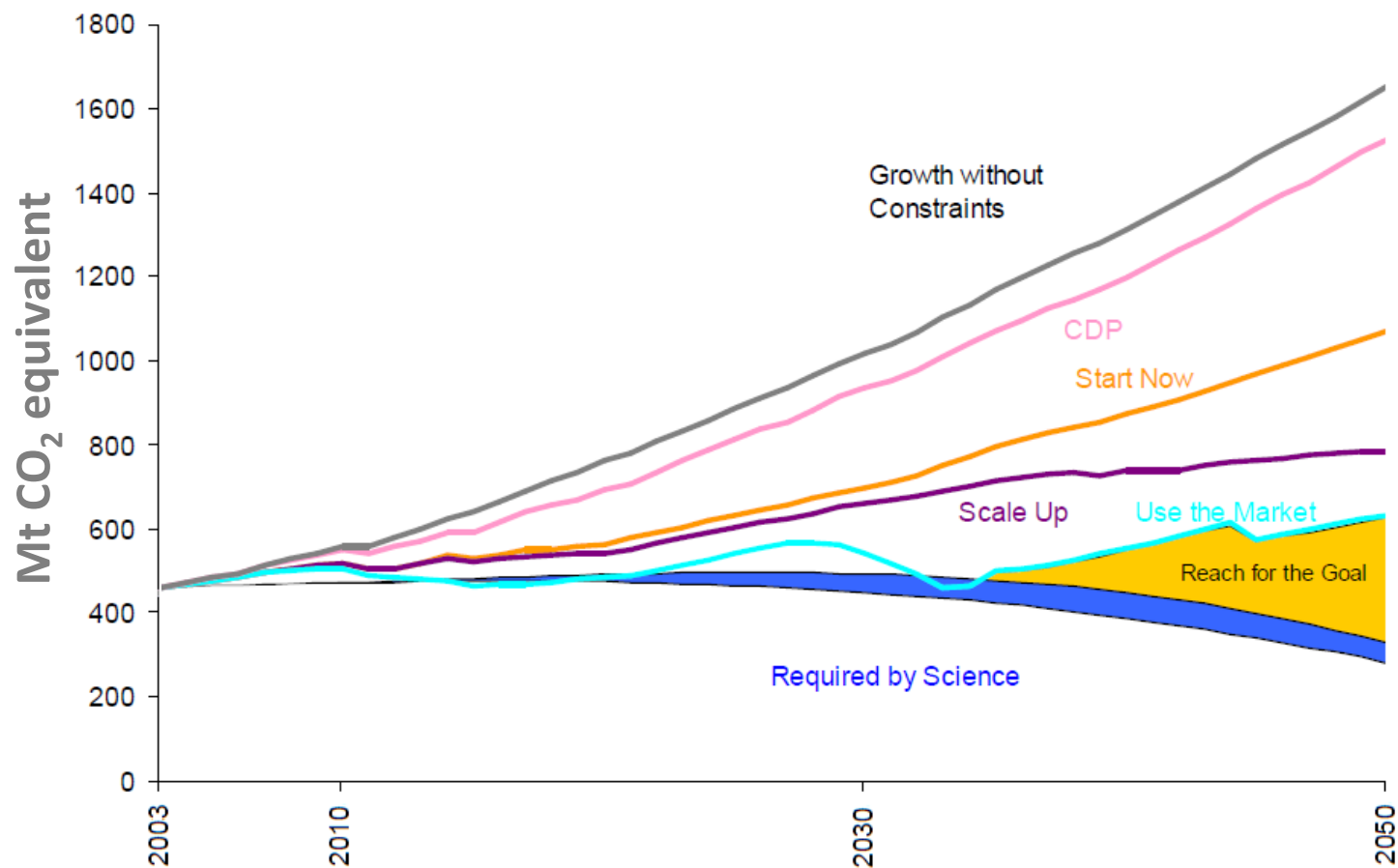
“We want a complete and legally binding agreement”

**- President Jacob Zuma, Copenhagen 2009**

COP15  
COPENHAGEN



# Long-term mitigation scenarios



Source: SA  
long-term  
mitigation  
scenarios



## CCS in South Africa: 2004

- 2004 – South African CCS Roadmap prepared
- 2004 – High level assessment of CCS potential in South Africa completed



# South African CCS Roadmap

2004

2010

2016

2020

2025

*CCS Potential*

*Storage Atlas*

*Test Injection*

*Demonstration*

*Commercial*

x 10,000t

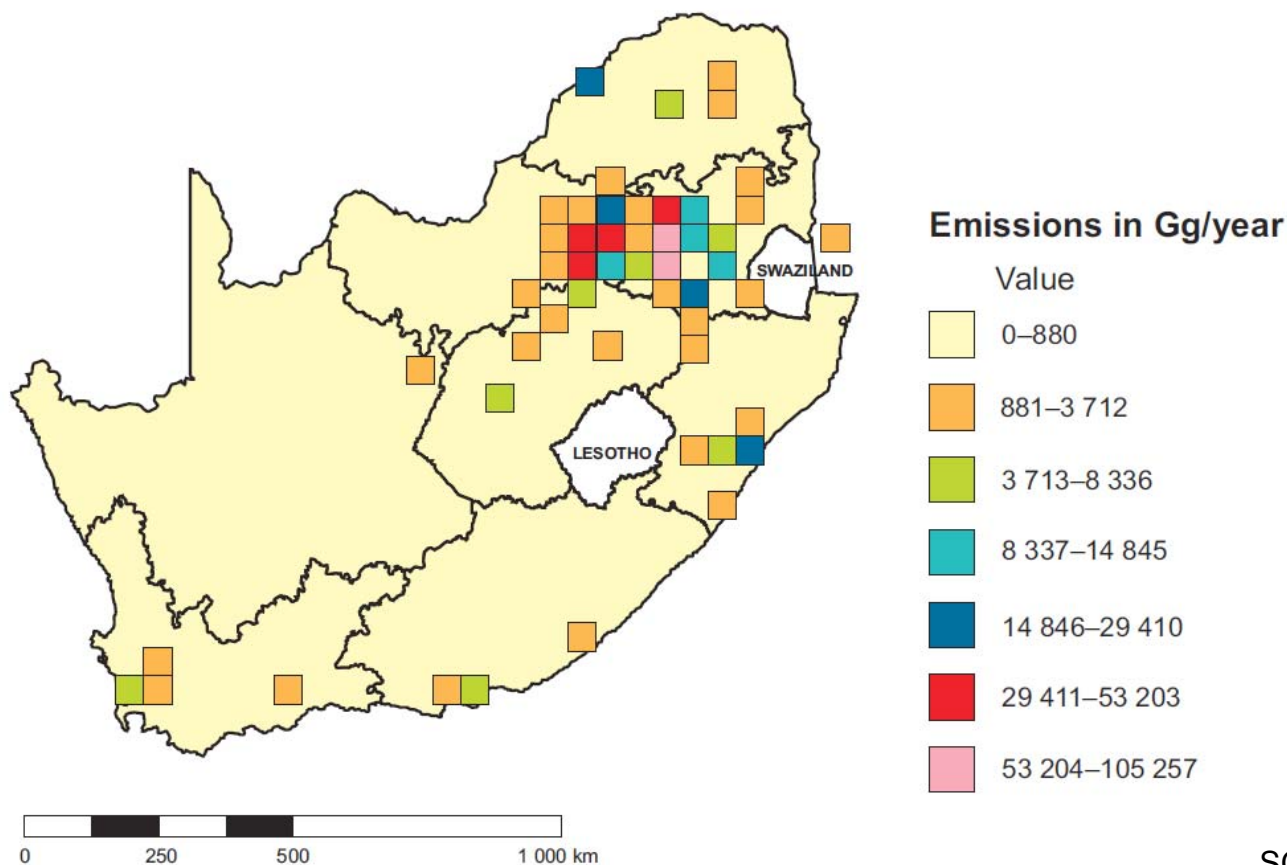
└─→ x 100,000t

└─→ x 1,000,000t

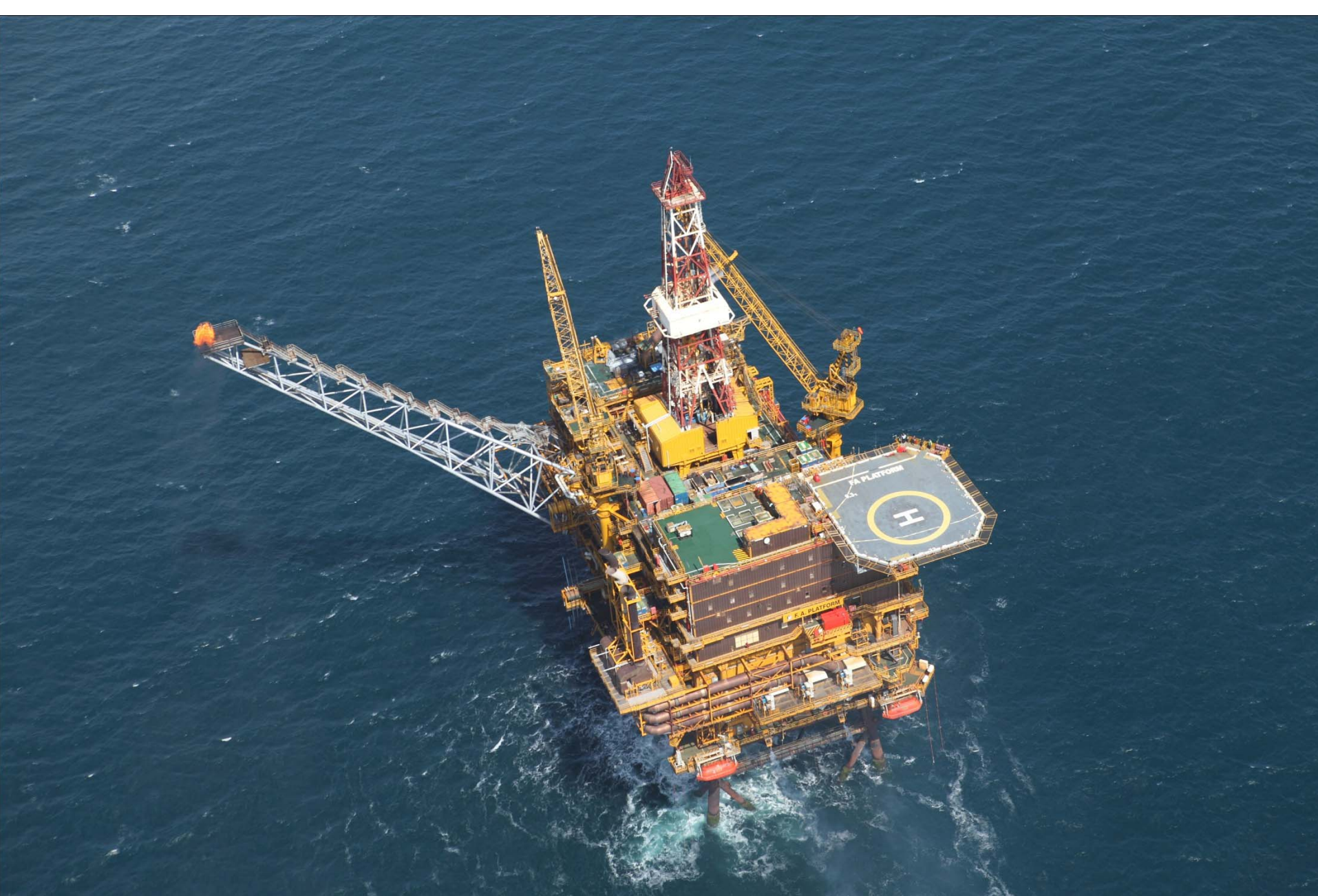




# South African CO<sub>2</sub> Emissions







SOURCE: PetroSA



# CCS in South Africa: 2008 - 2010

- 2008 – A CCS ready requirement placed on Kusile power plant
- 2009 – The South African Centre for CCS (SACCCS) launched by the Minister of Minerals and Energy
- 2009 – 1<sup>st</sup> CCS legal and regulatory workshop held in Johannesburg
- 2010 – The South African CO<sub>2</sub> Geological Storage Atlas launched by the Minister of Energy





Council for Geoscience

# ATLAS

on  
geological storage of carbon dioxide in South Africa



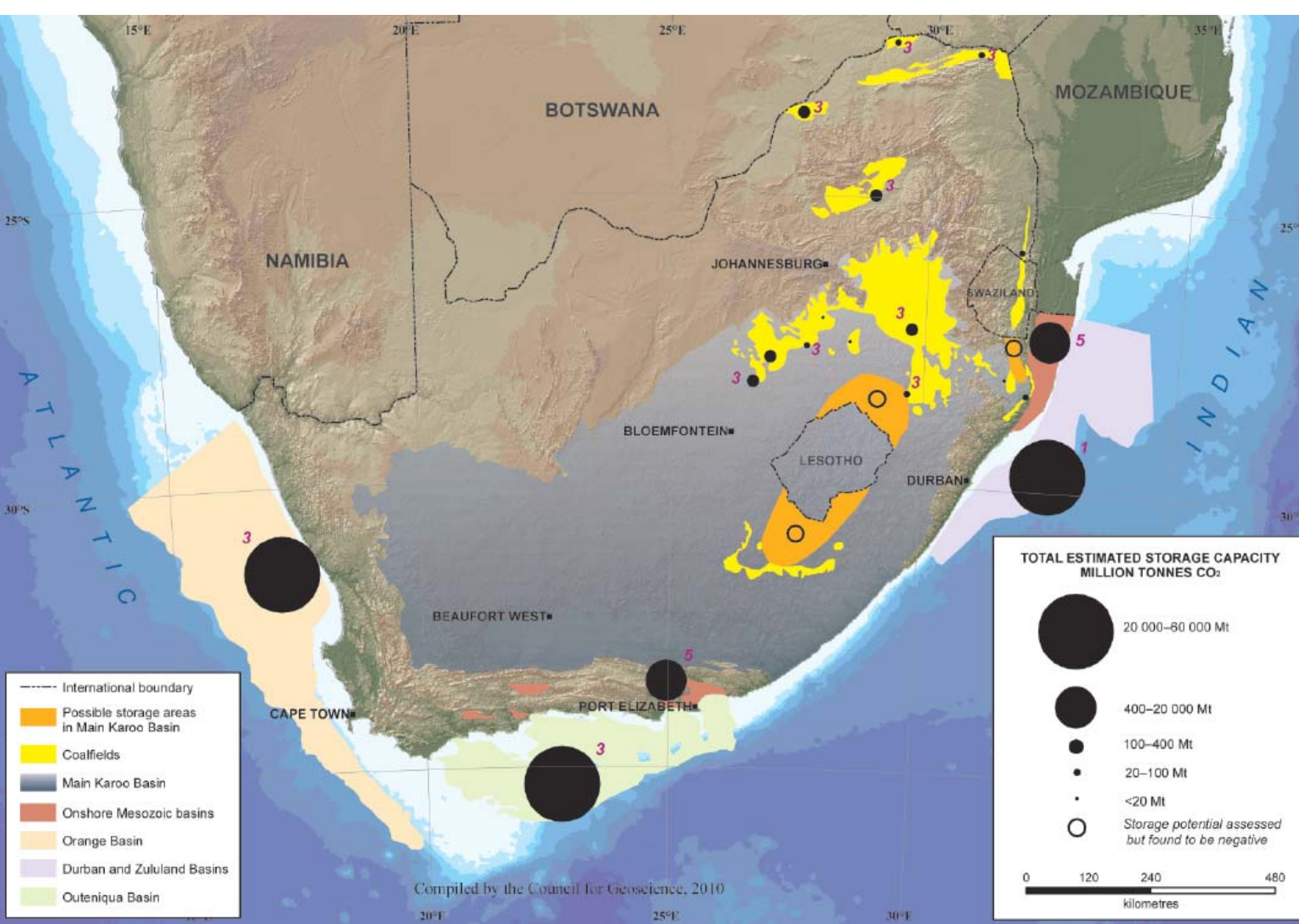
**sasol**  
*reaching new frontiers*



**s a n e r i**  
South African National Energy Research Institute  
9750 131









# CCS in South Africa: 2010

- 2010 – National Climate Change Response Green Paper highlights CCS legislative policy and regulatory framework as a key action area
- 2010 – South Africa submits an entry into the 1<sup>st</sup> International Energy Agency (IEA) Legal and Regulatory Review
- 2010 – The World Bank completes a review of CCS within the South African legal and regulatory environment



## CCS in South Africa: 2011

- 2011 – The Department of Energy officially incorporated CCS regulatory framework development in the 2011 work plan
- 2011 – 2<sup>nd</sup> CCS legal and regulatory workshop held in Johannesburg in conjunction with the IEA
- 2011 – South Africa submits an entry into the 2<sup>nd</sup> IEA Legal and Regulatory Review



# CCS in South Africa: 2011 onward

- 2011 – The South African Department of Energy will develop a CCS legal and Regulatory framework
- 2011 – COP 17 hosted in Durban
- 2011/12 – Development of a draft CCS legal and regulatory framework (for Ministers approval) is one of the 2011/2012 milestones in the Department of Energy's strategic planning
- 2011/12 – The draft legal and regulatory framework will then follow the standard legislative and policy making process





# South African CCS Roadmap

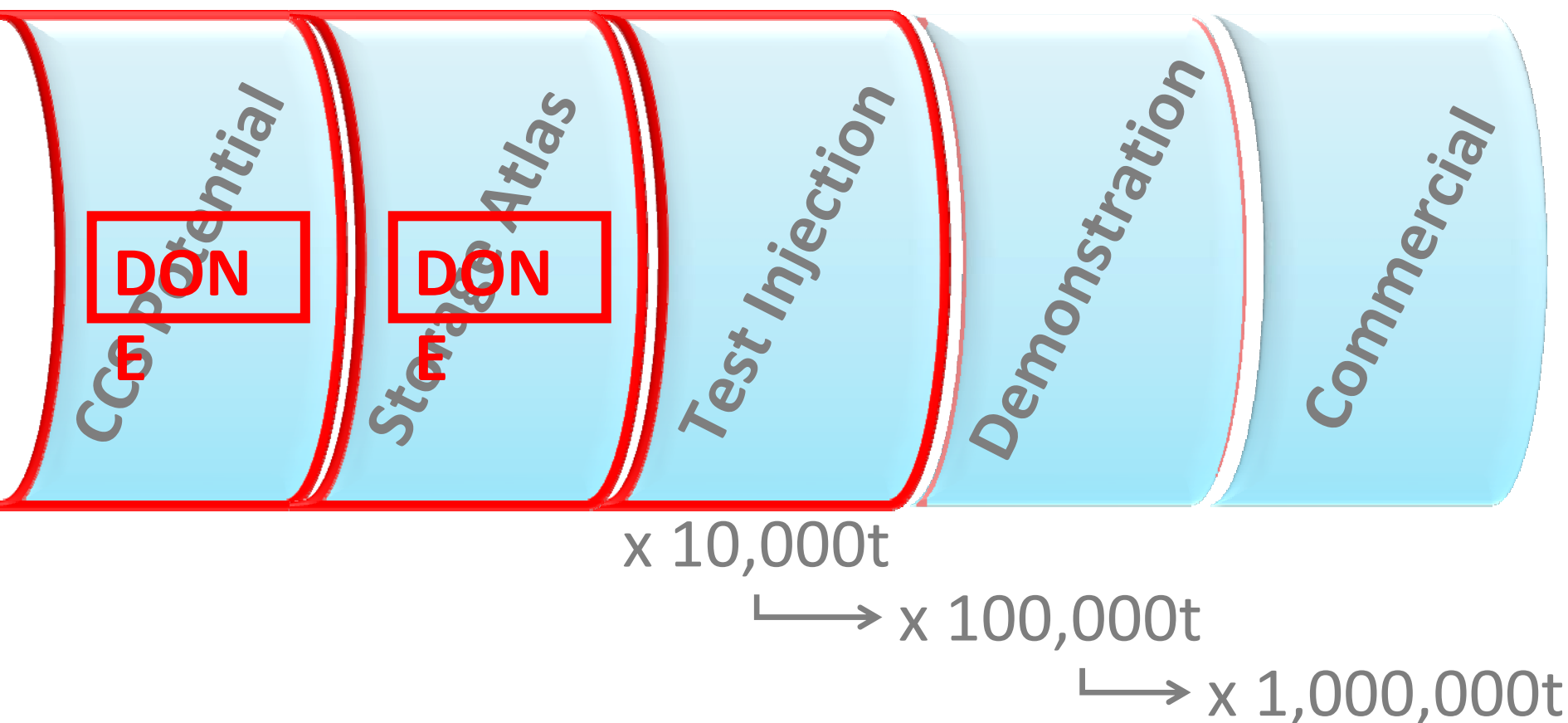
2004

2010

2016

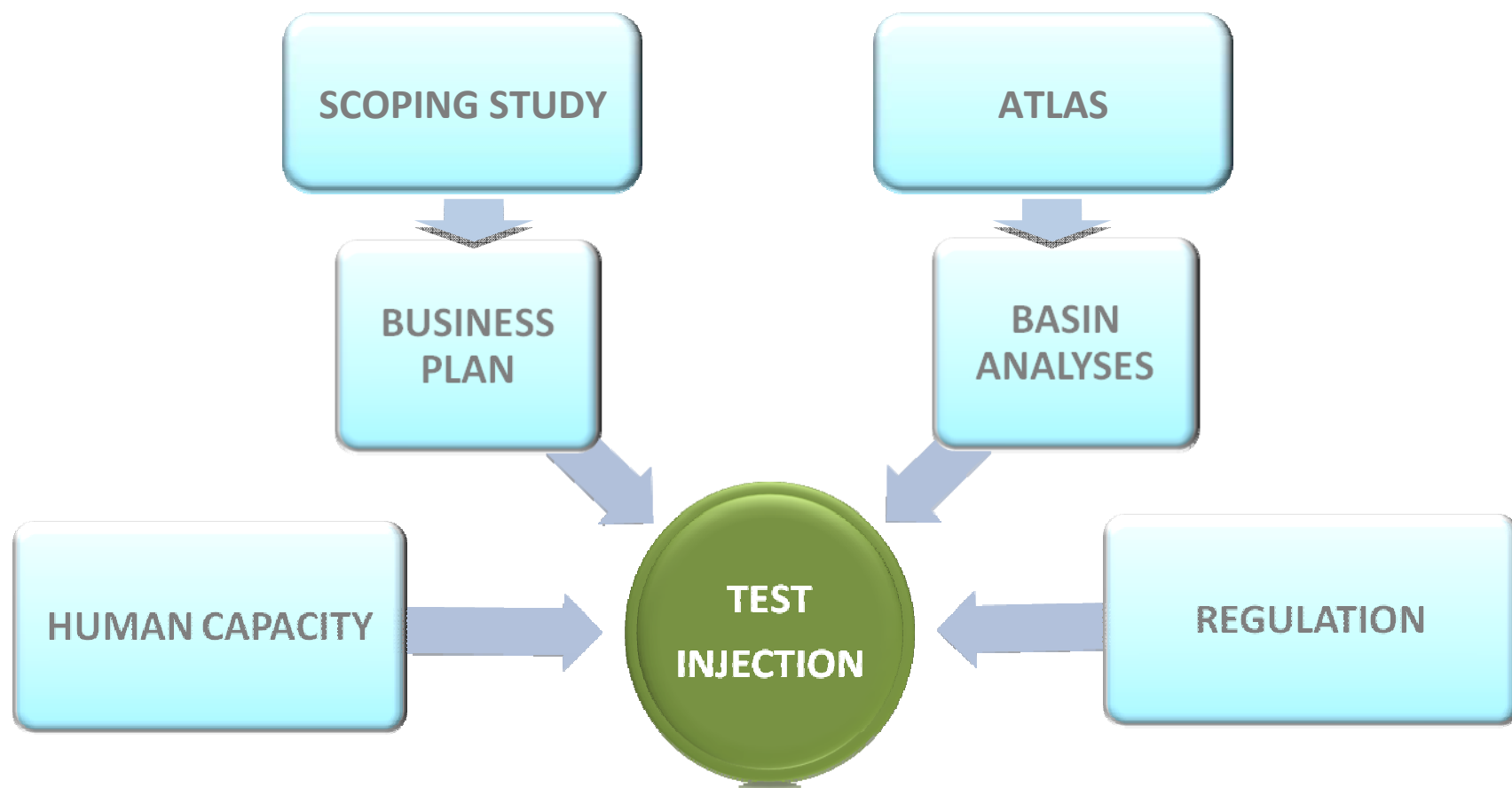
2020

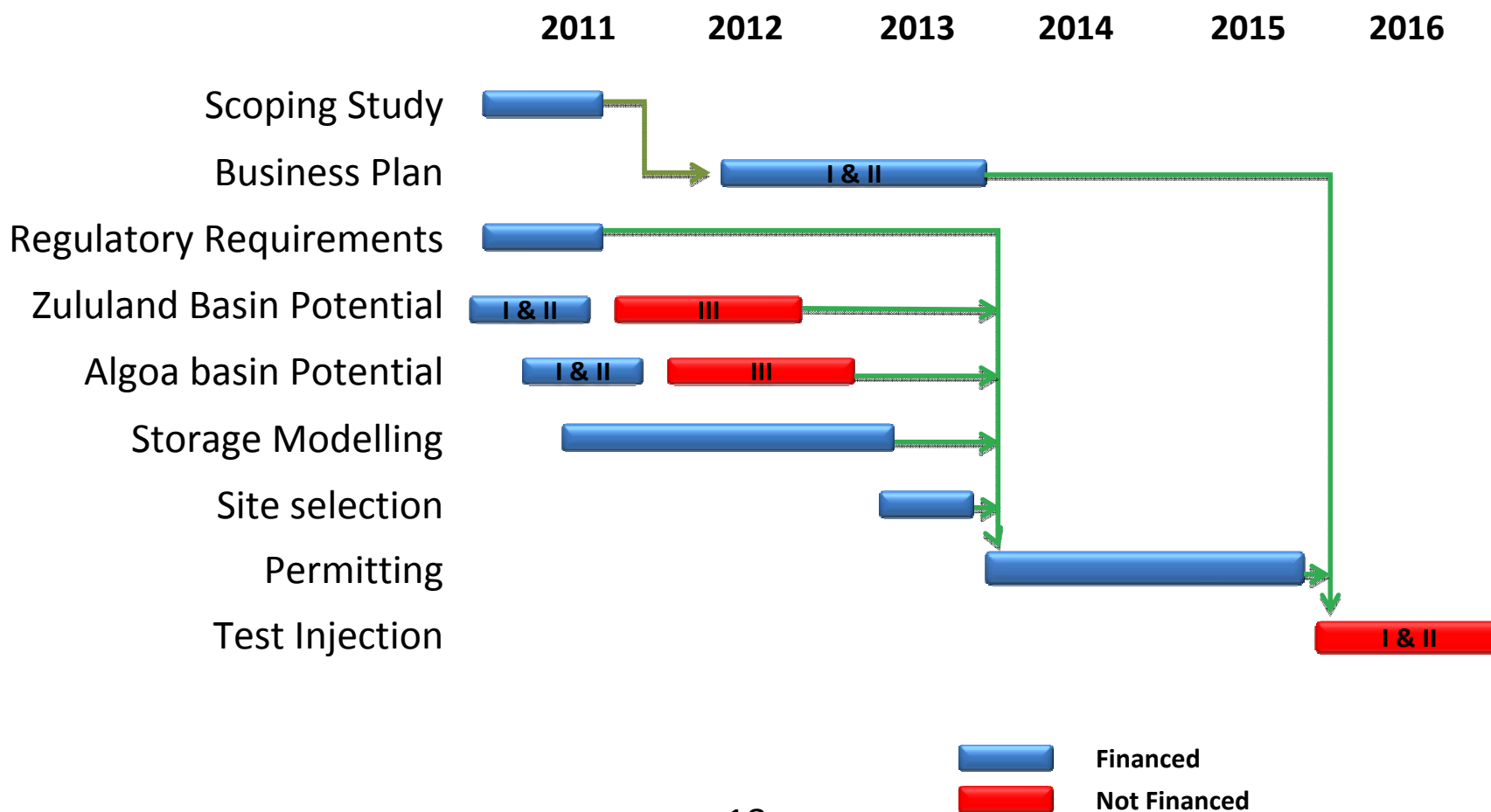
2025





# CO<sub>2</sub> Test Injection







# Further SACCCS activity

- Work streams
  - Human capacity building
  - Economics
  - Capture
  - Transport
  - Storage
  - Legal
  - Public and stakeholder engagement
  - International collaboration
- International support
  - EuropeAid
  - UK Government
  - EU Government
  - Norwegian Government
  - GCCSI
  - IEA
  - IEA GHG
  - World Bank
  - CSLF
  - IPAC-CO2



# CCS in South Africa: Summary

- CCS is being considered as part of South Africa's energy and climate change future
- The South African Centre for CCS has the mandate to progress the technical aspects of CCS
- The South African government is developing the legal and regulatory frameworks necessary for CCS deployment
- CCS development and deployment in South Africa will require significant national and international funding
- CCS should be part of the CDM as long as safety and security of storage can be assured



## South Africa: the importance of CCS

“[Carbon capture and storage] brings a very big hope to countries, in particular like SA that have used deposits of coal, [as it] could be used to develop countries without creating emissions that are going to affect the globe”

**– Jacob Zuma, Oslo 2011**



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