

# Department of Energy

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# Carbon Capture and Storage in South Africa and Inflated Salary Packages of International CCS Experts



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# CCS And International Experts on Capacity Building in South Africa


- Introduction
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- Financing of CCS in SA is Government Led
- Capacity Building and Local content
- Inflated Salary Packages of International Experts/Advisors on CCS in developing countries
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- Way-Forward/ & CSLF Charter



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# Introduction

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- South Africa rely on fossil fuels for most of its primary energy supply. Approximately 90% of primary energy is derived from fossil fuels of which ~65% is coal, 21% (oil), 3 (gas), 3(nuclear) , hydro & 7% (renewable).
  - It is clear that SA has coal based energy economy.
  - Coal provides ~92% of electrical power generation
  - Coal is used for the production of liquid fuels through Coal-To-Liquid Technology amounting to approximately 30% of the petroleum used in South Africa.
  - This reliance on fossil fuels inevitably leads to more than ~450Mt CO<sub>2</sub> emissions per year as confirmed by the United Nations Convention on Climate Change.
  - SA is classified as one of the significant polluters among developing countries



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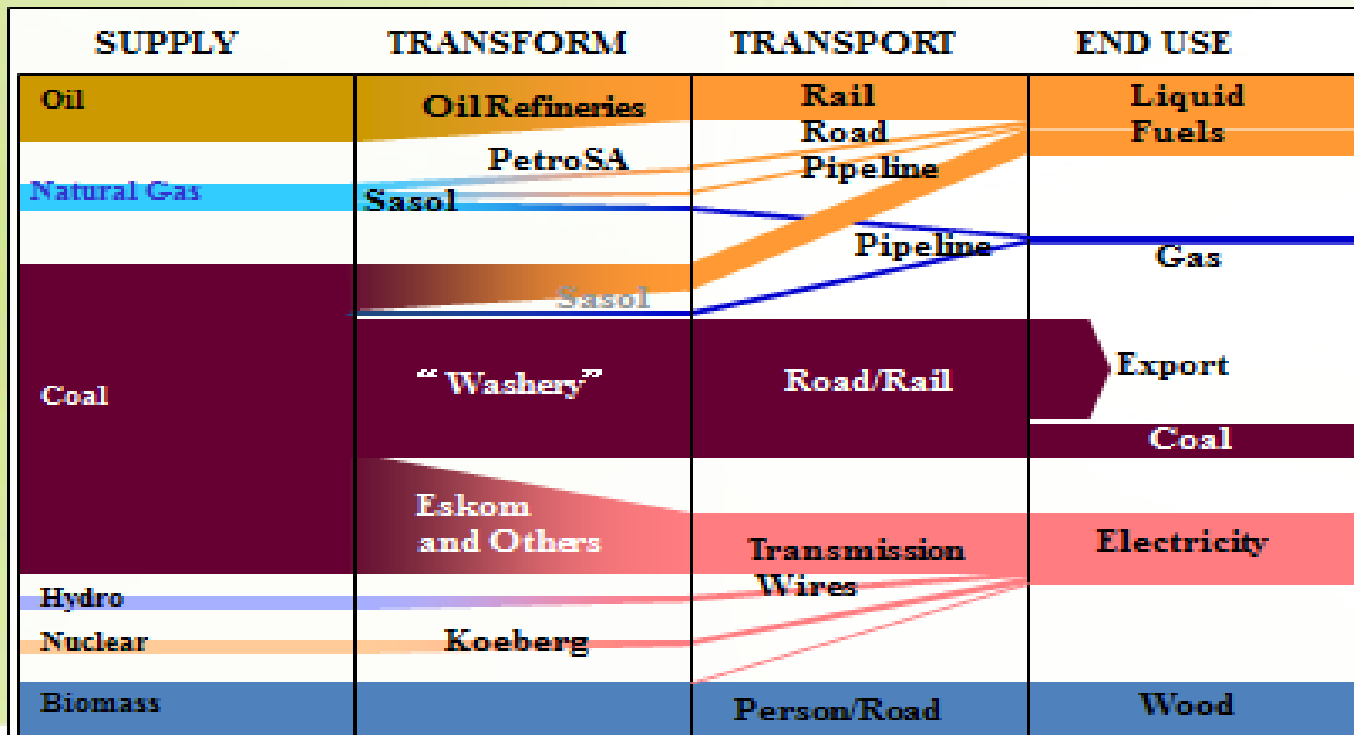
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# Introduction

## South African Energy Chain



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# Introduction



SA recognise and share global concerns that: green house gases contribute to climate change, growing energy demand will accelerate GHG emission and technological solutions and management interventions is required to mitigate against climate change.

The SA government is committed and supports the development and deployment of CCS.

In 2009 the South African Centre for Carbon Capture and Storage (SACCCS) was established under the South African National Energy Development Institute (SANEDI) , a State owned Entity.

Public-Private Partnership: DoE, Sasol, Eskom, AAC, Xxarro, Total

SACCCS is tasked with delivery of CCS Road Map.



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# CCS Roadmap In South Africa

2004: CCS Potential - Done

2010: Carbon Atlas -

Launched by Minister Oct2010

2016: Test Injection -

Planned [10s thousands tonnes]

2020: Integrated Demonstration Plant -

Planned [100s thousands tonnes]

2025: Commercial Operation -


Planned 2025 [millions tonnes]



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# PCSP in South Africa



➤ The PCSP is a proof of concept for CCS and in particular storage of CO<sub>2</sub> in South African geological formation.

➤ The objectives of the PCSP are, amongst others:

- Indicate the feasibility and potential for CO<sub>2</sub> storage in South Africa;
- Capacity building;
- Platform for regulatory development; and
- Obtain an indicative measure of CCS costs in SA.

➤ The PCSP is scheduled for 2017 to inject about 10,000 tonnes of CO<sub>2</sub> in **Kwa-Zululand Basin**, the South African geological formation.

➤ **Bongwana Lake**, Monitoring of Natural CO<sub>2</sub> for PCSP support program.



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# PCSP Funding Mechanism in SA

- The estimated cost for the full implementation of PCSP in SA is likely to range from R500 million to R1.6 billion.
- World Bank is key contributor to the PCSP and derives funding from countries like Norway, UK and others.
- Funding committed to the PCSP currently stands at around R459 million. US\$27.2 million committed from the World Bank, R 200 million allocated to the project from the South African Department of Energy.
- Developing countries like South Africa have no continual annual budget dedicated to CCS compared with developed countries.



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## PCSP Funding Mechanism in SA (II)

- It is acknowledged that in developing countries CCS competes with socio-economic needs for funding.
- Government stakeholders like the DoE and National Treasury in SA, generally negotiate, approve and redirect funds allocated for poverty alleviation to CCS.
- If a segment of the population is facing immediate starvation, in decision making process one encounters predicament and evaluates the opportunity to respond to the needs of starving population as against funding CCS project.  
**“SA Skewed Distribution of Wealth.”**
- Both the CCS project and a starving population are of paramount importance.



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# World Bank and CCS Skills Strategy in SA

- Its importance for SA to develop a pool of CCS experts for the growth and sustainability of the industry, including skills transfer.
- Companies have skills development policies but are frustrated by lack of commitment to transformation by middle/line managers that are reluctant to implement and tap intelligence from other racial population groups.
- Companies give bursaries for students to accomplish Diplomas, Degrees, MSc's and PhD's and yet fail to offer them jobs as trainees and new employees, create bottle-neck to employment entry, while they raise complaints about shortage of skills in SA.
- We appeal to International partners to intervene in CCS skill development strategy in South Africa



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# CCS Capacity Required- to Promote Local Content

- SA has extensive expertise in minerals-geological exploration, mining and metallurgy but no critical mass of skills related to CCS.
- Recently a South African CCS Technical Manager with experience in minerals geological-exploration was appointed but without CCS skills. (**SA 5km deep mines**).
- The CCS Technical Manager needs requisite skills, training and mentorship from an International CCS Expert/advisor/consultant, to facilitate the CCS skills transference and sustainability of the program.
- International CCS experts approached to provide skills transfer, training and mentorship demanded inflated salary packages of R8.5 mil/ year; **SACCCS Board objection- Revised by 50% to R4.0 mil/year.**



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# Conclusion

- SA is committed to CCS development and deployment although the country has challenges regarding socio-economic constraints/poverty alleviation.
- Financial/ technical support from developed countries will play a major role in implementation of SA CCS road map.
- CSLF need to continue facilitating CCS support of developing countries by developed countries;
- SA appeal to CSLF to assist in terms of guidelines in the salary packages of International CCS Advisors/ Experts, or to request the developed countries to make such services to be available with limited fee.



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# Way Forward

- South Africa seeks CSLF intervention in providing guidelines on salary packages for CCS experts/advisors;
- Facilitate benchmarking, determination and standardisation of salary packages for CCS experts.
- Rate of pay for CCS experts in developed countries to be comparable to developing countries through a sliding scale.
- Such salary package should be aligned to magnitude of the CO<sub>2</sub> injection and storage project;
- Probably there are other factors that should be evaluated in the determination of salary packages.



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# Way Forward

The following clauses were selected from the CSLF Charter and are aligned to SA request:

- “Identify key obstacles to achieving improved technology capacity.”
- “Build the capacity of members.”
- “Consult with and consider the views and needs of the stakeholders in the activities of the CSLF.”
- “Support international efforts to promote R&D and capacity building projects in developing countries.”



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# Thank you



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