



Ms. Lehlogonolo Matseba

**Department of Mineral Resources and Energy
South Africa
2023**

JICA - COUNTRY REPORT



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PRESENTATION OUTLINE

1. **General Country Profile**
2. **Economic Indicators**
3. **Energy Organisational Structure**
4. **Primary Energy Supply**
5. **Primary Energy Demand**
6. **Challenges facing the South African energy sector**
7. **Maximum Generating Capacity Mix – Power Sector**
8. **Current Energy policy difficulties**
9. **Subject of interest**



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Country information - SA

• Country profile

- South Africa is the southernmost country on the African Continent. It is a multi-ethnic, constitutional democracy which comprises a parliamentary republic.
- South Africa has nine provinces (Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, Northern Cape, North West and Western Cape).
- South Africa is governed from two official capitals, Pretoria and Cape Town.
- South African has 11 official languages (Ndebele, Pedi, Sotho, Swati, Tsonga, Tswana, Venda, Xhosa, Zulu, Afrikaans, and English)
- Recently (2023), added sign language as the 12th official language.



Red symbolizes bloodshed and sacrifices made in South Africa's struggle for independence.
White stands for Europeans and peace and harmony between native people and Europeans.
Green represents fertility of the South African land.
Yellow stands for the mineral and other natural wealth of South Africa.
Black represents the native people of South Africa.
Blue stands for blue sky and endless opportunities for South Africans.



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Economic indicators

- **GDP per capita** 7,055.04 USD (2021), GDP growth rate: 4,9% annual change (2021).
- The South African economy grew for a second consecutive year, expanding by 2,0% between 2021 and 2022 from R4,50 trillion to R4,60 trillion.
- Inflation in South Africa in 2022 was around 7.04%
- **Population** 60,5 million people (2021), estimated 18 million households, with an average household size of 3,34 persons.
- **Unemployment** remains high, at around 35%, and youth unemployment even exceeds 50%
- Household access to mains electricity increased from 76,7% in 2002 to 89,3% in 2021.

Source: General Household Survey, 2021 (GHS) released by Statistics South Africa



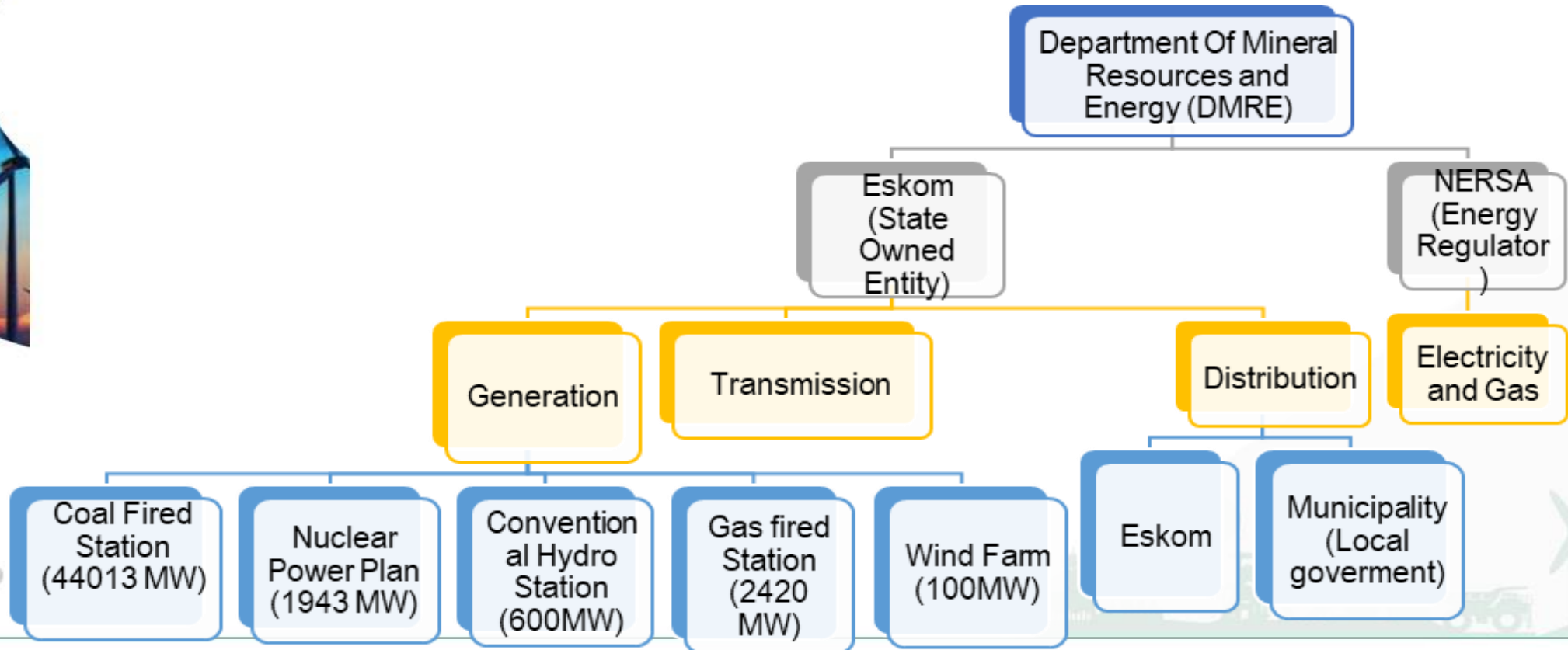
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Energy Organisational Structure – Power Generation

* 2X Coal New Build – Capacity (4800 MW each)



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Reserves of energy and mineral resources

• Reserves Mineral resources reserves

(Source: Wits University, 2022 - SA)

- South Africa has the largest reserves of Platinum-group metals (PGMs; 88%)
- Manganese (80%)
- Chromite (72%)
- Gold (13%), known reserves in the world
- It is ranked second in Titanium minerals (10%), Zirconium (25%), Vanadium (32%), Vermiculite (40%) and Fluorspar (17%)

• Energy reserves

(ESKOM, 2021 - SA)

- Onshore shale gas reserves are estimated at 390 trillion cubic feet.
- Coal reserves are estimated at 53 billion tonnes and with our present production rate there should be almost 200 years of coal supply left.



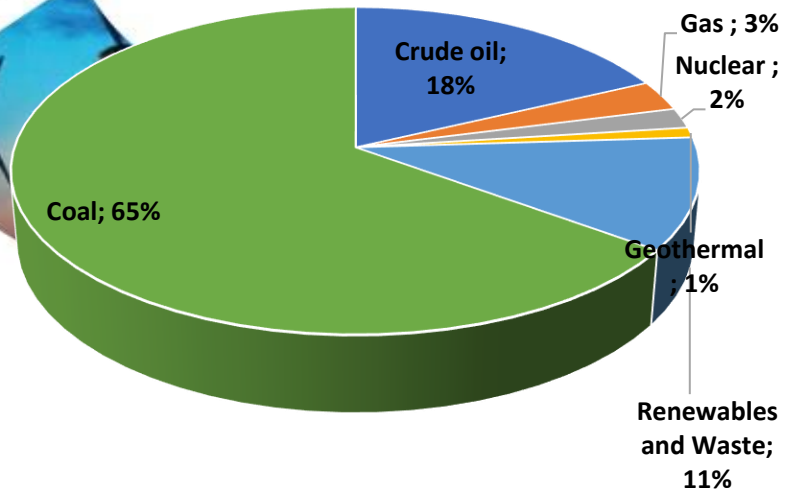
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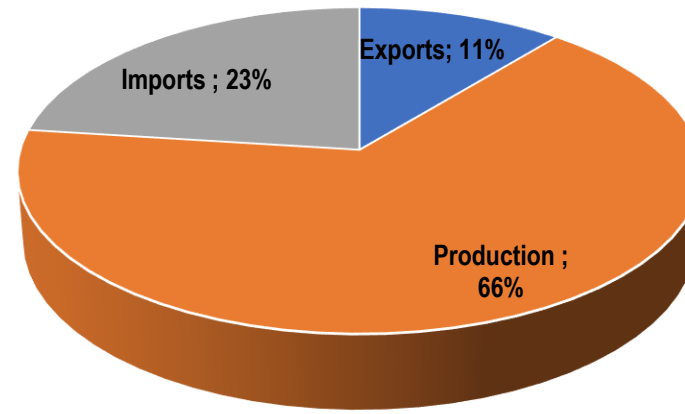


Primary Energy Supply (Source: DMRE Energy Balance, 2019)

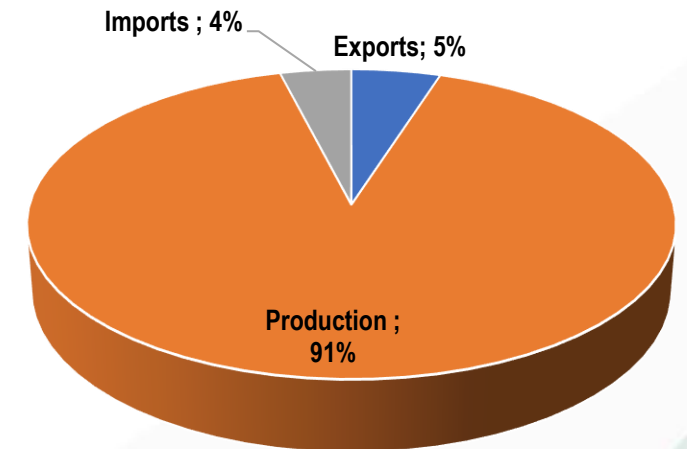
Total Primary Energy Supply, 2019



Petroleum Product Supply, 2019



Electricity Supply, 2019



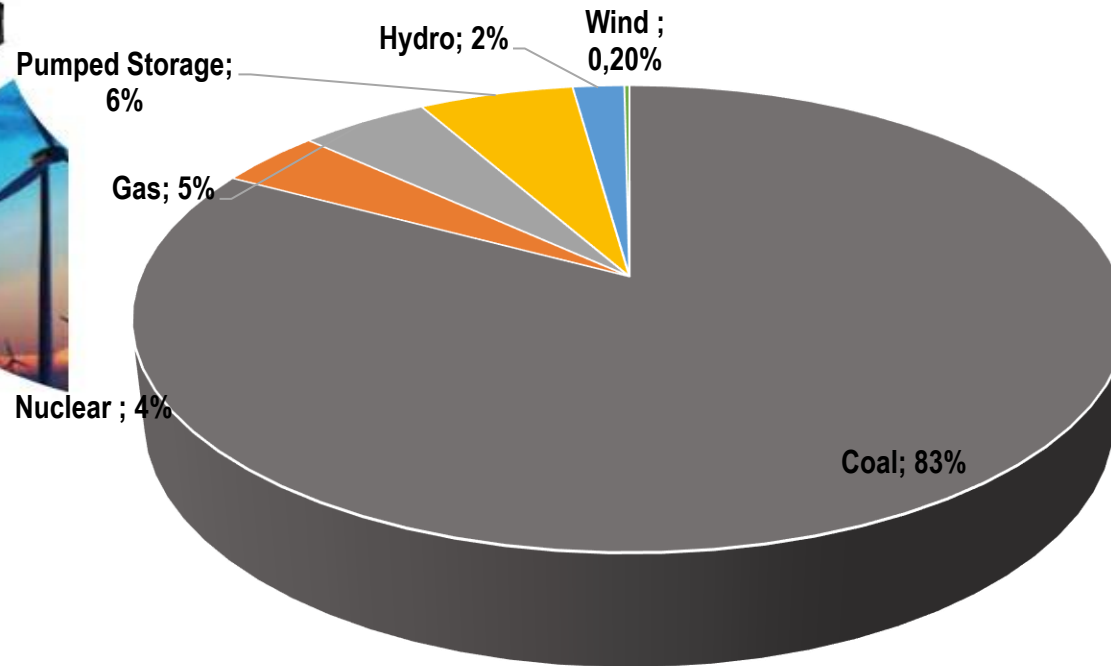
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Maximum Generating Capacity Mix - Electricity

ESKOM Generating Capacity, 2019



• 2023 Update:

- Coal still dominates the South African energy mix, providing 80% of the total system load.
- Some coal power plants are decommissioned.
- The contribution of renewable energy technologies (wind, solar PV and CSP) increased in 2022 to a total of 6.2 GW installed capacity and provided 7.3% of the total energy mix.

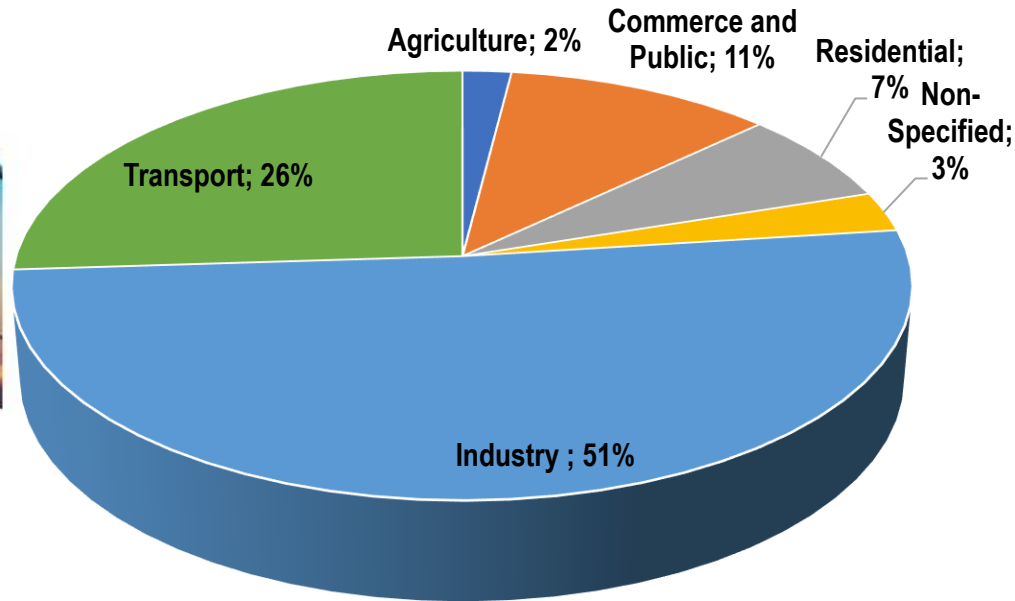


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Energy Demand by Sector (Source: DMRE Energy Balance, 2019)



- The South African economy can be divided into **five economic sectors**: industry (including mining); commerce and public services; transport; agriculture; and residential. The commerce and public services sector includes government buildings, offices, shops, hospitals, education, entertainment and museums
- The Industrial sector is the largest consumer of the final energy in the country. The sector may be subdivided into mining, iron and steel, chemicals, non-ferrous metals, non-metallic minerals, pulp and paper, food and tobacco, and other.



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Challenges facing the South African energy sector

- Load shedding
- Ageing Infrastructure
- Delays in upgrading the SA's nuclear power station
- Inadequately maintained fleet of coal power stations
- Policy uncertainty (Next slide)
- Lack of enough investment for baseload energy

- **Current energy measures**

- Development in gas policy
- Just energy transition
- Diversifying SA's energy mix



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Current Energy policy difficulties

- **Petroleum sector policy bottlenecks**

- 4 out of 6 refineries have shutdown (523 000bbl/day)
 - Regulated retail price.
 - Structure of the market - Government has new transformation requirements for petroleum products overriding regulatory pressures.
 - Implementation of Clean Fuels 2 regulations – Industry requested government for 5 years.
 - Carbon tax policy implemented in 2019 (Now @ R159/t (8,32USD) of carbon dioxide equivalent ~ 10c/l for petrol and 11c/l for diesel).
 - Deteriorating of infrastructure with no financial support.

- **Electricity sector has relevant policies**

- Delay/budget in data collection
- Implementation of the policies



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Subject of interest

- **Energy Policy Formulation Process**

- It would be beneficial to learn how Japan develops their policy. Their takeaway from their policy formulation process and learnings. It would assist us to benchmark with South African Policy development processes and learn on the differentiators.

- **Data collection and data verification systems/tools**

- How to best to assess the quality of data.

- **Energy Policy in Japan**

- Learning the Japan energy general policies including their implementation plan if available.

- **Monitory and Evaluation of policies**



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Thank you



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