

## Country Assessment Report

### Country/Region Name- South Africa:

South Africa is the southernmost country on the African continent; bordered by Namibia, Botswana, Mozambique, Eswatini and surround the enclaved country of Lesotho. It has a population over 57 million and GDP of \$368 billion, growing at a rate of 1%.

(World Bank 2018)

### Economic structure and activity:

The service sector dominates the economy and employment, accounting for 61.04% of the South Africa's GDP. Major sectors include real estate, business services and finance, with an active stock exchange that ranks highly in global market capitalisation. Tourism is another significant contributor but has struggled to capitalise on the global exposure from the 2010 FIFA World Cup. Industry accounts for 25.85% of the nation's GDP, with a diverse range of manufacturing services and world leading expertise in railway rolling stock, synthetic fuels, mining equipment and machinery. South Africa has a wealth of natural resources, is the world's largest producer and exporter of gold, platinum, chrome and manganese and fourth largest producer of diamonds. Agriculture is highly diversified and market-oriented, contributing 2.18% of the nation's GDP. Is the sixth largest producer of wine and the continent's largest corn and sugar producer. Other major crops include maize, wheat, barley and soya beans.

(Statista 2018; Santander 2020; World Bank 2020)

### Top private companies:

Sasol (chemicals) - the company intends to procure 600 MW of renewable electricity capacity by launching a call for tenders for IPPs. The projects put forward by IPPs must have at least 20MW, installed close to Sasol's facilities in Sasolburg and Secunda where possible and be wind/solar technologies.

MTN Group (telecommunications) - they invest in renewable and alternative energy sources and have pledged to achieve net-zero greenhouse gas emissions by 2050 as part of the GMSA-led industry-wide plan.

Shoprite holdings (retail) - generated 2, 637 MWh of renewable energy in 2019 through rooftop photovoltaic systems, saving 2 505 tCO<sub>2</sub>e.

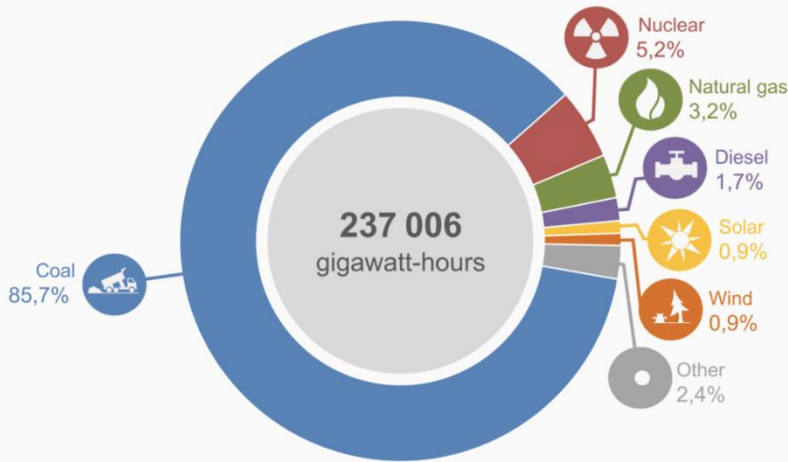
### Generation and demand: (type, MW, TWh)

National installed capacity 47 GW and generation 249 655 GWh (2015). Renewable energy generation capacity is in the order of 4 GW.

Installed capacity of the grid (in 2015):

- Hydro: 575 MW
- Wind: 1 454 MW
- Gas: 2 520 MW
- Coal: 38 392 MW
- Nuclear: 1 800 MW
- Solar: 1 204 MW
- Other: ~1 400 (Non-specific) MW
- **TOTAL: ~47 345 MW**

**Coal remains South Africa's dominant source of energy**  
Total electricity generated by source, 2016



Excludes municipalities and enterprises that distribute liquefied petroleum gas (LPG) Source: Electricity, gas and water supply industry, 2016 (Table 11)



THE SOUTH AFRICA I KNOW, THE HOME I UNDERSTAND

[www.Eskom.co.za](http://www.Eskom.co.za), (Sep 2016); [www.nano.co.za](http://www.nano.co.za) (August 2016); [www.energy.gov.za](http://www.energy.gov.za) (2012)

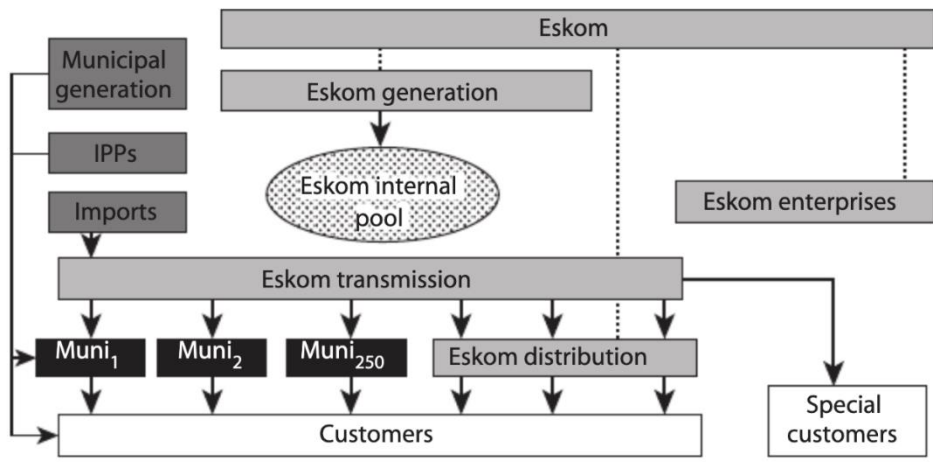
Electricity demand by consumer type (in 2015):

- Regulated market: 249 655 GWh
- TOTAL: 249 655 GWh**

The first is growing energy demand; consumption is expected to increase from 260 TWh in 2010 to 454 TWh by 2030 (Baker 2011:12).

**Electrical Interconnection and import/export:**

South Africa is a member of the Southern African Power Pool which includes neighbouring Namibia, Botswana and Mozambique. In 2016, South Africa imported 10,555,000 MWh of electricity to meet demand and exported 16,549,000 MWh.



**Market Structure:**

South Africa's power sector is centralised by the state's public utility monopoly-Eskom. It generates 90% of the country's electricity (Baker 2011), 93% of which is produced

by coal (NER 2000).

**Figure 1.** South Africa Power Market Structure.

**Responsible Government Department:** (include key contacts)

Department of Mineral Resources and Energy (DoMRE) is responsible for the ensuring development, utilisation and management of South Africa's energy resources.

Director Renewable Energy is [REDACTED]

**Existing/Planned Energy Legislation:** (is there a CPO)

None specific to RECs at this time. Provision for a national RECs system was considered in a 2008 bill pertaining to the establishment of the National Energy Development Institute but this was removed and the mandate remains with RECSA as per the constitution superseding SANTRECT (2007) See preamble to the RECSA constitution.

The electricity industry is governed primarily by the Electricity Act of 2008 and subsequent amendments. Broader energy policies of possible relevance include:

*White Paper on Renewable Energy and Clean Energy Development* – passed in 2003 to help increase the share of modern renewable energy consumed and provide affordable access to energy throughout South Africa, thus contributing to sustainable development and environmental conservation.

*An Integrated Resource Plan (IRP)* - passed in 2019, the IRP is an electricity infrastructure development plan based on a cost-effective supply and demand balance, acknowledging energy security and the environment.

*AFD fund* introduced in 2019 to provide finance to RE projects and energy efficiency schemes across small scale and manufacturing of Green products in South Africa.

*Carbon tax* – passed in 2019 applies the polluter-pays-principle for large emitters and helps to ensure that firms and consumers account for the cost of environmental externalities in their future production, consumption and investment decisions. The tax is designed to incentivise polluters to adopt cleaner technologies over the next decade and beyond.

**Environmental Legislation for RE:**

RE projects are subject to the same environmental approval procedures as for non-renewable projects under the National Environmental Management Act (NEMA 2008) and require typical EIA processes and approvals comparable to international standards.

Three Ministerial Determinations for the procurement of 3,725MW by 2016, 3,200MW by 2020 and 6,300MW by 2025, have been issued. The allocated quantities are derived from the Integrated Resource Plan (IRP) 2010-2030 target of 17,800MW new generation capacity set aside for renewables. Over and above this, the IRP 2010-2030 confirmed 2,600MW of large-scale Hydro to be imported from the southern African regions well as Eskom's 100MW each for solar and wind plants.

**Existing/Planned Certificate Systems:** (purpose, extent)

Voluntary REC<sup>1</sup> systems based on 2007 national consideration of public systems available internationally. Continued in the private sector with state endorsement under the auspices of RECSA, the REC market participants' non-profit association. The RECSA registry is operated by zaRECs [www.recsa.org.za](http://www.recsa.org.za) C/o [www.zaRECs.co.za](http://www.zaRECs.co.za)

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<sup>1</sup> Reference is made to TRECs in the early literature and is still sometimes used interchangeably with RECs. For TRECs read RECs as for EECs definition.

Potential fungibility of RECs in a national Carbon Tax offset system has been suggested in a discussion paper out for comment at the time of writing.

**RE market potential:**

South Africa is well endowed with RE potential. The country receives more than 2,500 hours of sunshine per year and irradiation levels average between 4.5 and 6.5 kWh/m<sup>2</sup> per day. The Northern Cape has been cited as one of the most resourceful and promising solar sites in the world. Average wind speeds at 10m range between 4 and 5 m/s for most of its 3,000km long coastline, rising to 8 m/s across some of its mountainous terrain. The east coast boasts large wood and sugar plantations, which could integrate biomass generators to further diversify electricity generation. Seasonal flow and instances of severe drought restricts South Africa's potential for hydropower. Opportunities for small hydro remain an option but most have already been exploited.

(Mokveld and von Ejie 2018)

**Market risks and challenges:**

South Africa's energy system is susceptible to path dependency. This technological lock-in has meant a historical dependence on coal for the nation's primary electricity supply, which makes innovation in the RE sector difficult. The consequent lack of maturity in the RE market has led to high volatility and thus, a higher market risk. This means political impetus for renewable technologies must coincide with economic incentives to avoid a continued perception of market risk.

(Nel 2015)

**Extent of Engagement with Government:** (brief summary of any contact already made with the national government regarding certification in general and I-REC)

RECSA was mandated by then Department of Minerals and Energy (now Department of Energy) in 2007 to continue with the voluntary market running in parallel with the voluntary Green Power Market Pilot Programme initiated in 2004. Redemption of RECs in the RECSA system operated by zaRECs remains the verification mechanism for green power traded under green power trading licence.

**Expected response from Government:**

Go ahead to proceed with voluntary system.

**Current Environmental Reporting in Energy:**

A number of corporates participate voluntarily in the CDP reporting under the GHG protocol Scope 2 Guidance.

**Any other Relevant Information:**

Key information regarding the issuing body in South Africa:

form of organization (Non profit organization Department of Social Welfare NPO-096-079 [www.recsa.org.za](http://www.recsa.org.za) ),

where and when established (2008, Randburg South Africa),

mission ([http://www.zarecs.co.za/about-recs/documents/doc\\_download/10-recsa-constitution](http://www.zarecs.co.za/about-recs/documents/doc_download/10-recsa-constitution)),

turnover (<ZAR5m, non-profit),

number of employees (1-10, including part-time and management services support),

track record ([http://www.zarecs.co.za/about-recs/documents/doc\\_download/11-recs-system-feasibility-study](http://www.zarecs.co.za/about-recs/documents/doc_download/11-recs-system-feasibility-study) ) Issuance to date at time of writing 144 533 coupons since 2002.

The zaRECs registry infrastructure is built on the Principles and Rules of Operation of the EECS circa 2008. RECs are tradable, serialised, verified quanta of production of renewable energy sourced power.



[@zaRECs](#)

[www.zaRECs.co.za](http://www.zaRECs.co.za)



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