

# Swaziland

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## Section 1: Energy provision<sup>1</sup>

### 1.1 Main fuel sources for direct use and power generation

The major energy sources used in the country include petroleum products, renewable waste (mainly bagasse from sugar mills and wood pulp from wood processing companies), followed by electricity and coal. The repartition of utilised energy sources is as follows: petroleum products (23%), renewable and waste (48%), electricity (13%) and coal (16%). The Lowveld has vast coal resources ranging from pure anthracitic and semi-anthracitic coal. There are rivers which provide hydroelectric power. The main agricultural cash crop is sugar cane with three sugar mills in the country. The sugar mills also produce substantial amounts of bagasse, which is used for industrial heat and the balance for electricity generation. Over 75% of the population lives in rural areas, and use wood fuel as their main source of energy for cooking and heating. Great reliance on wood and waste for fuel as well as candle and kerosene lighting is predominant in rural areas.

### 1.2 Degree of reliance on imported energy

At present, Swaziland is reliant on imported electricity (80%), petroleum products (100%) and coal. The Kingdom of Swaziland is extremely dependant on the Republic of South Africa (60%) for most of its energy needs. Swaziland was self-sufficient in electricity generation until 1973 when it began to experience a short fall due to the growing demand, hence the first 132kV ESKOM line was built. Thereafter two ESKOM feeders were built as a result of increasing demand. The diminishing power capacities in the Southern African region will dramatically increase electricity prices in the country. This shortage of power in the region will definitely impact on Swaziland.

### 1.3 Extent of connection to electricity network (households and businesses; rural and urban)

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<sup>1</sup> Information collected from the following sources:  
<http://www.greeneconomyinitiative.com/news/181/ARTICLE/1445/2009-02-12.html> ,  
[http://huwu.org/esa/sustdev/csd/csd14/statements/swaziland\\_energy\\_05may.pdf](http://huwu.org/esa/sustdev/csd/csd14/statements/swaziland_energy_05may.pdf)<http://www.undp.org/climatechange/docs/Namibia/Namibian%20national%20issues%20report%20on%20key%20sector%20of%20energy.pdf>,  
[http://huwu.org/esa/sustdev/csd/csd14/statements/swaziland\\_energy\\_05may.pdf](http://huwu.org/esa/sustdev/csd/csd14/statements/swaziland_energy_05may.pdf)

It is estimated that industrial customers represent 47% of total users, followed by domestic users 23%, irrigation 18%, commercial 11% and the rest represents 1%. There are approximately 42,000 households electrified as well as 70 large energy users with approximately 10 industrial users. It is estimated that 40% of urban areas and 4% of rural areas are electrified. It is estimated that the overall electrification rate is 27%. While consumption of energy is low by international standards, the country's use of energy is higher per capita than many regional neighbour countries.<sup>2</sup>

#### **1.4 Any capacity concerns (power generation and/or transmission/distribution)**

The major concern as stated earlier is related to the potential significant tariff increases due to the dependence on imported energy from the SADC region and the imminent shortages of power in the region. Security of supply, increasing rural electrification and reducing dependence on energy imports are the main challenges for the energy sector on Swaziland. Government has expressed its commitments to extend the grid to rural areas through a rural electrification programme started in the year 2000. Efforts to electrify the poor will continue to proceed and will include the considerations of smart subsidies, lifeline and poverty tariffs. Government believes that smart subsidies should be targeted to the real recipients.

#### **1.1 Potential for renewable energy, energy efficiency and co-generation (i.e. any authoritative assessments)**

The potential for renewable energy encompasses the following: hydroelectricity, woodfuel, biofuels, wind, and solar. It is estimated that Swaziland has about 60.1 MW of installed hydro generating capacity and a gross theoretical hydropower potential of approximately 3800 GWh/year. The Government has investigated the use of Biofuels in the country. One of the proposed project in terms of biofuels would entail the blending of 10% (by volume) anhydrous ethanol, which is produced by the Royal Swaziland Sugar Corporation distillery in Simunye, with 90% Unleaded Petrol. The blended fuel is then used on a selection of vehicles from government.

The Renewable Energy Association of Swaziland (REASWA) is a registered, non-profit organisation whose main purpose is to promote the cost-effective use of renewable energy in Swaziland in an environmentally sustainable and socially acceptable manner. REASWA consists of a cross-sectional membership from government, the private sector, nongovernmental organisations and tertiary institutions. REASWA aims to introduce renewable energy sources to the rural population and reduce pressure on the environment, using wind, solar, hydro and biomass.

## Section 2: Energy market<sup>3</sup>

### **2.1 Ownership (state/municipality/private/mixture) of electricity and gas utilities and other sources of energy**

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<sup>3</sup> Information collected from the following sources:

<http://www.greeneconomyinitiative.com/news/181/ARTICLE/1445/2009-02-12.html> ,  
[http://huwu.org/esa/sustdev/csd/csd14/statements/swaziland\\_energy\\_05may.pdf](http://huwu.org/esa/sustdev/csd/csd14/statements/swaziland_energy_05may.pdf)  
<http://www.undp.org/climatechange/docs/Namibia/Namibian%20national%20issues%20report%20on%20key%20sector%20of%20energy.pdf>,  
[http://huwu.org/esa/sustdev/csd/csd14/statements/swaziland\\_energy\\_05may.pdf](http://huwu.org/esa/sustdev/csd/csd14/statements/swaziland_energy_05may.pdf)

Swaziland's power is supplied and distributed by the Swaziland Electricity Company (SEC), which was established in 2007 by the Swaziland Electricity Company Act of 2007.

## **2.2 Extent of competition in power generation and energy retail**

SEC currently owns the monopoly on the import, distribution and supply of electricity via the national power grid. The Ministry of Natural Resources and Energy is the national energy authority. The SEC owns a majority of the country's power stations. There are also five private power stations. A substantial amount (almost 25%) of energy used in the Kingdom has been supplied by self-generators.

## **2.3 Structure: extent of vertical integration of generation / transmission / distribution / retail.**

A reform of the energy sector has been undertaken to reduce the monopoly of the utility (change from a board to a company in 2007), establish a regulatory body and preserve the state company as a more disciplined corporate entity. However, the introduction of new market-oriented structures into a system that has not previously supported these types of structures has been difficult.

# Section 3: Energy policy framework

## **3.1 Existence of an explicit energy policy framework and key policies?**

The legal energy policy and planning framework in Swaziland is controlled solely by the government via the Ministry of Natural Resources and Energy, which supports the position that investment in energy and industrial development in a sustainable manner, can eradicate poverty in the country. Government has stated clearly that rural electrification will continue to be a priority for the Government and the efforts are led by the State. Energy is widely seen as a driver to achieving Millennium Development Goals (MDGs) as it contributes in: eradicating extreme poverty and hunger; achieving universal primary education; promoting gender equality and empower women; reducing child mortality; improving maternal health; combating HIV/AIDS; ensuring environmental sustainability; and developing a global partnership for development.

## **3.2 Any current energy policy debates/developing legislation – e.g. on security of supply; energy market reform; incentives for renewable energy etc**

The abovementioned energy reform has raised some concerns, and the potential 'privatisation' of the energy market in Swaziland has raised some opposition, especially regarding the position of foreign investors.

## **3.3 Any specific policies or programmes to promote sustainable energy**

In order to assist in the electrification of rural areas, Government through a grant from the Republic of China has, so far, made available to SEC about E45 million. The objective of Government is to ensure that SEC constructs distribution lines that will reduce the cost of connection of people in the rural areas. These distribution lines are constructed towards schools, clinics and other strategic Government installations. Communities then benefit since the line routes are planned to be closer to homesteads.

### **3.4 Any major energy network or sustainable energy studies available**

As with most Southern African countries, international donors and/or funders have an essential role for the infrastructural development and other forms of assistance (research and feasibility studies) related to the energy sectors. Such donors/funders include: the World Bank, United Nations Agencies, and individual countries.

### **3.5 Role of government in energy policy – which departments are involved?**

The Ministry of Natural Resources and Energy is the national energy authority. The petroleum unit has to regulate petroleum trade and review of the oil industry profit margins. The department represents the Ministry in the Interstate Oil Committee (IOC) meetings, comprising Botswana, Lesotho, Namibia, South Africa and Swaziland. The conventional unit or non-renewable Energy Unit deals with issues relating to sources of energy which are non-renewable, such as coal and natural gas, including electricity and the need to address issues concerning energy efficiency and conservation. The general functions of this Unit are to co-ordinate and supervise SEC, improve accessibility to electricity, implement the Energy Policy and the development of a national electrification programme. The Unit has to develop and enforce a new Electricity Act and is tasked with the planning of rural electrification. The Unit also chairs the Select Committee on Rural Electrification (SCORE), a committee representing stakeholders with interests in rural development. The Unit has to investigate and carry out research on suitable equipment to utilise local coal, which is environmentally acceptable by international standards. The Unit has to come up with energy efficient standards for coal burning equipment to minimise pollution, including raising awareness on energy efficient equipment. The Unit is also tasked with the responsibility of establishing national electricity and wiring standards with codes of practice and to advise on the best methods of inspection. The unit is responsible for projects undertaken in rural electrification, which targets schools, health care facilities and other government institutions as a priority. The Renewable Energy Unit in the Ministry which oversees the activities of the Renewable Energy Association of Swaziland, manages and promotes the development and use of sustainable energy.

### **3.6 Any government (or government funded) agencies with a specific role in sustainable energy and/or environmental protection (with an energy role)**

Other government departments involved in the energy policy development functions include: The Ministry of Finance, The Swaziland Environmental Authority (SEA), and the Fuel Pricing Committee.

### **3.7 Any energy planning procedure in place**

The National Development Strategy (NDS) Unit is the main overall planning department. The unit manages the operationalisation of the National Development Strategy. The NDS consolidates all programmes aimed at achieving the National Vision. The work involves a lot of planning, monitoring and liaison with implementing agencies on the goals and objectives of their various programmes and the impact these have on achieving the National Vision. The work of the Unit therefore brings together policy, strategic planning, the capital programme and the budget and requires regular liaison and communication with all players in the economy. The National Development Strategy document was completed in September 1997.

The Ministry of Natural Resources and Energy is responsible for overall policy planning. The Ministry's planning procedures are the National Energy Policy 2002.

The Ministry of Natural Resources and Energy supports the position that investment in energy and industrial development in a sustainable manner, can eradicate poverty in the country and that rural electrification will continue to be a priority for the State.

## Section 4: Energy regulation

### **4.1 Is there an energy or utility regulator? When was it established?**

The energy regulator was established by the Energy Regulatory Authority Act of 2007. The Act establishes an independent Energy Regulatory Authority as a body corporate with the power to sue and be sued in its own name.

### **4.2 Degree of independence of the regulator from government**

The regulatory body is qualified as independent. Regarding hearing applications for the generation, transmission, distribution and supply of electricity, the Authority is obliged by the Act to act in a just manner administratively. The Authority's decisions should be taken within a procedurally fair process and applicants for licenses should be heard before decisions against them are made. Decisions of the Authority must be reasonable and the determining factors should be disclosed if required. Any party aggrieved by the decision of the Authority may review the proceedings in a court of law. The Authority also has the powers to arbitrate disputes in the ESI and these services are available upon request.

### **4.3 Regulatory framework**

Recent legislative developments have introduced numerous changes in the Electricity Supply Industry (ESI). These changes are aimed at improving the operations of the organisation to ensure optimal and efficient utilization of resources. On the 1st of March 2007, the Electricity Act of 1963 was repealed, as a result of the promulgation of the Electricity Act of 2007 and the Swaziland Electricity Company Act of 2007.

The Electricity Act of 2007 provides for the regulation of the Electricity Supply Industry in Swaziland. It generally regulates the generation, transmission, distribution and supply of electricity in Swaziland. Any person generating, transmitting, distributing or supplying electricity in the country is required to be licensed by the Energy Regulatory Authority. Power activities for which a license include: generation, transmission, distribution, import, export, and supply of electricity; perform the functions of integrated power system operator; and off-grid and mini-grid supplies of electricity.

The Swaziland Electricity Company Act of 2007, which converts SEC into a company called "Swaziland Electricity Company" to take over assets, liabilities, rights & obligations of SEC.

The objectives of the company are to generate, transmit, distribute and supply electricity also to import and export it into and out of Swaziland. This new company will be subject to regulation by the Energy Regulatory Authority.

### **4.4 Regulator's roles – key tasks (e.g. price controls, promoting competition etc), actions to date, any action/role in the sustainable energy field)**

The following powers and functions have been given to the Authority to: receive and process applications for licenses; modify / vary licenses; approve tariffs, prices, charges and terms and conditions of operating a license; and monitor the performance and the efficiency of licensed operators.

#### **4.5 Role of government departments in energy regulation (both where a regulator exists and where there is no regulator)**

The Ministry of Finance, the Swaziland Environmental Authority (SEA), the Fuel Pricing Committee and the Renewable Energy Association of Swaziland (REAWSA) also play important roles in the regulatory process

#### **4.6 Have any regulatory barriers to sustainable energy been identified and if so what are they?<sup>4</sup>**

The main identified barriers (regulatory and others) include: mobilising funding for investment, which is a major bottleneck<sup>5</sup>, the size of the local energy market is very small, limited natural resources, diminishing power capacity in the Southern African region, Swaziland imports the bulk of its commercial energy from neighbouring countries, the high cost of Renewable energy technologies and the fact that investment flows are still insufficient.

In the power sector, Independent Power Producers were expected to increase after the enactment of the Electricity Act of 2007, however, this has not been the case. Swaziland established an Investment Promotion Agency (SIPA) which is doing everything possible to meet investors and address their concerns. Swaziland believes that investment in research and development in renewable energy technologies and clean energy technologies could assist in industrial development and sustainable development.

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<sup>4</sup> [http://www.mme.gov.na/energy/electricity/esj\\_public\\_presentation\\_document.htm](http://www.mme.gov.na/energy/electricity/esj_public_presentation_document.htm)

<sup>5</sup> [http://huwu.org/esa/sustdev/csd/csd14/statements/swaziland\\_energy\\_05may.pdf](http://huwu.org/esa/sustdev/csd/csd14/statements/swaziland_energy_05may.pdf)