

South Africa

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Main climate regulations, policies and authorities

1 International agreements

Do any international agreements or regulations on climate matters apply in your country?

South Africa ratified the United Nations Framework Convention on Climate Change (UNFCCC) in August 1997 and acceded to the Kyoto Protocol in July 2002.

As South Africa is classified as a non-Annex I country, it is not required to meet targets and timetables for emission reductions in the Kyoto Protocol. The first commitment period of the Kyoto Protocol ended in 2012. Heavier burdens are placed on developed nations (or Annex I countries) than on developing countries under the principle of 'common but differentiated responsibilities'.

Despite being classified as a non-Annex I country, at the Conference of Parties in Copenhagen in 2010, South Africa committed to lowering its greenhouse gas (GHG) emissions to 34 per cent below current expected levels by 2020 and 42 per cent below current trends by 2025. This commitment is conditional on a fair, ambitious and effective international climate change agreement being reached and financial and technological support being provided by developed countries.

The UNFCCC and Kyoto Protocol provide for several flexible mechanisms to enable developed countries, with emission-reduction commitments, to partially meet their commitments through investment in other countries. The continuation of the Kyoto Protocol was secured at the Conference of Parties meeting in Durban, South Africa, in December 2011. The second commitment period under the Kyoto Protocol began on 1 January 2013 and in terms of the Doha Amendment will end on 31 December 2020. The Doha Amendment is subject to the acceptance by Parties to the Kyoto Protocol and South Africa is yet to accept the Doha Amendment.

The clean development mechanism (CDM) (article 12 of the Protocol) enables developed countries or private companies to invest in GHG reduction projects in developing nations, thus earning saleable certified emission reduction credits (CERs), each equivalent to one tonne of CO₂. CDM project financiers can acquire these CERs to sell to signatory countries or private parties with emission targets or commitments.

South Africa has established a designated national authority (DNA) under the Department of Energy (DoE), to consider and approve CDM applications that will result in GHG emission reductions. This process is governed by regulations published under the National Environmental Management Act 1998 (the CDM Regulations).

South Africa produces significant CO₂ emissions and is part of the G5 group (countries with emerging economies). While South Africa has the 33rd highest GDP in the world (as at 2013), it faces immense socio-economic barriers, with a 25.5 per cent unemployment rate and inequitable distributions of wealth.

2 International regulations and national regulatory policies

How are the regulatory policies of your country affected by international regulations on climate matters?

As South Africa has no emission reduction obligations under the Kyoto Protocol, it is not directly affected by international climate change regulations. It has, however, shown its commitment to the Kyoto Protocol and the negotiations of a new protocol. A number of policy and legislative

instruments have been put in place regarding emission limits and tax incentives to reduce emissions.

The National Climate Change Response White Paper (NCCRWP), which replaced the National Climate Change Response Green Paper (NCCRGPP), published by the Department of Environmental Affairs (DEA), states that South Africa's climate change response objectives include making a fair contribution to the global effort to stabilise GHG concentrations in the atmosphere and incorporates the principles contained in the UNFCCC.

Addressing climate change imperatives while supporting economic growth was also identified as one of the main goals of South Africa's energy policy in the Outcome of the National Energy Summit (September 2007), the Energy Efficiency Strategy Reviewed (May 2009), the Resolutions of the Renewable Energy Summit (March 2009) and the Climate Change Policy Roundtable (May 2010).

3 Main national regulatory policies

Outline recent government policy on climate matters.

South Africa is developing its climate change policy. Certain policies and strategy documents have been published, which will guide future legislative developments. These policies are outlined below.

The New Growth Path

A policy published in 2010 that is aimed at enhancing growth, employment creation and equity. This sets out a programme to create jobs, through a series of partnerships between the state and the private sector that builds on strengths in the specified areas, including the green economy, expansions in construction and the production of technologies for solar, wind and biofuels, and it is supported by the draft plan for electricity (IRP), which proposes that green energy sources contribute 30 per cent of new energy generation in the next 20 years. Clean manufacturing and environmental services is projected to create 300,000 jobs over the next decade.

Integrated Resource Plan 2010–2030 (IRP 2010)

The IRP 2010 was published under the Electricity Regulation Act (2006) in 2010. It envisages new power being generated from a number of generation sources, specifically:

- nuclear: 9.6 gigawatts;
- coal: 6.3 gigawatts;
- wind power: 9.2 gigawatts;
- solar photovoltaic: 8.4 gigawatts;
- concentrated solar: 1 gigawatt; and
- other generation sources: 13.8 gigawatts.

The IRP 2010 is expected to be continuously updated by the DoE. An update to the IRP 2010 was published for public comment in 2013 and it was anticipated that the updated IRP 2013 would be promulgated in 2014. The updated IRP 2013 includes revised balanced scenarios for new capacity development, while considering key constraints and risks (such as the reduction of carbon emissions, new technology uncertainties, water usage, security of supply, regional development and integration and localisation and job creation), and also considers the aspirational economic growth suggested by the National Development Plan that was published by the National Planning Commission to provide clarity on national policy objectives and economic imperatives. The updated IRP 2013 also anticipates

that less capacity will be required by 2030. The update reduces the new power generated to:

- nuclear: 11.4 gigawatts;
- coal: 2.5 gigawatts;
- wind power: 4.4 gigawatts;
- solar photovoltaic: 9.7 gigawatts;
- concentrated solar: 3.3 gigawatt; and
- other generation sources: 14.3 gigawatts

National Climate Change Response White Paper

A NCCRWP was published in the government gazette on 19 October 2011. This replaced the NCCRG. The NCCRG commits South Africa's government to actively engage in international climate change negotiations, in order to secure an agreement to limit global temperature rise to 2°C. Adapting to and managing unavoidable climate change impacts through interventions that build and sustain South Africa's social, economic and environmental resilience is an objective of the policy.

It sets out strategies for various 'key sectors' that must contribute significantly to climate change mitigation. The energy, industry and transport sectors will require the most adaptation, while the water, agriculture and health sectors are also identified as important.

These strategies include: the roll-out of renewable energy; escalating carbon tax; exploring nuclear energy potential; increasing energy efficiency; and reducing GHG emissions. The NCCRG required that, by 2014, every government department and state-owned enterprise must have ensured that all policies, strategies, legislation and plans falling within its jurisdiction or sphere of influence are fully aligned with the NCCRG.

The NCCRWP focuses on adaptation, mitigation and mainstreaming 'climate-resilient development'.

According to the document, South Africa's overall approach to mitigation will include:

- adopting a 'carbon budget approach' to provide for flexibility and least-cost mechanisms for companies in each 'relevant sector and/or sub-sectors';
- where appropriate, translating carbon budgets into company-level desired emission reduction outcomes;
- requiring companies and economic sectors or sub-sectors for which desired emission reduction outcomes have been established to prepare and submit mitigation plans, setting out how they intend to achieve the desired emission reductions; and
- deploying a range of economic instruments to support the system of desired emission reduction outcomes.

Noting the need to limit 'jobs contraction' in areas of the economy 'where excessive carbon intensity is unsustainable', the NCCRWP points to a commitment on the part of government to promoting and expanding South Africa's 'green economy'. The policy will be reviewed every five years from the date of publication.

A framework for considering market-based instruments to support environmental fiscal reform in South Africa (the draft MBI policy) (April 2006)

In this draft policy the National Treasury assessed and recommended the role market-based instruments (MBIs), specifically environmentally-related taxes (ERT) and charges could have in supporting sustainable development and outlined the framework for considering the MBIs potential application.

Several MBIs have been introduced in the transport fuels sector, vehicle taxation, aviation taxes, product taxes and electricity. South Africa's commitment to address climate change through MBIs was also reiterated in the Minister of Finance's budget speech in February 2011. Funding amounting to 800 million rand has been allocated over the next three years for 'green economy' initiatives.

The budget speech indicated that the government intends to enact new laws, incorporating climate change MBIs proposed in the draft MBI policy, to encourage energy efficiency and reduce harmful emissions. These include:

- investment incentives for energy efficient equipment, by introducing an additional depreciation allowance;
- favourable tax treatment on income from primary CER sale; and

- increases from 1 October 2011 in the air passenger departure tax on flights to international destinations.

Certain laws incorporating climate change MBIs have already been enacted, including excise taxes on new motor vehicles that are not energy efficient. The 2014 budget speech indicated that the National Treasury and DEA agree that measures are required to address climate change and reduce emissions and these measures include the proposed carbon tax, environmental regulations and renewable energy projects. The National Treasury and DEA, however, in order to allow for further consultation, have postponed the implementation of the carbon tax to 2016.

The White Paper on Energy Policy (1998)

This policy recognises climate change as a factor in the development of energy policy.

The White Paper on Renewable Energy (2003)

The White Paper on Renewable Energy set a target of 10,000GWh of energy to be produced from renewable energy sources (biomass, wind, solar and small-scale hydro) by 2013. Significant progress has been made in renewable energy generation in the last 10 years.

Carbon Tax Policy Paper 2013

This policy paper, published by the National Treasury in May 2013, is an update of the Carbon Tax Discussion Paper published in December 2010. This paper discusses the introduction of a tax on carbon emissions and notes the requirement of adopting a 'multipronged policy approach' in dealing with climate change mitigation, comprising of market-based and regulatory measures, information awareness programmes and voluntary initiatives. This policy paper supports the implementation of a carbon price through a carbon tax as an instrument to encourage climate change mitigation as a complement to regulatory measures. It also highlights taking a carbon budgeting approach to measuring and monitoring the effectiveness of both existing and proposed policies, as well as identifying short-term flagship programmes that focus on the energy, transport and waste sectors.

The policy contemplates that a carbon tax will commence in January 2015, however, as noted above, the National Treasury has postponed the implementation of the carbon tax to 2016. The National Treasury further proposes that the tax be introduced at the rate of 120 rand per ton of carbon dioxide equivalent to be increased at a rate of 10 per cent per annum until 31 December 2019. A revised carbon tax regime with lower tax-free thresholds and a revised rate, which should commence on 1 January 2020, should be announced at the time of the annual budget in February 2019 at the latest.

4 Main national legislation

Identify the main national laws and regulations on climate matters.

Draft National Pollution Prevention Plan Regulations have been published under the National Environmental Management: the Air Quality Act (2004) (Air Quality Act) and a draft declaration of greenhouse gases as priority air pollutants (including Carbon Dioxide, Methane, Nitrous oxide, Hydrofluorocarbons, Perfluorocarbons and Sulphur hexafluoride) have been published. Once enacted, these regulations and declaration will together require emitters of GHGs to provide a pollution prevention plan to reduce GHG emissions to the DEA for consideration and approval.

Recent amendments to the Air Quality Act also enable the Minister of Environmental Affairs to make regulations regarding any matter necessary to give effect to the South Africa's obligations in terms of an international agreement relating to air quality and climate change.

Other legislation indirectly addresses climate change. The National Energy Act's (2008) (Energy Act) objectives include promoting diverse energy supplies from various sources. The Electricity Regulation Act (2006) also has among its objectives diverse energy sources and energy efficiency; the Electricity Regulations on New Generation Capacity were promulgated in terms of this Act in 2011, which apply, inter alia, to new renewable energy generation projects.

5 National regulatory authorities

Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

Various government departments are tasked with developing climate change strategies and policies, either directly or indirectly, and promoting renewable energy.

The DEA is the authority for climate change issues, with an air quality management and climate change branch. It is mandated to develop and implement legislation and other measures to protect citizens' rights to atmospheric quality not harmful to health and well-being. It drafted the NCCRWP and is leading the policy implementation process.

The DoE and National Treasury have presently taken the lead in fulfilling South Africa's objectives of increasing renewable energy generation, through the Renewable Energy Independent Power Producers Procurement Programme (REIPPP Programme). The DoE and its branches are also responsible for energy efficiency, energy planning (including renewable energy) and capital grants to renewable energy projects. The National Treasury was mandated to draft the MBI policy.

The DNA regulates CDM applications, including evaluating and approving the operation of CDM projects, as well as other functions related to the successful implementation of the CDM in South Africa, including the promotion of investment in CDM projects.

In terms of the Energy Act, the South African National Energy Development Institute (SANEDI) has been created as a successor to the South African National Energy Research Institute and the National Energy Efficiency Agency. The SANEDI's functions include directing, monitoring and conducting applied energy research and development, demonstration and deployment as well as undertaking specific measures to promote the uptake of Green Energy and Energy Efficiency in South Africa. SANEDI also advances innovation of clean energy solutions and rational energy use that effectively supports South Africa's national energy objectives and the transition towards a sustainable low carbon energy future, increase energy efficiency throughout the economy, optimise utilisation of finite energy resources, conduct energy research and implement technology development.

There is also a South African Tradable Renewable Energy Certificate Issuing Body (SATIB) being formed by the South African National Tradable Renewable Energy Certificate Team, under the DoE.

The National Energy Regulator of South Africa (NERSA) regulates electricity and issues licences to renewable energy producers supplying to the electricity grid.

General national climate matters

6 National emissions and limits

What are the main sources of emissions of greenhouse gases (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

The GHG Inventory for South Africa (2000 to 2010), which was published in August 2013 by the DEA, indicates the main sources of emissions are as follows:

- energy industries – solid fuels: 324,244Gg;
- transport: 42,515Gg;
- manufacturing and construction: 35,142Gg;
- enteric fermentation: 27,299Gg; and
- other sectors – solid fuels: 27,024Gg.

Due to the absence of GHG reduction targets and timetables, South Africa has no capping or limitation or reduction obligations on emission volumes that domestic sectors produce.

7 National emission projects

Describe any major emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

Clean Development Mechanism (CDM)

The main emission reduction projects have previously been CDMs. To date, there are 347 CDM projects that have been submitted to the DNA for approval. Of the 347 projects, 209 are at the Project Idea Note (PIN) and 138 are at the Project Design Documents (PDD) stages. Eighty PDDs have been registered by the CDM Executive Board as CDM projects (with 12 being issued with CERs). The remaining 58 are at different project cycle stages. The projects submitted to the DNA cover bio-fuels, energy efficiency, waste management, cogeneration, fuel switching and hydro-power, and include the following sectors, manufacturing, mining, agriculture, energy, waste management, housing, transport and residential.

Renewable Energy Independent Power Producer Procurement Programme (REIPPP Programme)

A request for proposals (RFP) by independent power producers for new generation capacity was published by the DoE in 2011. Following a Determination by the Minister of Energy on 1 August 2011, the REIPPP Programme RFP allocated generation capacities to the following renewable technologies:

- onshore wind: 1,850MW;
- concentrated solar power: 200MW;
- solar photovoltaic: 1,450MW;
- biomass: 12,5MW;
- biogas: 12,5MW
- landfill gas: 25MW; and
- small hydro (less than or equal to 10MW): 75MW.

In December 2012, the Minister of Energy made a second Determination, which allocated further generation capacities to various renewable technologies as follows:

- onshore wind: 1,470MW;
- concentrated solar power: 400MW;
- solar photovoltaic: 1,075MW;
- biomass: 47,5MW;
- biogas: 47,5MW and
- small hydro (less than or equal to 40MW): 60 MW

In terms of the REIPPP Programme, successful bidders sign a power purchase agreement with Eskom Holdings SOC Ltd, South Africa's sole electricity supplier. Bid replies have been submitted for four bid submission windows (and one CSP only submission window) and to date under bid window 1, 28 power purchase agreements have been entered into and under bid window 2, 19 power purchase agreements have been entered into. Financial close for bid window 3 is expected in late 2014, the bid window 4 and the CSP only bid window in 2015. More than 3000MW have been procured to date under this programme with approximately 1000MW available per annum for allocation.

The Carbon Capture and Sequestration Flagship Programme

The programme includes, among other initiatives, the development of a Carbon Capture and Sequestration Demonstration Plant to store the process emissions from an existing high carbon emissions facility. This includes undertaking technical development of carbon capture and storage. The South African Centre for Carbon Capture and Storage is the responsible authority for carbon capture and storage activities and undertakes carbon capture and storage research and development and capacity building (both human and technical) to attain a state of country readiness for the implementation of carbon capture and storage in South Africa.

The Adaptation Research Flagship Programme

The Adaptation Research Flagship Programme involves the design and roll-out of a national and regional research programme to scope sectoral adaptation requirements and costs and identify adaptation strategies with cross-sectoral linkages and benefits, including an assessment of climate change vulnerabilities in the sub-region, with a detailed scenario planning process to define potential sub-regional response strategies. This requires the projection of climate change impacts for key sectors and an evaluation

of their socio-economic implications in the context of development needs and aspirations of these sectors. This process is being followed in two major phases, which include building a sub-national and national 'scenario scape' within which adaptation to climate change will occur, and considers the need to assess the extent to which the regional and international context might influence the national adaptation response.

The Waste Management Flagship Programme

This programme is intended to establish the GHG mitigation potential of the waste management sector, including investigating waste-to-energy opportunities that will be used to develop and implement a detailed Waste-Related GHG Emission Mitigation Action Plan aimed at measurable GHG reductions aligned with any sectoral carbon budgets that may be set. This Action Plan will also detail the development and implementation of any policy, legislation and regulations required to facilitate the implementation of the plan.

The Energy Efficiency and Energy Demand Management Flagship Programme

This project aims to replace inefficient buildings, traffic and street lights with energy efficient technologies and the installation of low-pressure solar water heating systems in low-income households. The programme also focuses on identifying and promoting more efficient ways to use electricity through the implementation of technology enhancements and behaviour change. The majority of savings in the residential sector have been achieved through the implementation of large-scale mass rollouts replacing incandescent light bulbs with compact fluorescent lamps (CFLs) and, up until the end of the 2010-2011 financial year, over 47 million CFLs had been installed in the residential sector nationwide, bringing about demand savings of 1,958MW and creating over 30,000 temporary jobs nationally.

Domestic climate sector

8 Domestic climate sector

Describe the main commercial aspects of the climate sector in your country, including any related government policies.

Commercial aspects in the South African climate sector increased significantly in 2011, with the DoE's REIPP Programme RFP, which has attracted worldwide investment in renewable energy projects.

The other main potential commercial application in the climate sector is CDMs. Few CDMs have, however, been registered in South Africa. According to the UNFCCC home page, of the 7,538 CDMs registered worldwide, only 187 are in Africa (2.4 per cent) and 54 in South Africa (the South African Designated National Authority has the total number of registered South Africa projects at 80 rather than 54, but this is still just a small percentage of the total CDM projects worldwide). These potential commercial benefits have therefore not been realised.

General emissions regulation

9 Regulation of emissions

Do any obligations for emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

As a non-Annex I country, South Africa and domestic private parties presently have no Kyoto Protocol or international obligations relating to emission limitation, reduction or removal in the first stage of commitment and continued into the second stage of commitment.

The Minister of Energy has signed a Voluntary Energy Efficiency Accord with over 32 large industrial consumers and voluntary energy efficiency standards have been compiled. The Energy Efficiency Strategy sets a national target for energy savings of at least 12 per cent by 2015, broken down into sectoral targets. The national target is voluntary, but sub-sectoral targets may become mandatory.

10 Emission permits or approvals

Are there any requirements for obtaining emission permits or approvals? If so, describe the main requirements.

Emission permits or approvals for GHG are presently not required.

The Air Quality Act governs air emissions generally and has licensing requirements for air emission activities listed under it. These include

activities emitting SO₂, NO_x and CO, as well as hydrogen chloride, hydrogen fluoride, dioxins and furans.

11 Oversight of emissions

How are emissions monitored, reported and verified?

The National Ambient Air Quality Standards, published under the Air Quality Act were amended in November 2013. The National Ambient Air Quality Standards identify substances that are a threat to health, well-being or the environment and include indirect GHGs. These standards require reduction within specified time frames for each listed substance in respect of its specific concentration.

Lists of activities and associated minimum emission standards were published in terms of the Air Quality Act, for which atmospheric emissions licences are required, and which also regulates how emissions should be measured: undertaking compliance monitoring and annual reporting to the licensing authority.

Emission allowances (or similar emission instruments)

12 Regime

Is there an emission allowance regime (or similar regime) in your country? How does it operate?

There is no emission allowance regime.

13 Registration

Are there any emission allowance registries in your country? How are they administered?

Other than the DNA, which registers CDM projects, there is no domestic register.

14 Obtaining, possessing and using emission allowances

What are the requirements for obtaining emission allowances? How are allowances held, cancelled, surrendered and transferred?

Not applicable.

Trading of emission allowances (or similar emission instruments)

15 Emission allowances trading

What emission trading systems or schemes are applied in your country?

Emission trading

The Kyoto Protocol's International Emissions Trading is limited to countries with targets and timetable commitments.

South Africa, therefore, has no capping of domestic industries emissions or any formal emission trading, and no regulatory or voluntary 'cap-and-trade' market exists, as in many Annex I nations. The Johannesburg Stock Exchange trades carbon credits, but the carbon market is in its infancy.

South Africa's only carbon trading is through derivatives. In 2005 Sterling Waterford Holdings released a carbon credit derivative and carbon investment product. The notes are bought and sold as derivatives, with carbon credits as the underlying security. The carbon credit note (CCN) is a prepaid forward contract, being a fully underwritten obligation of the issuer to deliver either a carbon credit or cash equivalent on the delivery date. It is fully tradable and saleable. Delivery of the carbon credits is obtained by contracting with various countries through established intermediaries. Investors do not have to participate directly in CDMs.

The company also released a fixed-interest carbon credit-linked instrument – the collateralised enhanced yield certificate. Sterling Waterford Holdings is presently marketing a carbon note release to European investors and hedge funds and looking to diversify the market with hybrid products based on CCNs, such as high-yield bonds. Sterling Waterford is the issuer of the second listed carbon credit note after a successful listing of the first carbon credit note in 2005.

There have been no other such derivative listings by other investors.

Trading CERs through CDMs

As developing countries have not agreed to emissions reduction targets, they presently only participate in international emission trade through CERs generated from CDMs. In return for CDM investments, the CDM Executive Board issues CERs, acquired by developed-nation investors to be used alongside other Kyoto credits to satisfy their emission limitation obligations and reduction commitments. CERs can also be transferred between developed nations and their public and private enterprises requiring them for compliance, and traded on compliance markets.

Under the CDM Regulations, CERs constitute real property rights and are transferable. Once CDMs are registered, resultant CERs can be bought, sold, traded, transferred or delivered, even before projects begin. The South African requirements for eligibility of a CDM are based on article 12 of the Kyoto Protocol.

16 Trading agreements

Are any standard agreements on emissions trading used in your country? If so, describe their main features and provisions.

There are no standard agreements but parties have the freedom to contract as they choose in South Africa. Most emissions trading agreements that have been drafted for other jurisdictions can be made applicable in South Africa with minimal amendments.

Sectoral regulation

17 Energy production, use and efficiency

Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on emissions. Describe any obligations on the state and private persons for minimising energy use and improving efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

Production and consumption of non-renewable energy

At present, coal dominates South Africa's indigenous energy resource base, with the world's sixth-largest coal reserves providing 77 per cent of primary energy needs. Most of South Africa's liquid fuel requirements are imported in the form of crude oil. It has a highly developed synthetic fuel industry, largely sourced from coal. South Africa's economy consists of large-scale, energy intensive primary sector industries, with energy intensity at above-average levels (11th globally). Its energy sector is economically critical, contributing about 15 per cent of its GDP, as in 2009. Due to large coal deposits, South Africa is one of the cheapest electricity suppliers in the world.

In 2009, DoE statistics indicated that non-renewable energy sources include coal (70 per cent), oil (13 per cent), gas (3 per cent) and nuclear (3 per cent). 2012 IEA statistics reflect the following non-renewable energy supply and use in terms of total primary energy supply (TPES) and total final consumption (TFC) in thousand tonnes of oil equivalent (ktoe), on a net calorific value basis:

	TPES	TFC
Coal and peat	97,058	16,933
Crude oil	20,783	0
Oil products	-120	24,413
Gas	4,035	1,705
Nuclear	3,407	0

Regulations on emissions

At present, there are no international regulatory obligations that apply to South Africa.

The Air Quality Act's licensing requirements for listed activities and minimum emission standards published under this Act, which include reduction obligations on indirect GHGs, regulates various sectors, including non-renewable energy production for electricity generation from combustion installations utilising solid and liquid fuel, solid biomass and gas. Activities involving petroleum, carbonisation and coal gasification are also regulated.

Limitation or reduction of energy use and energy efficiency improvement

South Africa has no international obligations to reduce energy use or implement energy efficiency improvement. Except for the reduction obligations published in respect of the Air Quality Act, there are also no domestic obligations in respect of the reduction of GHGs at the moment.

Legislation has, however, been implemented and strategies published that promote reduction of energy use and energy efficiency.

The Energy Efficiency Strategy, published on 26 June 2009, sets national targets for energy savings of at least 12 per cent to be achieved by 2015. It plans to achieve energy efficiency through enabling instruments and interventions, including economic and legislative measures; information activities; energy labels; energy performance standards; energy audits and management; and promotion of efficient technologies.

The Energy Act is the enabling legislation to ensure availability of diverse energy resources and promote energy efficiency and has incorporated the objectives of energy efficiency from the Energy Efficiency Strategy. It provides for regulations to be published under it to meet these objectives.

Energy Efficiency and Demand Side Management (EEDSM) is included as an objective in the IRP 2010. It is recognised that by increasing EEDSM the carbon emission target can be reached while reducing the need for additional capacity.

Schemes for registration of energy savings and energy efficiency

The Energy Act mandates the DoE to provide for energy planning and measures for furnishing data relating to energy demand, supply and generation. The South African National Energy Development Institute (SANEDI) was also established under the Energy Act of 2008 to conduct national energy research and development and undertake energy efficiency measures, aligned with the objectives of the Energy Act.

Regulations on the allowance for energy efficiency savings were published on 16 September 2011 under the Energy Act. These Regulations provide for the procedures of claiming allowances from SANEDI; the annual registration with SANEDI, in respect of energy efficiency savings and the submission of reports for purposes of evaluation.

Schemes for trade of related accounting units or credits

South Africa has no international obligations or domestic schemes yet for such trade.

18 Other sectors

Describe, in general terms, any regulation on emissions in connection with other sectors.

South Africa has no international obligations to regulate emission in other sectors.

Except for the requirements under the Air Quality Act for listed emission activities, there is no domestic regulation of other sectors.

The Air Quality Act is applicable to certain emission activities from the following industries: metallurgical; mineral processing; chemical production; waste incineration; pulp and paper manufacturing; and animal matter processing, which could result in the emissions of, inter alia, SO₂, NO_x, CO as indirect GHGs.

Renewable energy and carbon capture

19 Renewable energy consumption, policy and general regulation

Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

South Africa has high renewable energy potential, including abundant wind resources, among the highest solar radiation levels in the world (with the average daily solar radiation varying between 4.5 and 6.5kWh per m²) and excellent potential for use of paper and pulp, bagasse and other biomass by-products. South Africa generally has low rainfall, limiting hydro-electric power generation.

These resources have been largely unexploited; however, this is beginning to change with recent developments in the renewable energy sector.

Policies on renewable energy

Integrated Resource Plan for Electricity: As discussed above, while not a policy on renewable energy, the IRP 2010 plans to generate power from renewable energy sources. The use of renewable energy is likely to increase significantly with the RFP.

Present production and consumption of renewable energy

The 2012 IEA statistics reflect the following renewable energy supply and use in terms of total primary energy supply (TPES) and total final consumption (TFC) in thousand tonnes of oil equivalent (ktoe) on a net calorific value basis:

	TPES	TFC
Hydro	171	0
Geothermal, solar, etc	91	78
Combustible, renewable and waste	15,011	10,993

Obligations and applicable rules for renewable energy production or use

There are no general rules and obligations for renewable energy production or use. If renewable energy projects are obtained through a procurement process by government, such as the RFP, the project company would need to comply with the rules and obligations contained in the bid documentation (such as local shareholders, community upliftment and complying with qualification criteria, which includes land use requirements and obtaining consents from various authorities necessary for implementation of a project). The obligations in the standard power purchase, transmission and generation agreements contained in the bid documentation would also need to be complied with.

The requirements for specific renewable energy projects, in terms of licensing requirements and obtaining consents from the relevant authorities, are discussed below.

Schemes for registration of renewable energy production and use and for trade of related accounting units or credits

Tradable renewable energy certificates can initially be obtained by registering a renewable energy generation as a renewable energy production device, which is done by completing the renewable energy declaration process. This will involve an inspection of the generation system under the auspices of the SATIB. As SATIB is still being formed, registration is being undertaken by suitably qualified energy consultancies and GreenX Energy maintains the central certificate register.

20 Wind energy

Describe, in general terms, any regulation of wind energy.

There are no specific regulations on wind energy, unless it is utilised to generate electricity onto the power grid under the REIPPP Programme or otherwise. An application to generate electricity must then be submitted to NERSA, under the Electricity Regulation Act 2006.

Responsibilities and obligations include licence obligations, such as reporting renewable energy volumes generated; monitoring and verification; and termination conditions for non-compliance. NERSA conducts verification and monitoring. Producers connecting to distribution and transmission systems must adhere to the South African Distribution and Grid Code respectively and submit annual renewable energy power generation reports to NERSA.

NEMA requires environmental authorisations for specified listed activities with certain thresholds, for which an environmental impact assessment or basic assessment may be a requirement before environmental authorisation will be granted. Relevant activities may include construction of facilities or infrastructure for generation, transmission or distribution of electricity; transformation of undeveloped land; vegetation clearance and construction of roads.

Other consents that may be necessary include water use licences, if water uses under the National Water Act are undertaken. Rezoning permission may be required. If agricultural land is to be subdivided for a wind project, consent from the Minister of Agriculture is required.

Consent from the Civil Aviation Authority is required for wind farms. Permits for removal or destruction of protected flora or relocation of fauna could be required.

Consent to conduct activities that result in the operation, construction or expansion of facilities for the generation, transmission or distribution of electricity in a core or central astronomy advantage area may also be required.

21 Solar energy

Describe, in general terms, any regulation of solar energy.

There are no specific regulations on solar energy unless it is utilised to generate electricity onto the power grid. The general regulations and consents mentioned in respect of wind energy may apply. Water use licences may be required for water uses, such as water used for cooling or the discharge of waste water from the cleaning of the solar panels into the environment.

22 Hydropower, geothermal, wave and tidal energy

Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

There are no specific regulations on these energy sources, unless they are being utilised to generate electricity onto the power grid.

Geothermal, wave and tidal energy projects have not yet been introduced into South Africa and have not been included in the RFP.

Hydropower

An environmental authorisation may be necessary. The National Water Act 1998 would also require a water licence.

Tidal and wave energy

Environmental authorisations may be necessary and a water licence would possibly also be required.

Coastal leases and concessions over coastal public property would be required in terms of the National Environmental Management: Integrated Coastal Management Act 2009 (the Coastal Act).

Geothermal energy

An environmental authorisation may be necessary.

23 Waste-to-energy

Describe, in general terms, any regulation of production of energy based on waste.

There are no specific regulations on this form of energy unless it generates electricity onto the power grid, which requires the licences specified above. An environmental authorisation would likely be required.

In addition, the National Environmental Management: Waste Act 2008 requires licences for various listed activities. Several of these activities relate to waste energy plants, should their capacity be greater than specified in the Waste Act.

24 Biofuels

Describe, in general terms, any regulation of biofuels.

Biofuel producers may require a licence from the petroleum products controller under the Petroleum Products Act 1977 for manufacturing, wholesaling or retailing petroleum products, and also a site licence.

Additionally, environmental authorisations, an atmospheric emissions licence, water use licences and waste management licences may also be required, depending on the nature of the project.

25 Carbon capture and storage

Describe, in general terms, any policy on and regulation of carbon capture and storage.

CCS is not specifically regulated in South Africa. However, the nature of the activity for the capturing and storage of the carbon will dictate whether an environmental authorisation, waste management licence, atmospheric emissions licence or water use licence would be required.

Climate matters in transactions

26 Climate matters in M&A transactions**What are the main climate matters and regulations to consider in M&A transactions and other transactions?**

The main climate matters and regulations to consider in M&A transactions and other transactions are:

- South Africa's status as a non-Annex I country;
- the DNA Regulations, any CDM projects registered, the transaction's impact on such projects and similarly the impact on any CERs;
- any licences issued by NERSA for electricity generation;
- any environmental authorisations, atmospheric emissions licence, waste management licences and water use licences required;
- the Voluntary Energy Efficiency Accord, signed by 53 large industrial consumers of energy and the voluntary energy efficiency standards;
- qualification criteria under a government renewable energy procurement programme, such as the RFP; and
- South Africa's Integrated Resource Plan, to ascertain whether a type of renewable energy is included.

Update and trends

The government has recently placed significant emphasis on the development of a framework to facilitate higher development of shale gas. The DoE is expected to release the Gas Utilisation Master Plan (GUMP) for public comment, which is intended to provide a framework for investment in gas-supporting infrastructure and to outline the role that gas can play in the electricity, transport, domestic, commercial and industrial sectors. The GUMP is anticipated as it will not only consider various gas supply options, including the importation of liquefied natural gas, as well as piped gas from neighbouring countries, it also explores the potential for domestic production of natural and shale gas, as well as coal bed methane.

The Minister of Energy, in her 2014 Policy Budget Speech, indicated that the gas infrastructure development effort is accordingly premised on regional integration with Mozambique in the east, the importation of liquefied natural gas and the networking of various load centres for transporting and storing shale gas from the Karoo. This is in line with the requirements of the IRP 2010, which targets 2500MW of new gas-fired power generation capacity. PetroSA has been issued with a dedicated focus on gas resource, and has established a unit to ensure it is prepared for shale gas activities.

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