

Annexure C

POLICY CONTEXT AND FORWARD PLANNING OF ENERGY IN SOUTH AFRICA

This annexure provides an overview of the policy and legislative context in which the development of renewable energy projects takes place in South Africa. The following policies and legislative context are described:

- Policies regarding greenhouse gas and carbon emissions;
- White Paper on the Energy Policy of the Republic of South Africa (1998);
- White Paper on Renewable Energy (2003);
- National Energy Act (No. 34 of 2008) and Electricity Regulation Act (ERA) (No. 4 of 2006);
- Integrated Energy Plan for the Republic of South Africa (2003);
- Integrated Resource Plan (2010); and
- Regional Methodology for Wind Energy Site Selection (Department of Environmental Affairs and Development Planning (DEA&DP), 2006 Guideline document).
- International Finance Corporation Performance Standards
- Equator Principles

1. Policies regarding greenhouse gas and carbon emissions

Gases that contribute to the greenhouse effect are known to include carbon dioxide (CO₂), methane, water vapour, nitrous oxide, chlorofluorocarbons, halons and peroxyacetyl nitrate. All of these gasses are transparent to shortwave radiation reaching the earth's surface, but trap long-wave radiation leaving the earth's surface. This action leads to a warming of the earth's lower atmosphere, resulting in changes in the global and regional climates, rising sea levels and extended desertification. This in turn is expected to have severe ecological consequences and a suite of implications for mankind.

Electricity generation using carbon based fuels is responsible for a large proportion of CO₂ emissions worldwide. In Africa, the CO₂ emissions are primarily the result of fossil fuel burning and industrial processes, such as coal fired power stations. South Africa accounts for some 38 % of Africa's CO₂ emissions. The global per capita CO₂ average emission level is 1.23 metric tonnes. In South Africa however, the average emission rate is 2.68 metric tonnes per person per annum. The International Energy Agency (IEA) (2008) "*Renewables in global energy supply: An IEA facts sheet*" estimates that nearly 50% of global electricity supplies will need to come from renewable energy sources in order to halve carbon dioxide emissions by 2050 and minimise significant, irreversible climate change impacts.

The United Nations Framework Convention on Climate Change (UNFCCC) has initiated a process to develop a more specific and binding agreement on the reduction of greenhouse gas (GHG) emissions. This led to negotiations with a particular focus on the commitments of developed

countries, and culminated in the adoption of the Kyoto Protocol in 1997, which came into effect in February 2005. Using the above framework to inform their approach, the Kyoto Protocol placed specific legal obligations in the form of GHG reduction targets on developed countries and countries with 'Economies in Transition'. The developed countries listed in Annex 1 of the UNFCCC are required to reduce their overall emissions of six GHGs by at least 5 % below the 1990 levels between 2008 and 2012. While South Africa, as a developing country, was not obliged to make such reductions, the increase in greenhouse gas emissions must be viewed in light of global trends to reduce these emissions significantly. More recently under the Copenhagen Accord 2010, countries representing over 80 % of global emissions submitted pledges on emission reductions. South Africa commitment is to reduce GHG emissions by 34 % by 2020 and 42 % by 2025.

The Kyoto Protocol, to which South Africa is a signatory, was informed by the principles of sustainable development which resulted in related policies and measures being identified to promote energy efficiency while protecting and enhancing the 'sinks and reservoirs' of greenhouse gases (forests, ocean, etc.). Other methods/approaches included encouraging more sustainable forms of agriculture, in addition to increasing the use of new and renewable energy and the adoption/implementation of advanced and innovative environmentally sound technologies. South African policies are being informed by the Kyoto Protocol (which is valid until 2012) and its partial successor the Copenhagen Accord 2010 and associated sustainable development principles whereby emphasis is being placed on industries for 'cleaner' technology and production.

2. White Paper on the Energy Policy of the Republic of South Africa (1998)

As required by the Constitution of the Republic of South Africa (Act No. 108 of 1996), the White Paper on the Energy Policy of the Republic of South Africa (1998) was published by the Department of Minerals and Energy in response to the changing political climate and socio-economic outlook. Key objectives are identified in terms of energy supply and demand, as well as co-ordinated with other social sectors and between energy sub-sectors.

The White Paper commits to government's focused support for the development, demonstration and implementation of renewable energy sources for both small and large-scale applications.

While considering the larger environmental implications of energy production and supply, the White Paper looks into the future to adopting an integrated resource planning approach, integrating the environmental costs into economic analysis. It is with this outlook that the renewable energy is seen as a viable, attractive and sustainable option to be promoted as part of South Africa's energy policy towards energy diversification.

3. White Paper on Renewable Energy (2003)

Published by the Department of Minerals and Energy (DME) in 2003, the White Paper on renewable Energy supplements the above-mentioned Energy Policy which identified the medium- and long-term potential for renewable energy as significant. The White Paper sets out the vision, policy principles, strategic goals, and objectives in terms of renewable energy. At the outset the policy refers to the long term target of "10 000 GigaWatt hours (GWh) (0.8 Mtoe) renewable energy contribution to final energy consumption by 2013." The aim of this 10-year plan is to meet this goal via the production of mainly biomass, wind, solar, and small-scale hydro sources. It is estimated that this would constitute approximately 4 % of projected energy demand for 2013.

The White Paper presents South Africa's options in terms of renewable energy as extensive and a viable and sustainable alternative to fossil fuel options. A strategic programme of action to develop South Africa's renewable energy resources is proposed, particularly for power generation and reducing the need for coal-based power generation. The starting point will be a number of initial investments spread across both relatively low cost technologies, such as biomass-based

cogeneration, as well as technologies with larger-scale application, such as solar water heating, wind and small-scale hydro.

Addressing environmental impacts and the overarching threats and commitments to climate change, the White Paper provides the platform for further policy and strategy development in terms of renewable energy in the South African energy environment.

4. National Energy Act (No. 34 of 2008) and Electricity Regulation Act (No. 4 of 2006)

South Africa has two acts that direct the planning and development of the country's electricity sector:

- The National Energy Act (No. 34 of 2008); and
- The Electricity Regulation Act (ERA) (No. 4 of 2006).

In May 2011, the Department of Energy (DoE) gazetted the Electricity Regulations on New Generation Capacity under the ERA. The New Generation Regulations establish rules and guidelines that are applicable to the undertaking of an IPP Bid Programme and the procurement of an IPP for new generation capacity. They also facilitate the fair treatment and non-discrimination between IPPs and the buyer of the energy¹.

In terms of the New Generation Regulations, the Integrated Resource Plan (IRP) (see **Section 7**) has been developed by the DoE and sets out the new generation capacity requirement per technology, taking energy efficiency and the demand-side management projects into account. This required, new generation capacity must be met through the technologies and projects listed in the IRP and all IPP procurement programmes will be undertaken in accordance with the specified capacities and technologies listed in the IRP².

5. IPP Procurement Process

South Africa aims to procure 3 725 MW capacity of renewable energy by 2016 (the first round of procurement). This 3 725 MW is broadly in accordance with the capacity allocated to renewable energy generation in IRP2010.

On 3 August 2011, DoE formally invited interested parties with relevant experience to submit proposals for the finance, operation and maintenance of renewable energy generation facilities adopting any of onshore wind, solar thermal, solar photovoltaic, biomass, biogas, landfill gas or small hydro technologies for the purpose of entering, *inter alia*, an Implementation Agreement with DoE and a Power Purchase Agreement with a buyer (Eskom)³ in terms of the ERA. This Request for Qualification and Proposals (RFP) for new generation capacity was issued under the IPP Procurement Programme. The IPP Procurement Programme has been designed to contribute towards the target of 3 725 MW and towards socio-economic and environmentally sustainable growth, and to start and stimulate the renewable industry in South Africa⁴.

In terms of this IPP Procurement Programme, Bidders will be required to bid on tariff and the identified socio-economic development objectives of DoE. The tariff will be payable by the Buyer should the project be selected. Although earlier information was that the 2009 Renewable Energy Feed In Tariff would act as an upper limit on price, the actual caps are set out in **Table 1**⁵. A bid will be 'non-compliant' and automatically rejected during the qualification phase if the price cap is

¹ <http://www.eskom.co.za/c/73/ipp-processes/> (accessed 29/10/11)

² <http://www.eskom.co.za/c/73/ipp-processes/> (accessed 29/10/11)

³ http://www.ipp-renewables.co.za/wp-content/uploads/2011/08/Tender_Notice.png (accessed 30/10/11)

⁴ <http://www.ipp-renewables.co.za/> (accessed 30/10/11)

⁵ <http://www.nortonrose.com/knowledge/publications/54959/south-africa-renewable-energy-ipp-request-for-proposals> (accessed 30/10/11)

exceeded. Bid Responses which are submitted must be accompanied by a Bid Guarantee in the form of a bank guarantee for an amount equal to R 100 000 per MW of the proposed installed capacity⁶.

The generation capacity allocated to each technology is set out in **Table 1**.

Table 1: Generation capacity and price cap per each technology

Technology	MW	Price cap (per MWh)
Onshore wind	1 850	R 1 150
Concentrated solar thermal	200	R 2850
Solar photovoltaic	1 450	R 2850
Biomass solid	12.5	R 1070
Biogas	12.5	R 800
Landfill gas	25	R 600
Small hydro	75	R 1 030
Small projects ⁷	100	As above
TOTAL	3 725	

Each project procured in terms of this IPP Procurement Programme will be required to achieve commercial operation by not later than end 2016.

The selection process to determine the preferred bidders will be based on both price and other economic development criteria in a 70 %/ 30 % ratio respectively (Creamer, T. 2011). If the maximum MW allowance for any particular technology has been allocated during any particular window, then the subsequent bidding opportunities will not be opened for that technology.

IPPs that wish to connect to Eskom's network will be required to apply for a connection, pay a connection charge and sign a connection and use-of-system agreement⁸. All IPPs will be provided non-discriminatory access to Eskom's network, subject to the IPP's obtaining its required approvals such as EIA's and a generating and trading licence from NERSA.

6. Integrated Energy Plan for the Republic of South Africa

Commissioned by DME in 2003, the Integrated Energy Plan (IEP) aims to provide a framework in which specific energy policies, development decisions and energy supply trade-offs can be made on a project-by-project basis. The framework is intended to create a balance in providing low cost electricity for social and economic developments, ensuring security of supply, and minimising the associated environmental impacts.

The IEP projected that the additional demand in electricity would necessitate an increase in electricity generation capacity in South Africa by 2007. Furthermore, the IEP concluded that, based on energy resources available in South Africa, coal would be the primary fuel source in the 20 year planning horizon, which was specified as the years 2000 to 2020, although other cleaner technologies continue to be investigated as alternatives in electricity generation options. Therefore, though the next two decades of energy generation are anticipated to remain coal-based, alternative technologies and approaches are available and need to be contextually considered.

⁶http://www.ipp-renewables.co.za/wp-content/uploads/2011/08/Tender_Notice.png (accessed 30/10/11)

⁷ Small projects are less than 5 MW.

⁸ <http://www.eskom.co.za/c/article/150/independent-power-producers-ipp/> (accessed 30/10/11)

7. Integrated Resource Plan

The Integrated Resource Plan (IRP) is a National Electricity Plan, which is a subset of the Integrated Energy Plan. The IRP is also not a short or medium-term operational plan but a plan that directs the expansion of the electricity supply over the given period.

The IRP, indicating the schedule for energy generation programmes, was first gazetted on 31 December 2009. A revised schedule was gazetted on 29 January 2010 and the schedule has once again been revised and the final IRP (IRP2010-2030) was gazetted on 6 May 2011.

Developed for the period of 2010 to 2030, the primary objective of the IRP2010, as with its predecessors, is to determine the long-term electricity demand and detail how this demand should be met in terms of generating capacity, type, timing, and cost. While promoting increased economic development through energy security, the IRP2010 aims to achieve a *“balance between an affordable electricity price to support a globally competitive economy, a more sustainable and efficient economy, the creation of local jobs, the demand on scarce resources such as water and the need to meet nationally appropriate emission targets in line with global commitments”*.

As can be seen by **Table 2** below the current final IRP provides for an additional 20 409 MW (shaded in grey) of renewable energy in the electricity mix in South Africa by 2030.

Table 2: Policy adjusted scenario of the IRP2010 as gazetted on 6 May 2011

Technology	Total generating capacity in 2030		Capacity added (including committed) from 2010-2030		New (uncommitted) capacity options from 2010-2030	
	MW	%	MW	%	MW	%
Coal	41 074	45.9	16 383	29.0	6 250	14.7
OCGT	7 330	8.2	4 930	8.7	3 910	9.2
CCGT	2 370	2.6	2 370	4.2	2 370	5.6
Pumped Storage	2 912	3.3	1 332	2.4	0	0
Nuclear	11 400	12.7	9 600	17.0	9 600	22.6
Hydro	4 759	5.3	2 659	4.7	2 609	6.1
Wind	9 200	10.3	9 200	16.3	8 400	19.7
CSP	1 200	1.3	1 200	2.1	1 000	2.4
PV	8 400	9.4	8 400	14.9	8 400	19.7
Other	890	1.0	465	0.8	0	0
Total	89 532	100	56 539	100	42 539	100

The final IRP2010 reflects both the consultation process on the draft IRP2010 currently being undertaken with stakeholders and the further technical work undertaken in this period. It is noted that *“given the rapid changes in generation technologies and pricing, especially for “clean” energy sources, the IRP will have to be reviewed on a regular basis, for instance every two years, in order to ensure that South Africa takes advantage of emerging technologies. This may result in adjustments in the energy mix set out in the balanced revised scenario within the target for total system capacity.”*

8. International Finance Corporation Performance Standards

Most lending institutions require compliance with the International Finance Corporation (IFC) standards. The first step is to screen the projects to decide on the nature and extent of the

environmental assessment needed for the project. Projects are categorized by the Environment Division into environmental review category A, B, C, or FI in accordance with IFC's OP 4.01, Environmental Assessment. The classification of a project depends on the type, location, sensitivity, and scale of the project, as well as the nature and magnitude of its potential impacts. IFC uses four categories for its projects. They are defined as follows:

- **Category A:** A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These projects may affect an area broader than the sites or facilities subject to physical works. EA for a Category A project examines the project's potential positive and negative impacts, compares them with those of feasible alternatives (including the "without project" scenario), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and to improve performance. For a Category A project, the project sponsor is responsible for preparing a full report, normally an Environmental Impact Assessment (EIA) and for preparing and updating an Environmental Action Plan (EAP).
- **Category B:** A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas – including wetlands, forests, grasslands, and other natural habitats – are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more readily than for Category A projects. The scope of EA for a Category B project may vary from project to project, but it is narrower than that of EA for a Category A project. Like Category A EA, it examines the project's potential positive and negative impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. The project sponsor is responsible for providing the required environmental and social information. The findings and results of Category B EA are described in the project documentation (i.e. Environmental Review Summary).
- **Category C:** A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required for a Category C project.
- **Category FI:** A proposed project is classified as Category FI if it involves investment of IFC funds through a financial intermediary in subprojects that may result in adverse environmental impacts. In addition, in some financial markets projects IFC funds are not targeted to specific subprojects (e.g. equity in a financial institution such as a commercial bank), but the financial institution has operations which may have adverse environmental impacts (e.g. project finance). In such cases IFC may also classify the project as Category FI. If subprojects potentially result in minimal or no adverse environmental impacts, the project is characterized as C.

When the screening process determines, or national legislation requires, that any of the environmental and social issues identified warrant special attention, the findings and results of EA for Category B projects may be set out in a separate report. Depending on the type of project and the nature and magnitude of the impacts, this report may include, for example, a limited environmental impact assessment, an environmental mitigation or action plan, an environmental audit, a limited resettlement plan, a limited indigenous peoples' action plan, or a hazard assessment. For Category B projects that are not in environmentally sensitive areas and that present well-defined and well-understood issues of narrow scope, IFC may accept alternative approaches for meeting EA requirements: for example, environmentally sound design criteria, siting criteria, and pollution standards, acceptable to IFC, for small and medium-scale industrial plants; environmentally sound design criteria, siting criteria, and construction standards, acceptable to IFC, for small and medium-scale agribusiness and agricultural projects; and specific environmental and social siting and design criteria, construction standards, fire and life safety requirements, and inspection procedures, acceptable to IFC, for tourism projects.

The IFC Performance Standards are typically applied by financial institutions to manage environmental and social risks and impacts so that development opportunities are enhanced. The IFC has identified eight Performance Standards that establish criteria to be met throughout the life of a project. These are outlined below and will be used to inform the EIA, as relevant:

Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts.

Performance Standard 2: Labor and Working Conditions.

Performance Standard 3: Resource Efficiency and Pollution Prevention.

Performance Standard 4: Community Health, Safety, and Security.

Performance Standard 5: Land Acquisition and Involuntary Resettlement.

Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

Performance Standard 7: Indigenous Peoples.

Performance Standard 8: Cultural Heritage.

Performance Standard 1 has relevance to the undertaking of the EIA process specifically, as it deals with the importance of:

- Integrated assessment to identify the environmental and social impacts, risks, and opportunities of projects;
- Effective community engagement with local communities; and
- Management of environmental and social performance throughout the life of the project.

Performance Standards 2 to 8 deal with management of impacts, emphasising the need to avoid such impacts as far as possible and where these cannot be avoided, to minimise as far as possible. Notwithstanding this objective, it is recognised that residual impacts to workers, affected communities and the environment may remain, which may need to be managed through compensation and/or offsets. A number of impacts such as climate change, gender issues, human rights, and water access are cross-cutting topics and would be addressed across multiple Performance Standards.

World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines) and relevant industry sector guideline(s) are technical reference documents with general and industry-specific examples of good international industry practice. Where relevant, these will be used to guide the assessment.

9. Equator Principles

The Equator Principles are part of a credit risk management framework for determining, assessing and managing environmental and social risk in project finance transactions.

The Principles apply to all new project financings globally with total project capital costs of \$10 million or more, and across all industry sectors. In addition, while the Principles are not intended to be applied retroactively, they can be applied to all project financings covering expansion or upgrade of an existing facility where changes in scale or scope may create significant environmental and/or social impacts, or significantly change the nature or degree of an existing impact.

The Principles also extend to project finance advisory activities. In these cases, Equator Principle Finance Institutions (EPFIs) commit to make the client aware of the content, application and benefits of applying the Principles to the anticipated project, and request that the client communicate to the

EPFI its intention to adhere to the requirements of the Principles when subsequently seeking financing.

Principle 1: Review and Categorisation

The risk of the project is categorized in accordance with internal guidelines based upon the environmental and social screening criteria of the IFC. Projects are classified, relating to social or environmental impacts, in Category A (significant impacts), Category B (limited impacts), and Category C (minimal or no impacts).

Principle 2: Social and Environmental Assessment

For all medium- or high-risk projects (Category A and B projects), sponsors complete an Environmental Assessment, the preparation of which must meet certain requirements and satisfactorily address key environmental and social issues.

Principle 3: Applicable Social and Environmental Standards

The environmental assessment report addresses baseline environmental and social conditions, requirements under host country laws and regulations, applicable international treaties and agreements, sustainable development and use of renewable natural resources, protection of human health, cultural properties, and biodiversity, including endangered species and sensitive ecosystems, use of dangerous substances, major hazards, occupational health and safety, fire prevention and life safety, socioeconomic impacts, land acquisition and land use, involuntary resettlement, impacts on indigenous peoples and communities, cumulative impacts of existing projects, the proposed project, and anticipated future projects, participation of affected parties in the design, review and implementation of the project, consideration of feasible environmentally and socially preferable alternatives, efficient production, delivery and use of energy, pollution prevention and waste minimization, pollution controls (liquid effluents and air emissions), and solid and chemical waste management.

Principle 4: Action Plan and Management System

Based on the Environmental Assessment, Equator banks then make agreements with their clients on how they mitigate, monitor and manage those risks through a "Social Environmental Management Plan".

Principle 5: Consultation and Disclosure

For risky projects, the borrower consults with stakeholders such as NGOs and affected groups and provides them with information on the risks of the project. The borrower has to consult the project affected communities in a structured and culturally appropriate manner. The process will ensure free, prior, and informed consultation for affected communities.

Principle 6: Grievance Mechanism

The borrower will establish a grievance mechanism as part of the management system.

Principle 7: Independent Review

For the Assessment, Assessment Plan and consultation process.

Principle 8: Covenants

Incorporation of covenants linked to compliance. Compliance with the plan is required in the covenant. If the borrower does not comply with the agreed terms, the bank will take corrective action, which if successful, could ultimately result in the bank cancelling the loan and demanding immediate repayment.

Principle 9: Independent Monitoring and Reporting

Over the life of the loan, in Category A and, if necessary in Category B, an independent expert is consulted.

Principle 10: EPFI Reporting

Each EPFI commits to report publicly at least annually about its Equator Principles implementation processes and experience.