Clean Development Mechanism South Africa
Designated National Authority

energy
Department:
Energy
REPUBLIC OF SOUTH AFRICA

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Project Design Document (PDD)

Project reference number (office	
Date received (office use only)	

NOTES ON COMPLETING THIS PROJECT DESIGN DOCUMENT

1. Please provide this PDD in both hard-copy

Part A: Project Proponent Details

Project Name	Grid-Connected Wind Power Programme in South Africa
Date of Submission of PDD	07/05/2012

Project Developer	
Name	EnBW Kraftwerke AG (henceforth referred to as EnBW)
Organizational Category	*Select most applicable:* *National Government/ Government Agency/ Provincial Government/ Municipality/* ***Private Company****/ Non-Governmental Organisation/ Other (give details)*
Legal Status	*Publicly traded company*
Street Address	EnBW Kraftwerke AG Durlacher Allee 93 76131 Karlsruhe
Postal Address (if different from above)	As above
Website Address	www.enbw.com

Main Activities	EnBW is the third largest energy company in Germany focusing on generation and trading of electricity, the electricity grid and sales and energy and environmental services. EnBW operates primarily in Baden-Württemberg and Germany, but does operate in other European markets
Summary of Financial Performance in last fiscal year	Not available at present
Contact Person(s)	Johannes Laubach
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Email Address	Ti.stein@enbw.com
Project Partners Provide the following Information for **all** project partners (copy and paste relevant sections of the table if information is to be provided on more than one partner organisation)	
Name	N/A
Nature of partner	
Organizational Category	
Legal Status (if private company)	
Street Address	
Postal Address (if different to Street Address)	
Website Address	
Main Activities	
Contact Person(s)	
Telephone	
Fax	
Email Address	
Contractual Arrangements	
Contractual arrangements between various entities involved	*Provide a brief description of the contractual and/or legal relationship(s) between the various key business entities including owner(s) of the future CERs. (If applicable)* *N/A*

Part B: Project Overview (Technical Summary, Location and Schedule)

Technical Summary of the project	
Objective of the Project	The objective of the project is to reduce greenhouse gas emissions through the production of electricity from wind which is a renewable energy resource. The electricity will be supplied onto the South African national electricity grid and displace the traditional coal-based generation of electricity.

Technical Summary of the project

Project Description

The project will be developed under a Programme of Activities (PoA). The PoA involves the development of various wind power projects in South Africa. The objective of the programme is to reduce greenhouse gas emissions through the generation of renewable energy. The electricity produced from wind, as the renewable energy source, will be supplied onto the South African national electricity grid and thus displace the traditional coal-based electricity generation. Currently, the South African national grid is dominated by coal-based generation and, as such, has an associated high greenhouse gas emission factor.

EnBW will act as the Coordinating and Managing Entity (CME) and as such will identify, promote and facilitate the development of wind projects along with willing participants.

EnBW has already identified one project which will most probably act as the first CDM Programme Activity (CPA). This project is the Roggeveld Wind Project in the Western and Northern Cape. This project involves the phased installation of a wind power plant which will produce an estimated 1 103 760MWh of electricity per year with an installed capacity of 140MW. The project will consist of 60 wind turbines on the site. Each turbine will have an individual capacity of up to 3MW. The turbines will be approximately 80 – 100m high (to the turbine hub), with a blade diameter of approximately 90 – 100m. Each turbine will be accompanied by an electrical transformer. The turbines will be connected together via medium voltage electrical cables, which will be buried under the ground leading to a substation onsite. A new substation will be constructed on site to connect the wind power plant to the South African National Electricity Grid via existing transmission lines.

Project Constraints

Are there any constraints affecting project operations or commissioning? *(Brief description: 1 paragraph or less)*

The following barriers have been identified for this programme:

- Skills Shortage: One of the constraints affecting project operations and commissioning is the availability of skilled turbine manufacturers and operators in South Africa.
- Financial: The costs associated with the generation of electricity from wind are significantly higher than the conventional alternative methods of generating electricity.
- Technology: There are no large scale commercial wind farms operational in South Africa. As such, there is a lack of experience with the technology in South Africa.

Technology to be employed	The programme involves the development of grid-connected wind power projects in South Africa. This programme will contribute towards the South African Department of Energy Minister's targets for wind energy. The first identified project will make use of up to 60 wind turbines. Each turbine will have a rated capacity of 3 MW. The turbines will each stand 105 metres tall and have a blade diameter of 90 to 100 metres. *Is the technology one that has been previously tried and tested in South Africa or internationally?* The technology that will be used in this programme has been tried and tested internationally. Wind turbines currently generate about 1% of total global electricity. Wind turbines have been used extensively in Europe and Asia. Africa has a number of wind farms, most notably the 80 MW Zafarana wind farm in Egypt. The technology has not yet been widely tested in South Africa

Technical Summary of the project	
	which has only two small wind farms. These are: • Klipheuwel wind farm which supplies approximately 3 MW of electricity to the national electricity grid. This small wind farm was erected by Eskom (South Africa's national electricity provider) as an experimental wind farm. • Darling wind farm which was South Africa's first commercial wind farm generates approximately 5 MW of electricity. The electricity generated from this project is sold to The City of Cape Town at a negotiated tariff. It will use half for its own needs and sell the remaining power to individuals and companies supporting green electricity generation. *Have the project operators had any previous experience or expertise with operating the technology?* EnBW has developed a number of renewable energy projects including wind energy, and have experience in the generation of electricity. The first CPA will be developed with a company called G7 Renewable Energies (Pty) Ltd (G7). G7's management team has experience with the development of wind power plants. All participating CPAs will have to have the necessary experience for them to be included in the PoA.
Greenhouse Gases Targeted	*The programme will target the reduction of CO_2 emissions*
Emission reductions	The programme will most probably be developed as a PoA. It is difficult at this stage to estimate the total emission reductions over the life of the PoA. However, the first project is expected to result in 441 504.00 tonnes CO_2e per year. The life of the PoA is 28 years and CPAs may be added throughout the 28 years. The crediting period for each CPA will be 7 years (renewable twice). The emission reduction calculation will be done in line with the selected methodology which is ACM0002 – *consolidated baseline methodology for grid-connected electricity generation from renewable sources*.
Baseline & Additionality Assessment	**Baseline** The electricity produced will be fed to the South African National Electricity Grid and displace coal-fired grid electricity. Hence, the baseline for the PoA and each of the CPAs is the national electricity grid. The baseline will be established using the procedures set out under ACM0002 - *consolidated baseline methodology for grid-connected electricity generation from renewable sources*. **Additionality** There are significant barriers to the implementation of renewable energy in South Africa by Independent Power Producers (IPPs). The lack of renewable energy power plants and IPPs in South Africa is

Technical Summary of the project	
	testament to these barriers. On a high-level, these barriers include: • The lack of a regulatory framework in South Africa for IPPs and renewable energy. • The cost of renewable energy compared to existing electricity tariffs. • The current electricity generation and distribution structure in South Africa and the challenges with obtaining a workable Power Purchase Agreement (PPA) with the electricity grid operator. • The lack of local technology providers and local skills in the renewable energy sector in South Africa. These barriers constitute significant challenges to implementing renewable energy projects in South Africa. As such, the revenue from the carbon credits (CERs) will be used to offset a portion of the costs associated with the project and to be used to increase the attractiveness of investing in the projects. Additionality will be demonstrated in the project using the latest version of the UN-approved 'Tool for the demonstration and assessment of additionality.'
Monitoring	The electricity fed onto the national electricity grid will need to be monitored using online electricity meters. The reading on the online electricity meter after the step-up transformer will be used as the net electricity supplied to the national electricity grid. This will be checked against invoices from Eskom, the national transmitter and distributor for electricity in South Africa. Monitoring will be in compliance with the latest version of ACM0002 - *Consolidated baseline methodology for grid-connected electricity generation from renewable sources*. In addition, the parameters required to calculate the grid emission factor will be monitored as per the requirements of the latest version of the 'Tool to calculate the emission factor for an electricity system.'
Type of project/activities	*Identify which type of activity is involved in this project – and for each, provide brief details*
a. Energy Supply	*Select if applicable:* ***Renewable Energy*** *(excluding biomass)/ Biomass/ Cogeneration/ Improving energy efficiency by replacing existing equipment/minimization of transport and distribution/ fuel switch/ other* *The project is for power plants which use wind as a renewable resource to generate electricity. The electricity will be supplied to the national grid. Hence the project is renewable energy supply.*
b. Energy Demand	*Not applicable*
c. Industrial Process	*Not applicable*

Technical Summary of the project	
d. Transport	*Not applicable*
e. Waste Management	*Not applicable*
f. Forestry/ land use	*Not applicable*
g. Other	*Not applicable*

Project Boundary
Define the Project Boundary (Approximately 1 paragraph)

The project boundary for the PoA will be the Republic of South Africa, and the boundary of each CPA will be drawn around the wind power plant. The national electricity grid will be included in the boundary for the purposes of determining the grid emission factor as the individual CPAs will supply electricity to the national electricity grid.

The boundary will include the following equipment:

- Wind turbines and associated equipment
- Substation and associated equipment
- Metering equipment

The emission source in the baseline is the national electricity grid. The emission source in the project is the auxiliary load for the wind power plant.

Indicate Emissions outside the Project Boundary	There are no significant emissions attributable to the project outside of the boundary. Hence, there is no leakage that can be considered.

Location of the Project	
Province	Western and Northern Cape
Municipality	Central Karoo District Municipality and the Karoo Hoogland Municipality
Nearest city/large town	Matjiesfontein and Sutherland
Brief description of the location of the project site	The proposed wind energy facility will be located between Matjiesfontein and Sutherland in the Western and Northern Cape. The site is located on the R354, approximately 40 km south of Sutherland and approximately 20 km north of Matjiesfontein.

Project Schedule/Timetable	
Earliest Project Start Date	The first CPA is expected to be commissioned in 2013
When is the expected first year of CER delivery	2016
Project Lifetime	28 years for the PoA. The lifespan of each project will exceed the crediting period of the PoA
Project End Date	July 2043
Crediting Period	The crediting period for each CPA is 7 years (renewable twice). The crediting period of the PoA is 28 years.

Project Schedule/Timetable	
Current Status or phase of the project	*Select most applicable:* *Under discussion/* ***planning****/preparation/construction or other actions already commenced/ Other (explain)* The first CPA is currently in the planning stage. A temporary 15m wind measurement mast was installed on site in May 2010. A permanent 80m mast was erected on site at the 2010.
DNA Approval	*Has this project been submitted to the DNA for approval previously?* The proposed first CPA (Roggeveld Wind Power Plant) was initially submitted as a CDM project and received a Letter of No Objection on the 04 November 2010. It will be withdrawn as a conventional CDM project as it will form part of the PoA.
Approval by other bodies	*Has this project (or any elements of the project) been submitted to any other national, provincial or local government departments or agencies for regulatory or legal approval (excluding EIA process – see Part C). If so – provide brief details.* The project has not at this stage been submitted to any other Government departments for approval. However, the Environmental Impact Assessment is underway.

Part C: Performance Against the DNA's Sustainable Development Criteria

South Africa has identified the following sustainable development criteria and indicators against which each CDM project will be assessed. Please provide your interpretation of how this project will address each of these **criteria and indicators** where they are relevant to the project. If the space provided is not sufficient please append additional information as required.

NOTE: For all indicators which are of relevance to the project show how the performance of the project against these indicators can be objectively monitored and measured on an ongoing basis.

1. Economic: Does the project contribute to national economic development?

The Programme will contribute to national economic development in the following ways:

- The programme will contribute to national economic development through the sales of the Certified Emission Reductions (CERs) which will result in an inflow of foreign exchange.
- The success of the programme will promote investor confidence in the country and will encourage the growth of the renewable energy sector in South Africa.
- The success of this programme in South Africa will encourage both local and international investment in the renewable energy sector.
- This is a renewable energy power programme which will generate electricity and supply the electricity on to the national electricity grid. Independent power generation represents a significant growth area for South Africa. The success of this programme will encourage overseas investors to invest in the development of South Africa's clean energy sector. Encouraging international investment in local projects will contribute significantly towards national economic development.
- The wind power programme will assist in meeting the renewable energy targets on both a country and a provincial level. According to the White Paper on Renewable Energy, South Africa aims to diversify its power supply to include 10,000 GWh of electricity from renewable energy by 2013.
- South Africa committed to a conditional greenhouse gas emission reduction target of 34% by 2020 and 42% by 2025 in the climate change conference in Copenhagen held in December 2009. This commitment was re-iterated in the Integrated Resource Plan (IRP) for 2010. The programme will assist in achieving this target by increasing the renewable energy component of the national electricity mix. National Treasury is investigating implementing a carbon tax. In the long term, the growth of clean energy will reduce the carbon tax that the private sector will be required to pay for using grid electricity. This, in turn, will reduce the negative impact that the carbon tax may have on the economy.

2. Social: Does the project contribute to social development in South Africa?

The Programme will contribute to social development in South Africa in a number of ways:

- The programme will result in the creation of jobs in the construction phase of the project. A number of local people will be employed during construction for site security, manual labour, transportation of goods and other similar services. The project will create approximately 150 jobs during construction, approximately 30 jobs for operations & maintenance.
- The programme will result in technology transfer from developed countries to South Africa. In addition, a team of locals will be trained to maintain the wind turbines which will ensure the transfers of skills to South Africa.
- The success of the programme will encourage the growth of the renewable energy sector in South Africa which may result in the creation of 'green' jobs. The success of the programme will also encourage the diversification of South Africa's energy mix and the growth of Independent Power Producers (IPPs) in South Africa.
- The programme encourages the use of renewable energy as opposed to fossil fuels and assists towards sustainable energy use.

The programme acts to stabilise and support the grid as the electricity produced will be fed onto the grid at the end of the feeding line. This will assist in securing the supply of electricity to the South Africa and reducing supply interruptions.

3. Environmental: Does the project conform to the National Environmental Management Act principles of sustainable development?

The programme will be designed in a way that will ensure that it complies with National Environmental Management Act (NEMA) requirements. The programme will conform to the NEMA principles of sustainable development in the following ways:

- The programme results in a reduction of greenhouse gas emissions by displacing coal-fired grid electricity with electricity generated from renewable energy. This reduction in greenhouse gas emissions will play a role in assisting South Africa to achieve its emission reduction target of 34% below business-as-usual by 2020.
- The generation of electricity from wind power does not require the use of water. This is in direct contrast to the generation of electricity from coal.
- The programme will make use of renewable energy to generate electricity. The electricity will be fed onto the national electricity grid and displace coal-fired electricity. Apart from reducing greenhouse gas emissions, the project will displace the negative impacts of coal-mining and beneficiation as well as the adverse environmental impacts of combusting coal (particulate and sulphur emissions and water consumption and contamination). The success of the project will assist in encouraging the diversification of South Africa's energy mix and the use of renewable resources.

i) That the **disturbance of ecosystems and loss of biological diversity** are avoided, or where they cannot be avoided, are minimised and remedied	The programme will endeavour to have minimal impact on the ecosystem and biodiversity. Where possible the existing road infrastructure will be used and where this is unavoidable, the impacts will be minimised. Some projects (CPAs) will result in infrastructure improvements such as: • Upgrade of existing public roads and upgrade and construction of farm roads. • Office and storage buildings with security and ablution facilities will be constructed on the site. • Permanent wind measuring masts. • Substations to connect the facility to the national electricity grid via existing transmission lines. In accordance with the National Environmental Management Act, the project developers will undertake Environmental Impact Assessments (EIA) for the wind power plants. The EIA will address any potential risks of the disturbance to ecosystems. An Environmental Management Programme (EMP) will be put in place to minimize and mitigate the risks.
ii) That **pollution and degradation of the environment** are avoided, or where they cannot be altogether avoided, are minimised and remedied	The programme will have limited negative environmental impacts. The programme makes use of wind which is a renewable resource. The generation of electricity using wind does not result in air pollution and it does not result in the generation of waste.
iii) That the **disturbance of landscapes and sites that constitute the nation's cultural heritage** is avoided, or where it cannot be altogether avoided, is minimised and remedied	The land used for the various wind power plants would not be on land which constitutes the nation's cultural heritage and if they do, the necessary authority will be sought. The programme will seek to have minimal impact on the landscape. The land will be fully rehabilitated once the wind power plants are decommissioned.
iv) That **waste is avoided**, or where it cannot be altogether avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner	The wind power plants will not produce any waste. The plants will use renewable energy to generate electricity. Hence, there will be no waste that needs to be disposed of during the operation of the wind farms. In construction and decommissioning phases of the programme, any waste generated will be disposed of in a responsible manner.
v) That **the use and exploitation of non-renewable resources is responsible and equitable**, and takes into account the consequences of the depletion of the	The programme will use wind energy to produce electricity which is a renewable resource. The electricity produced by the project will be fed onto the South African national electricity grid.

resource	According to The National Energy Regulator of South Africa (NERSA), South Africa's grid electricity is primarily produced from coal (95% coal-based in 2005). The electricity produced in this project will displace coal-based electricity and reduce the exploitation of a non-renewable resource.
vi) That the **development, use and exploitation of renewable resources is responsible and equitable**, and takes into account the consequences of the depletion of the resource.	The electricity produced by the wind power plants will be fed onto the national grid and reduce the production of coal-based grid electricity. Coal is a fossil fuel and, as such, the project will reduce the use of a non-renewable resource.
vii) That **a risk averse and cautious approach** is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions	A risk averse and cautious approach will be applied to the development of this programme. The project developers will conduct an Environmental Impact Assessment (EIA) for each project in accordance with National Environmental Management Act (NEMA) (Act No. 107 of 1998). The EIA will describe the environmental impacts of the projects and the Environmental Management Programme (EMP) that will be developed to limit the impacts that the projects will have on the environment and to ensure that the risks are mitigated and managed effectively.
vii) That **negative impacts on the environment and on people's environmental rights** be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied	The project developers will minimize the impact of the projects on the environment. The projects will have positive impacts on the environment through the use of renewable energy to generate electricity. The displacement of coal-based electricity reduces GHG, particulates and sulphur emissions and avoids the negative environmental impacts of coal mining. In addition, wind power plants do not require water to produce electricity. Coal requires a significant amount of water to mine and process. This programme will provide electricity to the national grid and, as such, it will assist in restoring the reserve margin of the national grid. The programme will reduce the risk of experiencing electricity black-outs when electricity demand is greater than supply. The project will provide electricity to the national grid and this will allow for growth and development.
Other comments **Please provide any other comments on how this project contributes to sustainable development in South Africa** The programme will assist South Africa in meeting its emission reduction target of 34% below business-as-usual by 2020. In addition, the programme will contribute to national renewable energy targets in terms of The White Paper on Renewable Energy Policy which motivates for 10,000 GWh of renewable energy on the electricity grid by 2013.	

Indicators in Support of the Project Approval Criteria			
Category		**Indicator**	**Comment**
Environmental	Impact on local environmental quality	• Impact of the project on air quality • Impact of the project on water pollution • Impact of the project on the generation or disposal of solid waste • Any other positive or negative environmental impacts of the project (such as impacts on noise, safety, visual impacts, or traffic)	The programme will have positive impacts on local environmental quality. These impacts are listed below: • The programme will reduce GHG emissions by generating electricity from a renewable resource. The electricity produced will be fed onto the South African national electricity grid and displace coal-based electricity. The displacement of coal-based electricity will reduce the amount of coal mined and combusted. This reduces GHG, particulate and sulphur emissions in South Africa. • Wind power plants do not require water to generate electricity. Hence, there is no water pollution in the project activity. In addition, the programme displaces coal-based electricity which uses significant water volumes and results in water pollution. On a national level, the project reduces water pollution. • The programme will not generate any solid waste during operation. During construction and decommissioning, all solid waste will be disposed of in a responsible manner and the site will be rehabilitated. • The programme will not have any major noise, safety or traffic impacts. However, as the wind turbines ordinarily stand tall, and will be visible. The programme will comply with all environmental requirements in terms of visibility for a wind power plant.
	Change in usage of natural resources	• Impact of the project on community access to natural resources • Impact of the project on the sustainability of use of water, minerals or other non renewable natural resources • Impact of the project on the efficiency of resource utilisation	The programme will encourage the use of renewable energy and thus have the following benefits in terms of sustainable usage of natural resources: • The programme will not hinder the local community's access to natural resources. In fact, the project will have positive impacts on the local community such as the increase of investment in the area and the creation of jobs during the construction and operation phase of the project. • Wind power plants do not require water in order to generate electricity. This is unlike coal-fired power plants that consume large volumes of water to mine and combust coal that is used to produce power. In addition, South Africa's coal-fired power stations are water-cooled and, as such, consume large volumes of water. The programme will utilise a renewable resource and encourage the generation of renewable energy in South Africa.

Indicators in Support of the Project Approval Criteria			
Category		**Indicator**	**Comment**
	Impacts on biodiversity and ecosystems	• Changes in local or regional biodiversity arising from the project	The programme may have the following impacts on biodiversity and ecosystems: • The programme developers will take the existing activities and operations of the land in which they develop the projects into account when designing the wind power plant. There are several vegetation types that may be affected by the installation of the wind power plants and associated infrastructure. The wind power plant may impact on birdlife and other fauna. Specialist studies will be initiated as part of the EIA process. These studies will identify the extent of the impact and allow the project developers to put measures in place to mitigate and manage the impacts.

Indicators in Support of the Project Approval Criteria			
Category		**Indicator**	**Comment**
Economic	Economic impacts	• Impact of the project on foreign exchange requirements • Impact of the project on existing economic activity in the area • Impact of the project on the cost of energy • Impact of the project on foreign direct investment	• The programme will generate foreign exchange through the sale of the carbon credits (CERs). • The success of the programme will encourage foreign investment in the renewable energy sector. • The programme will create approximately 150 jobs during construction, approximately 30 jobs for operations & maintenance. These jobs will be available to residents in the area. A portion of the revenue has also been allocated to initiating and promoting community development programmes. • The success of the programme will encourage investment in the renewable energy sector and increase investor confidence in electricity supply in South Africa. As the technology develops and is more widely used, the cost may decrease. This will result in a decrease in the cost of generating wind energy.
	Appropriate technology transfer	• Positive or negative implications for the transfer of technology to South Africa arising from the project • Impacts of the project on local skills development • Demonstration and replication potential of the project	The programme will result in technology and skills transfer to South Africa. The wind generation technology is sourced from overseas. This technology is expensive and the revenue from the carbon credits will assist in funding the technology transfer. During the operations phase, people will be employed in the various projects and trained to maintain the wind power plant.

Indicators in Support of the Project Approval Criteria			
Category		**Indicator**	**Comment**

Social	Alignment with national provincial and local development priorities	• How the project is aligned with provincial and national government objectives
		• How the project is aligned with local developmental objectives
		• Impact of the project on the provision of, or access to, basic services to the area
		• Impact of the project on the relocation of communities if applicable
		• Contribution of the project to a any specific sectoral objectives (for example, renewable energy targets)
			• The programme will contribute to development and will be in line with national development policies in the areas of renewable energy and carbon emissions. The programme will contribute to the following policies:
			  • South Africa's White Paper on Renewable Energy which calls for 10,000 GWh of renewable electricity on the national electricity grid by 2013.
			  • The Presidential commitment at the climate change conference in Copenhagen in 2009 to reduce greenhouse gas emissions by 34% below business-as-usual by 2020 and 42% by 2025.
			  • The Integrated Resource Plan (IRP) 2010 which re-iterates South Africa's commitment towards a 34% reduction in greenhouse gas emissions below business-as-usual by 2020. Renewable energy will play a major role in the achievement of this target.
			• The programme will assist in stabilizing the national grid which in turn will improve security of supply to the local community and reduce outages.
			• The success of the programme will encourage investment in the renewable energy sector and increase investor confidence in electricity supply in South Africa

Indicators in Support of the Project Approval Criteria			
Category		**Indicator**	**Comment**

	Social equity and poverty alleviation	• Impact of the project on employment levels? (specify the number of jobs created/lost; the duration of time employed, distribution of employment opportunities, types of employment, categories of employment changes in terms of skill levels and gender and racial equity)
		• Impact of the project on community social structures
		• Impact of the project on social heritage
		• Impact of the project on the provision of social amenities to the community in which the project is situated
		• Contribution of the project to the development of previously underdeveloped areas or specially designated development nodes
			• The programme will not result in job losses. The programme will create a number of jobs during the construction phase of the various projects. People from the local community will be employed for site security, manual labour, transportation of goods and other similar services during the construction phase. In the operational phase of the project, permanent jobs will be created for maintenance. This workforce will receive the training required to maintain the wind turbines.
			• The programme should not impact significantly on community social structures. The programme will impact on the communities in the following ways:
			  • Creation of jobs will assist with poverty alleviation;
			  • A portion of the revenue from the sale of electricity will be used to fund community development programmes; and
			  • The stabilization of the national grid will assist in reducing outages and increasing security of supply to the local community.
			The programme will assist with security of electricity supply to South Africa and reduce electricity outages by stabilizing the national electricity grid.

Indicators in Support of the Project Approval Criteria			
Category		**Indicator**	**Comment**
General	General Project Acceptability	• Are the distribution of project benefits deemed to be reasonable and fair?	The distributions of programme benefits will be reasonable and fair. A portion of the revenue from the sale of the electricity will be used to fund local community development activities.

Part D: Finance

Project Costs	
Development Costs (R's)	Not available at present
Installed Costs (R's)	
Other Costs (R's)	
Total Project Costs (R's)	
Sources of Finance	
Equity	*Name of Organisation(s) and amount (R's) contributed by each*
Debt (long term)	*Name of organization(s) and amount (R's) for each*
Debt (short term)	N*ame of organization(s) and amount (R's) for each*
Amount not identified (R's)	*Amount (R's) and a brief summary of the needs and any outstanding issues* *(1 paragraph or less)*
Total CDM Contribution sought	*Amount (R's) and a brief summary of the needs and any outstanding issues* *(1 paragraph or less)*
Expected Price of CER in case of a contract to purchase for: A period of 7 years A period of 10 years A period of 14 years (2x7 years)	 *Price? (R's)* *Price? (R's)* *Price? (R's)*
Indicate the **projected Internal Rate of Return** for the project with and without CER revenues.	*Note: Please indicate assumed price of CER as used in your calculation*

Constraints on tradability of carbon credits	*Have any commercial arrangements been made that may impact the tradability of the carbon emission reductions? If yes, please define.Note. Examples would be subjection to a mortgage, government tax etc.*
Preliminary discussions with potential purchasers	*Have you had any preliminary discussions with any potential purchasers of the carbon credits (CERs)* *If yes, please give brief details.*