

Clean Development Mechanism South Africa
Designated National Authority



energy

Department:
Energy
REPUBLIC OF SOUTH AFRICA

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Programme of Activities (PoA)

Project reference number (office use only)	
Date received (office use only)	
<p>NOTES ON COMPLETING THIS DOCUMENT</p> <ol style="list-style-type: none"> 1. Please provide the Programme of Activities Design Document (PoA-DD) in both hard-copy (one copy) and electronic formats (MSWord) 2. This information submitted to the DNA will remain confidential. 3. Please ensure that all fields are filled in as far as possible to allow for proper consideration of the proposed project. Please indicate if information is not available for any particular item and reasons for the unavailability of information. 	

Part A: Programme of Activities (PoA) Details

Programme of Activities (PoA) title	Grid Connected Photovoltaic (PV) Renewable Electricity Generating Facilities PoA
Coordinating/Managing entity (CME) name	Carbon Protocol of SA
Component Project Activity 1 (CPA1) title	Grid Connected Photovoltaic (PV) Renewable Electricity Generating Facilities Programme CPA 1 (One)
Date of PoA Submission	03/08/2012

Project Developer	
Coordinating/Managing entity (CME) name	Carbon Protocol of SA
Organizational Category	Not-for-profit organization
Legal Status	Section 21 Company
Street Address	150 West Street Sandton c/o Lloyd Christie Johannesburg Gauteng Province 2196 Republic of South Africa
Postal Address (if different from above)	Same as above.
Website Address	http://www.carbonprotocol.org
Main Activities	<p>The Carbon Protocol of SA is a non-profit collaboration of concerned and interested parties in South Africa that sets consistent and transparent standards to calculate, verify and publicly report greenhouse gas emissions into a single registry. The Registry supports both voluntary and mandatory reporting programs and provides comprehensive, accurate data to reduce greenhouse gas emissions.</p> <p>The Carbon Protocol of SA is hosting a platform for Programmes of Activities (PoA) under the Kyoto Protocol. This is an open platform for which the Carbon Protocol of SA will be the Coordinating/Managing Entity (CME) as specified under the strict Kyoto rules and requirements. Each PoA will be managed separately to ensure that the interest of both the underlying projects and project owners are protected.</p> <p>The Carbon Protocol of SA will, through this open platform, fulfill an integral role in the implementation and sustaining of PoAs in Africa for the duration of 28 years. The Carbon Protocol of SA will ensure that each PoA that joins will be managed in a professional manner that ensures that its specific needs are addressed and that the interests of the PoA and project owners are managed effectively.</p>
Summary of Financial Performance in last fiscal year	N/A
Contact Person(s)	Ms Hildegard Niehaus
Telephone	+27 (0) 72 348 1505
Fax	-
Email Address	info@carbonprotocol.co.za
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	Cennergi (Pty) Ltd
Nature of partner	CPA 1 implementer and owner
Organizational Category	Private Company
Legal Status (if private company)	Pty (Ltd)
Street Address	272 Lenchen Avenue, Lake Field Office Park, Centurion, 0183 Gauteng Province.
Postal Address (if different to Street Address)	Same as street address.
Website Address	www.cennergi.com
Main Activities	Energy development company
Contact Person(s)	Thomas Garner, Managing Director
Telephone	012 675 6660
Fax	012 675 6669
Email Address	Thomas.garner@cennergi.com
Contractual Arrangements	
Contractual arrangements between various entities involved	There is a an agreement in place between the CME (Carbon Protocol of SA) and Cennergi (Pty) Ltd as the CPA Implementer of CPA 1.

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

Technical Summary of the project	
<p>Objective of the Project</p>	<p>The purpose of the PoA is to support the development of Solar PV (Photovoltaic) facilities that will supply renewable electricity into the grid.</p> <p>CPA 1 is a 10MW Solar PV project in South Africa that will be supplying renewable electricity into the grid. It is located on portion 6 of the Farm Broederspruit 213, North East of Vryburg, North West Province, South Africa.</p>
<p>Project Description</p> <p>The Project is referred to by Cennergi as the Letsatsi Solar Farm Project</p> <p>CPA 1 is a new 10 MW capacity grid-connected renewable electricity generating facility that uses photovoltaic technology.</p> <p>The project is intending to bid into Round 3 of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).</p>	
<p>Project Constraints</p> <p>There are no constraints affecting project operations or commissioning.</p>	
<p>Technology to be employed</p>	<p>Photovoltaic (PV) - solar radiation falling on PV panels is used to generate direct current electricity.</p>

Technical Summary of the project	
Greenhouse Gases Targeted	This project will target CO ₂ .
Emission reductions	<p>This information relates to CPA 1</p> <p>Total emission reductions: 203 655 tCO₂e*</p> <p>Annual average emission reductions: 20 365tCO₂e/year</p> <p>*A ten year fixed crediting period has been selected for this project activity.</p>
Baseline & Additionality Assessment	<p>Baseline: The baseline scenario is the purchase of electricity from Eskom.</p> <p>Additionality: The additionality of the project activity has been assessed using the “Tool for the Demonstration and Assessment of Additionality”.</p>
Monitoring	<p>The following parameters will be monitored in the project activity:</p> <ul style="list-style-type: none"> – The annual quantity of net electricity output supplied by the project to the grid.
Type of project/activities	<i>Identify which type of activity is involved in this project - and for each, provide brief details</i>
a. Energy Supply	The solar radiation falling on PV panels is used to generate direct current electricity. The projects will be grid connected and involve either new Greenfield project or capacity additions.
b. Energy Demand	N/A
c. Industrial Process	N/A
d. Transport	N/A
e. Waste Management	N/A
f. Forestry/ land use	N/A
g. Other	N/A

Technical Summary of the project

Project Boundary

The spatial extent of the project boundary includes the project power plant and all the power plants physically connected to the electricity system that CPA 1 is connected to.

Indicate Emissions outside the Project Boundary

There are no significant and measurable net emissions of GHGs that are attributable to the project outside of the project boundary.

Location of the Project

Province

CPA 1 is in the North West Province

Municipality

Tswaing Local Municipality

Nearest city/large town

Vryburg

Brief description of the location of the project site

Farm Broederspruit 213 (north east of Vryburg).

Latitude S 26° 48' 41.0"
Longitude E 25° 08' 0.02"

Project Schedule/Timetable

Earliest Project Start Date

1st January 2013

When is the expected first year of CER delivery

2015

Project Lifetime

20 years

Project End Date

2033

Crediting Period

A fixed ten year crediting period has been selected for this project activity.

Current Status or phase of the project

The project activity is in development and will bid into the third window of the Renewable Energy Independent Power Producer Programme (REIPPP).

DNA Approval

This project has not been previously submitted to the DNA for approval.

Approval by other bodies

The CPA 1 project was given Environmental Authorisation to proceed by the National Department of Environmental Affairs (Authorisation Register Number 12/12/20/2186. NEAS Reference Number DEA/EIA/0000201/2011. Dated: 29th August 2011)

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 development of the CPA 1 will support national economic development through increasing the amount of electricity generated in the country. This assists in addressing the problem of the supply and demand mismatches South Africa has been experiencing, which has had negative impacts on economic activity in the country and job creation.

Job creation is a key focus of national government’s economic strategy as defined in the “New Growth Plan”. CPA 1 and subsequent solar PV projects developed under the auspices of the PoA will generate work opportunities (permanent and temporary) in the construction and operational phases.

The project does therefore contribute to national economic development.

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

As a result of the development of CPA, and any subsequent CPAs falling under the umbrella of this PoA, there will be increases in household income in the areas surrounding the project. The income increases are a result of increased employment and local spending by the projects. Improving household incomes leads to improved social conditions which is an objective of Government’s social development policies. The Government has also identified rural areas (such as where CPA 1 is located) as a particular focus for its social development objectives.

The project does therefore contribute to social development in South Africa.

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

<p>i) That the disturbance of ecosystems and loss of biological diversity are avoided, or where they cannot be avoided, are minimised and remedied</p>	<p><i>The scale of the disturbed area means that ecosystem disturbance and loss of biological diversity is limited.</i></p> <p><i>The Environmental Authorisation (EA) for the project issued by the National Department of Environmental Affairs requires that an Environmental Management Programme (EMPr) be implemented to effectively manage impacts during the construction and implementation phases of the project. During the construction phase this objective will be further supported by the appointment of an Environmental Control Officer to check on performance against the EMPr’s requirements. All disturbed land is to be rehabilitated to its original state. A “Plant Rescue and Protection Plan” which allows for the maximum transplant of conservation important species will be implemented prior to the commencement of the construction phase. It is stipulated in the authorisation that vegetation clearing must be kept to an absolute minimum and that a rehabilitation plan must be developed and implemented for the site.</i></p>
<p>ii) That pollution and degradation of the environment are avoided, or where they cannot be altogether avoided, are minimised and remedied</p>	<p><i>Due to the nature of these projects there is little potential for pollution and degradation of the environment. The EMPr will reflect issues such as potential fuel leakages that could result in pollution.</i></p>

<p>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</p>	<p><i>Due to the nature of these projects landscape disturbance will be kept to a minimum.</i></p> <p><i>No heritage sites were identified on the proposed site of CPA 1.</i></p>
<p>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</p>	<p><i>Limited amounts of waste will be produced during the construction and operational phases. This will be reused and recycled as far as possible, and disposed of responsibly. Some hazardous waste will be produced (for example oils and solvents), for which a registered company will be used for disposal.</i></p>
<p>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 resource</p>	<p><i>The project involves the use of a renewable resource to generate energy.</i></p>
<p>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.</p>	<p><i>Only the energy contained in solar radiation will be used. There are no depletion issues in this regard.</i></p>
<p>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</p>	<p><i>This approach has been reflected in the granting of the environmental authorisation and the EMPr guiding the construction and operational phases. The Environmental Control Officer will also check that the EMPr requirements are fulfilled during construction.</i></p>
<p>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</p>	<p><i>Please note that there will be no resettlement as a result of CPA 1's implementation.</i></p>
<p>Other comments Please provide any other comments on how this project contributes to sustainable development in South Africa</p> <p>The project will assist South Africa in delivering on its objectives with regard to moving to a low greenhouse gas emissions trajectory. This as detailed in the national government's "National Climate Change Response White Paper (2011).</p>	

Indicators in Support of the Project Approval Criteria

Category	Indicator	Comment	
Environmental	Impact on local environmental quality	<ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • Due to the nature of the project, negative impacts on local air quality will be negligible with some dust related impacts during construction. • The project will not have any impact on water quality during its operation. Limited water will be used during operation for panel cleaning. • The project activity (in implementation and operation) will produce negligible amounts of solid waste. This issue is also addressed in the EMP. • Potential visual impacts during construction are managed by such activities being limited to daylight hours only.
	Change in usage of natural resources	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • The project will have no impact on community access to natural resources. • The project activity does not make use of minerals or any other non-renewable natural resources. • The project will have no impact on water resources due to limited water use for cleaning. • The project will have no impact on the efficiency of solar radiation or water resource utilisation.
	Impacts on biodiversity and ecosystems	<ul style="list-style-type: none"> • Changes in local or regional biodiversity arising from the project 	<ul style="list-style-type: none"> • The limited footprint of the project means that there will be no significant changes in local or regional biodiversity. A “Plant Rescue and Protection” Plan is a requirement for CPA 1, as well as a rehabilitation plan.

Indicators in Support of the Project Approval Criteria

Category	Indicator	Comment
Economic	Economic impacts	<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> The project will contribute to foreign reserve earnings for South Africa via the carbon credit sales revenue. The types of projects envisaged under the auspices of the PoA will generate temporary employment in the construction phase, and will result in permanent employment during the operational phase. For CPA 1 one hundred and fifty (150) temporary jobs will be created during the construction phase. In the operational phase the project will employ five full-time workers. CPA 1 will bid into the third round of the government's Renewable Energy Independent Power Producer Procurement Programme. If successful, the price the project will be paid for the electricity produced is via a competitive bidding process and will have been integrated into government planning with regard to energy pricing. There will be no foreign direct investment as a result of this project.
	Appropriate technology transfer	<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> In the short to medium term there will be technology transfer as the PV panels are imported. In the longer term it is expected that such manufacturing will be done in South Africa. Skills will need to be developed to support the ongoing implementation of the project. The project further supports the case that PV is a viable candidate for renewable energy project development in the country.

Indicators in Support of the Project Approval Criteria

Category	Indicator	Comment
Social	Alignment with national provincial and local development priorities	<ul style="list-style-type: none"> • 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 any specific sectoral objectives (for example, renewable energy targets) <ul style="list-style-type: none"> • The project supports the emission mitigation actions of South Africa. According to a letter sent to the United Nations Framework Convention on Climate Change (UNFCCC) on 29/01/2010, South Africa committed to “taking nationally appropriate mitigation actions to enable a 34% deviation below the ‘Business as Usual’ emissions growth trajectory by 2020 and a 42% deviation below the ‘Business as Usual’ emissions growth trajectory by 2025”. The project will displace electricity consumption from a predominantly coal-fired grid, which will result in a reduction in all of the negative impacts associated with coal mining. • The project will create several permanent jobs. • The project activity does not involve the relocation of any communities. • The South African Government’s economic policy is defined in the New Growth Path. This document indicates that the key social development deliverable the policy is aiming to support is the creation of new jobs in South Africa. Unemployment is recognised as key problem in the country that needs to be addressed. This project will create jobs during the installation and operational phases of the programme, thereby supporting Government’s policy objectives. • The project will support the Minister of Energy’s objective that 3725 MW of renewable energy capacity be developed in the country.

Indicators in Support of the Project Approval Criteria

Category	Indicator	Comment
Social equity and poverty alleviation	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • The project will create permanent and temporary jobs in the construction and operational phases. The creation of jobs is important as CPA 1 is located in an area with high unemployment and little opportunity to develop new skills beyond those linked to unskilled farm work. • If successful under the REIPPPP, CPA 1 will be required to provide a share holding of the project to community to support development in the areas surrounding the project.

Indicators in Support of the Project Approval Criteria

Category	Indicator	Comment
General	General Project Acceptability	<ul style="list-style-type: none"> • Is the distribution of project benefits deemed to be reasonable and fair?
		<ul style="list-style-type: none"> • The project contributes to sustainable development from an economic, environmental and social perspective. The local community and environment benefits from the project activity and these benefits are considered to be reasonably and fairly distributed.

Part D: Finance

Project Costs	
Development Costs (R's)	33.16 million
Installed Costs (R's)	191.50 million
Other Costs (R's)	49.10 million
Total Project Costs (R's)	273.76 million
Sources of Finance	
Equity	30%
Debt (long term)	70%
Debt (short term)	N/A
Amount not identified (R's)	N/A
Total CDM Contribution sought	Confidential
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)	Uncertain but anticipated to be linked to the spot price.
Indicate the projected Internal Rate of Return for the project with and without CER revenues.	Confidential
Constraints on tradability of carbon credits	There are no constraints related to tradability of the carbon credits from this PoA and CPA 1 project.
Preliminary discussions with potential purchasers	Very preliminary discussions have been held with a number of buyers.