

# DNA

DESIGNATED NATIONAL AUTHORITY



CLEAN DEVELOPMENT MECHANISM PROGRAMME  
OF ACTIVITIES IN SOUTH AFRICA



energy

Department:  
Energy  
REPUBLIC OF SOUTH AFRICA

The background of the entire page is a photograph of a large array of solar panels, viewed from a low angle looking up, creating a strong sense of perspective. The panels are dark and have a grid-like pattern of lines.

**Designated National Authority  
for  
Clean Development Mechanism  
in  
South Africa**

**Vision**

**To lead in the development and promotion of Clean Development Mechanism**

**Mission**

**Effective and efficient regulation of Clean Development Mechanism activities in accordance with the objectives of United Nations Framework Convention on Climate Change and Kyoto Protocol.**

## **CLEAN DEVELOPMENT MECHANISM PROGRAMME OF ACTIVITIES SOUTH AFRICA**

### **1. Background**

A Programme of Activities (PoA) is a voluntary coordinated action by a private or public entity which coordinates and implements a policy/measure or stated goal (i.e. incentive schemes and voluntary programmes), which leads to greenhouse gas (GHG) emission reductions or net GHG removals by sinks that are additional to any that would occur in the absence of the PoA, via an unlimited number of CDM Programme Activities (CPAs). A CPA is a single, or a set of interrelated measure(s), to reduce GHG emissions or result in net anthropogenic greenhouse gas removals by sinks, applied within a designated area defined in the baseline methodologies. ([www.cdm.ufccc.int](http://www.cdm.ufccc.int)). A CPA can be included in a registered PoA at any time during the duration of the PoA and there are no limits on the number of CPAs that can be included under a PoA. A PoA allows an unlimited number of small CDM project activities to be registered as one programme. In the context of a PoA, the requirement for additionality means that both the PoA and the CPA would not have been implemented, or would not have been implemented to the same extent, without registration under CDM. No Prior Consideration Form is required to be submitted to either the DNA or the UNFCCC secretariat when considering registering a PoA under the CDM. The maximum duration of a PoA is 28 years, renewed every 7 years as per “Procedure for renewal of crediting period of registered CDM project activity.”

### ***2. Coordinating /Managing Entity (CME)***

At the centre of each PoA is a Coordination / Managing Entity (CME). A CME manages the overall PoA and is responsible for initially developing eligibility criteria for the inclusion of CPAs in a PoA. He/She has to authorize and coordinate the implementation of the PoA, ensure that there is no double counting or erroneous inclusion and communicate with the Clean Development Mechanism Executive Body (CDM EB) regarding registration and issuance. The CME is also responsible for ensuring that the potential CPA meets all the requirements of the eligibility criteria before being included in a PoA. In the case of issuance, all Certified Emission Reductions (CERs) for the CPAs are issued to the CME who will then hand over to the relevant project participants such as CPA implementers, CER offtakers, project owners, investors and lenders.

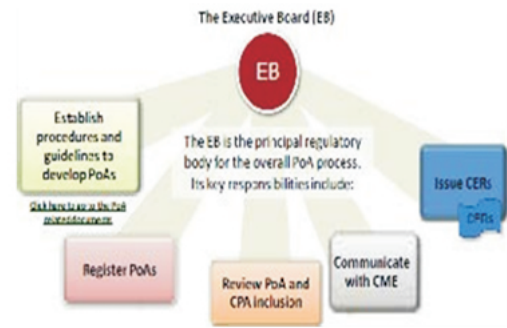
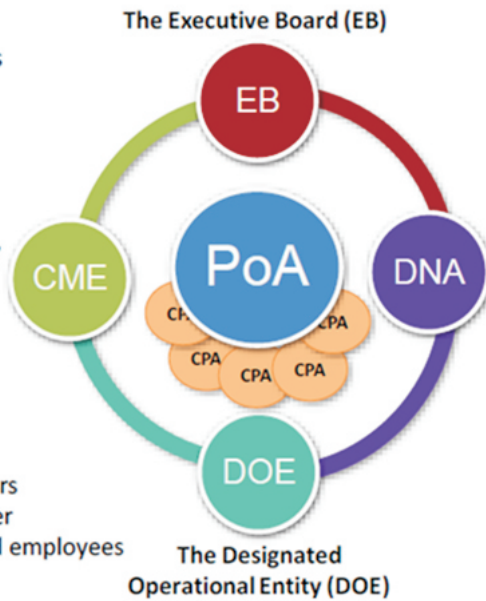
# PoA Participants

## Key Actors and Participants

- CPA implementers
- CER offtaker
- Project owners
- Investors
- Lenders

### The Coordinating/ Managing Entity (CME)

- Central and local governments
- CDM Consultants
- Technology providers
- Project Implementer
- Project workers and employees



### The Designated National Authority (DNA)

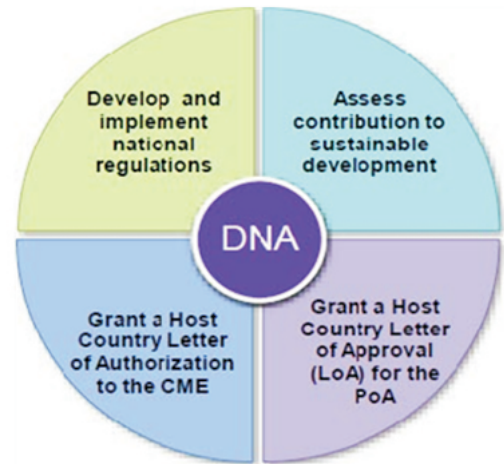


Figure 1: Key Role Players in a PoA

Source: 2010 ICSHP

### 3. Designated Operational Entity (DOE)

The DoE is responsible for the validation and verification of PoAs.

- To carry out the validation, the DOE must verify that the project meets certain basic eligibility requirements for PoAs and CPAs, consult with stakeholders, and finally provide a request for registration to the Executive Board in the form of a validation report which includes the supporting documentation, (<http://cdmrulebook.org>).
- The DOE also has to place the PoA on the UNFCCC website for global stakeholder consultation as one of the requirements of validation.
- The DoE is also liable for the CERs issued for CPAs that have been included erroneously.

- The DOE's role in the verification and certification of a Programme of Activities (PoA) differs slightly to standard CDM projects. Only a sample of CDM Programme Activities (CPAs) included under the PoA needs to be subject to verification, but this depends on the procedures outlined in the Programme of Activities Design Document (CDM-POA-DD) (<http://cdmrulebook.org>). Upon verification of a PoA, the DOE shall request the CDM EB to issue CERs accordingly.

#### **4. PoA Documentation**

Separate Programme of Activities - Design Documents (PoA-DDs) exists for each PoA type, as follows:

- Large-scale PoAs - CDM-POA-DD
- Small-scale PoAs - CDM-SSC-POA-DD
- Forestry PoAs - CDM-POA-DD-AR
- Small-scale forestry PoAs - CDM-POA-DD-SSC-AR

A small-scale PoA, for example, is a PoA made up entirely of small-scale CPAs. In this case, each of the CPAs would be entitled to use the simplified baseline and monitoring methodologies developed for small-scale project activities. The Executive Board has also clarified that, in completing the Programme of Activities Design Document (CDM-POA-PDD), the boundary must be clearly defined:

- Taking into consideration all applicable national and/or sectoral policies and regulations within that chosen boundary are reflected in the termination of the baseline - EB 47, Annex 29, paragraph 4(b).

As is the case with Programme of Activities (PoA) Design Documents, separate CDM Programme Activity (CPA) Design Documents exist for each CPA type, as follows:

- Large-scale CPAs - CDM-CPA-DD
- Small-scale CPAs - CDM-SSC-CPA-DD
- Forestry CPAs - CDM-CPA-DD-AR
- Small-scale forestry CPAs - CDM-CPA-DD-SSC-AR

(<http://cdmrulebook.org>).

In the case where there is reason to believe that a CPA has been included erroneously, the DNA should notify the board by means of a request for review form (F-CDM-CPAR).

### 5. CDM PoA Cycle

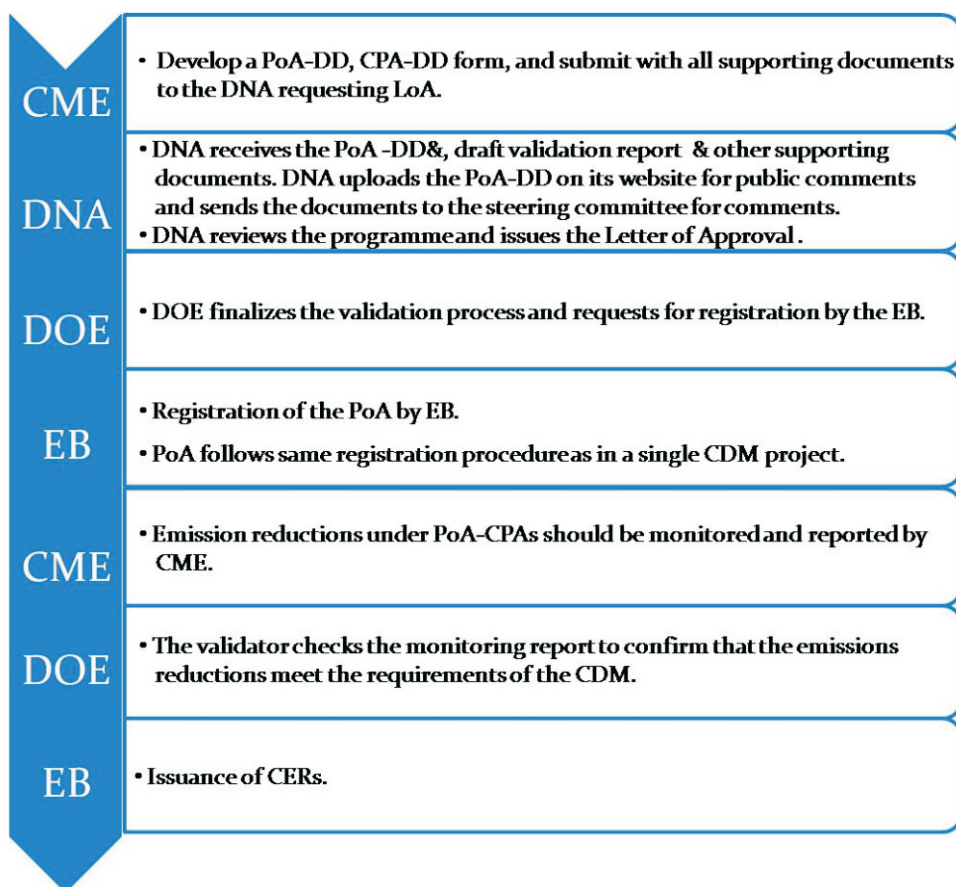


Figure 2: PoA Cycle

### 6. Multilateral or Regional PoAs

A PoA also explicitly allows for the development and inclusion of CPAs in several different host countries. In principle, the regular CDM has no restrictions on including different host countries and developing a project or a bundle of projects that cover different countries. A PoA offers the possibility of unlimited replication of projects under one umbrella, making it possible for project developers to expand the geographical coverage to different host countries. Adding CPAs over time allows project proponents to expand into regions and countries. In South Africa, for a regional PoA, South Africa should be included in the original PoA boundary if the 1<sup>st</sup> CPA is not implemented in South Africa. Upon inclusion of a CPA from South Africa, the DNA will then issue a LoA for that particular CPA. Cross Border PoAs however are subject to their own complexities. Currently with the lack of standardised baselines, each country involved in the boundary of a PoA will require a different baseline which may pose a challenge when determining the baselines emissions of a PoA. In addition, PoAs are often closely linked to national policies and institutions. As a result, a multiregional PoA might need to rely on a completely different set of actors (e.g. service

providers) and policies in each of the host countries involved, for example the approval of a PoA with a first CPA in particular country does not necessarily guarantee the approval of CPAs in subsequent countries as approval procedures and criteria differ from country to country. It thus imperative for the CME to consult with all DNAs of host countries involved in a PoA boundary before continuing with the registration of the PoA.

### ***Advantages of PoAs***

- Not all individual activities have to be known or identified at initial stage when the PoA is registered, but can be included periodically as the programme develops;
- PoAs can shorten the time needed for a project to be included in the CDM to a period of weeks rather than years;
- PoAs allow for the development and inclusion of CPAs in several different host countries (regional PoAs);
- PoAs increase the opportunities of poor countries or organisations to access the carbon market, as in instances where single projects may be too small to be commercially attractive, where the solution would be to combine several small-scale CPAs under an umbrella of PoA.
- It is less expensive to register a PoA where CPAs can then be included later on as they get identified as compared to registering individual projects separately;
- It allows the promotion of a policy goal, e.g. improved efficiency standards;
- Reduces the regulatory risks and uncertainties;
- Reduces the transaction costs as verification can be done on a collective basis and can utilize a sampling approach,;
- Decentralizes decision making which can speed up the approval process and allow for the scaling-up of the emission reductions achievable through the CDM;
- Allows the CDM to be used to achieve emission reductions in more scatter areas (e.g. household and small commercial level, transport, agriculture).
- PoA enables projects with high replication potential that can be implemented over a long period of time.

## ***Disadvantages of PoAs***

- The cost of setting up a PoA is significantly higher than the cost of setting up a normal CDM activity.
- Developing the PoA documentation and registering is likely to take significantly more time than for a single CDM activity.

**NB:** A PoA should be developed only in cases where the CME has no viable alternative such as bundle and stand-alone activities. Bundling may be more attractive in situations where the exact number and location of all subprojects is known and these are implemented.

## ***7. Global PoA Status:***

Currently there are 20 registered (August 2012) programmes of which two are from South Africa. About 30% of the registered PoAs are from Africa. There is currently no regional PoA that has been registered. The registered South African PoAs are “**SASSA Low Pressure Solar Water Heater Programme**” and “**Standard Bank Low Pressure Solar Water Heater Programme for South Africa.**”

## ***8. South African DNA***

The role of the DNA is to review and approve submitted project proposals in accordance with section 40(a) of the Marrakech Accords and also promote CDM in South Africa. As part of CDM promotion, the DNA together with Project developers, DOEs, and Financiers conducts capacity building activities and raises awareness on CDM with emphasis on PoAs due to its advantages.



**Figure 3: DNA facilitating capacity building workshop on POA**

## ***Potential PoAs in South Africa***

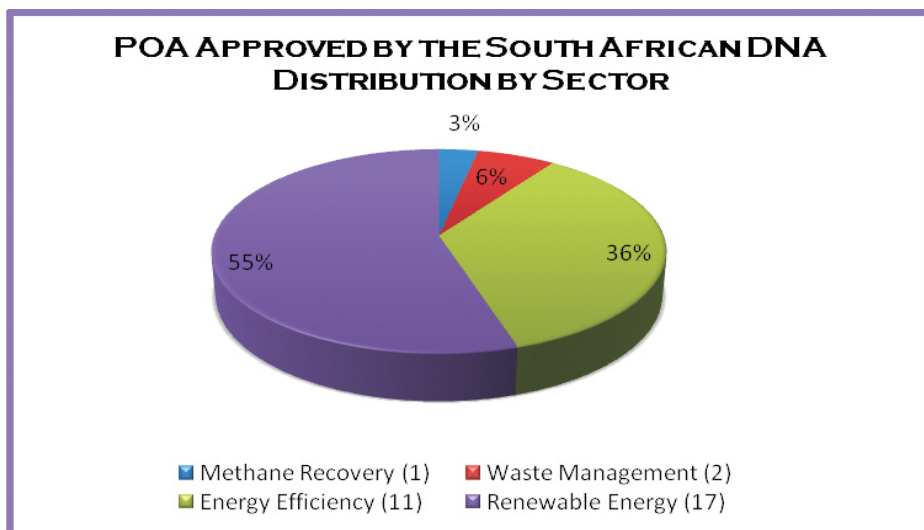
- Solar Water Heating Programmes across all provinces
  - Installation of CFLs and LEDs across different residential and provincial areas in South Africa
-

- The use of energy efficient cooking stoves across provinces in South Africa
- Renewable Energy PoAs (Wind, Hydro, Solar)
- Water Purification PoAs

***PoAs in South Africa (LoA Issued, not yet registered)***

Since its inception in December 2004 till August 2012, the South African Designated National Authority (DNA) has granted host country approval to 31 PoA proposals, of which 30 are Project Design Documents and one is a Project Idea Note. Out of 30 PDDs, 2 have been registered by the CDM Executive Board. These programmes will be implemented within the South African boundary and others are regional. The DNA hopes for the registration of all approved PoAs before the 31<sup>st</sup> of December 2012. Some of the examples are listed below:

- Heat Retention Cooking in South Africa
- LED’s Kick-off
- Standard Bank Low Pressure Solar Water Heater Programme for South Africa
- International Water Purification
- Southern African Solar Electrical Energy Programme (SASEE PoA)
- Southern African Renewable Energy PoA
- South African Solar Thermal Energy Programme (SASTE PoA)



**Figure 4: PoAs Approved by the SA DNA**

## **9. Case Studies of South African Success**

### **SASSA Low Pressure Solar Water Heater Programme**

The SASSA Low Pressure Solar Water Heater programme involves installation of low pressure vacuum tube Solar Water Heater's (SWHs) that have been approved by the South African Bureau of Standards (SABS). The size of the SWH may vary, but are typically 110-litre storage tank SWHs. The programme will be implemented throughout South Africa. The programme is South Africa's first registered PoA and the first-ever solar water heating (SWH) specific programme in the CDM framework.



**Figure 5 SASSA Low Pressure Solar Water Heating Programme**

#### **Programme Status**

The programme was approved by the DNA on 12 November 2010 and registered by CDM Executive Board on 12 April 2011. It was validated by Japan Consulting Institute (JCI) as a **small-scale** programme. The crediting period for the programme is 10 years.

#### **Contribution to Sustainable Development**

- **Economic:**

With the 75,000 installations, the programme generates the expected annual average emission reductions of approximately 97, 000t CO<sub>2</sub> (using the South Africa grid emission factor of 0.95t/CO<sub>2</sub> per MWh). Upon completion, CPA-002 will bring the total units installed to 90,000. Solar Academy of Sub Saharan Africa (SASSA) supports localisation and has established a local manufacturing plant whereby approximately 87% of all components will be sourced locally.

- **Environment:**

The project will result in estimated annual reductions of GHG emissions of 76945 tons of CO<sub>2e</sub> per annum.

- **Social:**

Over 5 million households in South Africa typically heat their hot water with electric kettles, kerosene stoves etc (suppressed demand baseline). The programme thus contributes towards to the South African Government's target to install 1 million SWHs in low-income houses by 2014. The programme installs SWHs at no cost to the community thereby improving the livelihood. By the end of September 2011, approximately 75,000 installations were installed in low income households, free of charge, with the help of carbon revenues which covers the shortfall in the Eskom rebate. The programme aims to achieve over 200,000 installations over a 10 year crediting period which will have immediate impacts on the livelihood, health and economic well-being of the targeted low income households which have never had proper water heating systems. More than

800 new jobs were created through this project which benefit and educate local communities on alternative energy sources. 10% of all installers from the respective beneficiary communities were trained to become qualified plumbers.



**Figure 6: Installation of a SHW of the SASSA programme promoting access to services through free installations thereby improving livelihood.**

## **Standard Bank Low Pressure Solar Water Heater Programme for South Africa**

The objective of the Programme of Activities is to install South African Bureau of Standards (SABS) approved non-pressure (also called low-pressure) Solar Water Heaters (SWHs) to low income households at minimal cost. The SWHs will replace conventional means of heating up water and hence reduces CO<sub>2</sub> emissions. The proposed project activity will reduce greenhouse gas emissions by 385 632 tonne of carbon dioxide

equivalent (tCO<sub>2</sub>e) per annum, over a crediting period of 10 years.



**Figure 7: SWH installed at one of the houses participating in the Standard Bank Low Pressure Solar Water Heater Programme for South Africa**

### **Programme Status**

The programme was approved by the DNA on 9<sup>th</sup> September 2011 and registered by CDM Executive Board on 24 April 2012. It was validated by Japan Consulting Institute (JCI) as a **small-scale** programme.

### **Contribution to Sustainable Development**

#### **Environment:**

The program will contribute towards a sustainable low carbon economy by making use of renewable energy and reducing electricity consumption, thereby reducing the amount of greenhouse gases produced by fossil fuel combustion at the national electricity utility.

#### **Social:**

Through the programme, approximately 60 jobs will be created in the solar sector, with the training provided for technicians to install and maintain the SWH systems. The project will result in skills development. The CPA implementer, Inti Solar will implement an educational program in the communities to increase awareness of the residents and understanding of SWH.

## **Economic:**

The proposed CPA will reduce electric water heating loads and help South Africa to correct the energy mix, with a great focus on renewable energy. The project will create job opportunities for the locals during the installation and maintenance of the SWHs.

- **Challenges and Lessons Learnt**

The success of these programmes in South Africa indicates that similar programmes could be implemented around the world, utilising a similar model or framework. These types of project activities are particularly suitable for African circumstances, where barriers such as poor access to capital and lack of modern technologies are abound. The assurances that installations are undertaken as per the CDM framework, in conjunction with the provision of carbon finance, are of crucial importance in overcoming such obstacles.

### ***Conclusion***

PoAs offer the opportunity to cut costs and timelines associated with registering CDM projects. They also offer opportunities for poorer countries and organisations to benefit from the carbon finance market by registering a programme instead of individual expensive small scale CDM projects. Regional PoAs also allow similar PoAs to be implemented across country thereby promoting sustainable development such as technology transfer, poverty alleviation, universal access to energy and services as well as promoting foreign investment across all countries involved. Of the biggest advantages of PoAs is the ability to include an unlimited number of CPAs to a registered PoA at anytime during the project lifetime. However the challenge lies with erroneous inclusion of CPAs where then the liability for the CERs has to be accounted for by the responsible DOE. Lack of standardized baselines also offer a challenge for regional PoAs as individual baselines within a particular country have to be determined resulting in increased costs and time consumption as well as posing a big challenge in determining the baseline for the PoA. As demonstrated by the SASSA and Standard Bank PoAs, it is possible to achieve success with PoAs. Given the number of PoAs approved by the South African DNA, South Africa is still in the running towards registering more PoAs that will continue to generate CERs from newly added CPAs.

### ***References***

<http://cdmrulebook.org>

<http://cdm.unfccc.int/>

Climate Focus, April 2011, **The Handbook of programmes of Activities: Practical Guidance to successful Implementation.**

### Useful websites

<http://www.energy.gov.za>

<http://www.unfccc.int>

<http://www.cdmrulebook.org>

<http://www.cdmazaar.net>

<http://www.pointcarbon.com>

### ACRONYMS

CDM EB	Clean Development Mechanism Executive Board
CERs	Certified Emission Reductions
CME	Coordination / Managing Entity
CPA	CDM Programme Activity
DG	Director General, Department of Energy
DNA	Designated National Authority
DoE	Department of Energy
DOE	Designated Operational Entity
GHG	Greenhouse Gas
JCI	Japan Consulting Institute
PoA	Programme of Activity
PoA DD	Programme of Activity Design Document
RE	Renewable Energy
SABS	South African Bureau of Standards
SASSA	Solar Academy of Sub Saharan Africa
SWHs	Solar Water Heaters
UNFCCC	United Nations Framework Convention on Climate Change

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