The CDM: Project-Cycle & Sudan case study

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The International Response to Climate Change

Over the past 18 or so years, the international community has sought to respond to climate change by reducing the amount of greenhouse gases released into the atmosphere from human-related activities.

United Nations Framework Convention on Climate Change (UNFCCC) agreement provides a framework
Kyoto Protocol is a subsidiary agreement under the UNFCCC allows for several market-based mechanisms to assist developed countries (Annex I parties) to meet their emissions reduction targets.

Joint Implementation allows a Kyoto Protocol Annex I party to fund and/or run a project to reduce emissions in a non-Annex I party. The funding country can then apply the emissions reductions generated to help it to meet its own Kyoto target.

Through the Clean Development Mechanism (or...
Types of CDM projects

Include: renewable energy; fuel switching (from oil, gas or diesel to gas or biofuels); projects to capture greenhouse gases released from landfill sites; energy efficiency projects; activities to reduce methane from agricultural processes; and forestry-related projects, among others.
Additionality

Environmental additionality – the project produces fewer greenhouse gas emissions than the baseline scenario.

It is essential that the project achieve environmental additionality – otherwise, it will not generate any carbon credits!

However, the project developer must also usually demonstrate that, without carbon revenues, the project would not be viable and/or commercially attractive – this is known as financial additionality.
### Crediting period

#### CDM mitigation projects
- Project developers have two crediting period options:
  - A maximum of 7 years, which can be renewed up to 2 times (i.e. a potential total crediting period of 21 years)
  - A maximum of 10 years, with no option for renewal

#### CDM sequestration projects (forestry)
- Project developers have two crediting period options:
  - A maximum of 20 years, which can be renewed up to 2 times (i.e. a potential total crediting period of 60 years)
  - A maximum of 30 years, with no option for renewal
International CDM bodies

- Conference of Parties to the UNFCCC, Meeting of the Parties to the Kyoto Protocol (COP/MOP)

CDM Executive Board (CDM-EB)

- Accreditation Panel
  - Recommends to the EB on the accreditation of an Applicant Entity (AE), suspension, withdrawal and/or re-accreditation of a DOE

- Afforestation and Reforestation Working Group
  - Recommends to the EB on baseline and monitoring methodologies for A/R CDM

- Methodology Panel
  - Recommend to the EB on baseline and monitoring methodologies, revisions to the PDD, etc.

- Small Scale CDM Panel
  - Recommend to the EB on baseline and monitoring methodologies for small-scale project activity

- CDM Registration and Issuance Team
  - Assists the CDM EB by appraising requests for project registration and requests for CER issuance

CDM EB operates under the authority of the COM/MOP
The CDM project cycle

- Project feasibility assessment / PIN
- CDM project development / PDD
- Host country approval
- Project validation
- Project registration
- Project verification
- CER issuance

6 to 12 months

1.5 months

Crediting period of the project
The Project Idea Note (PIN)

The PIN is typically a five-page document providing information on a CDM project.

Some countries require a PIN in order to be able to obtain a letter of endorsement from the DNA of the host country.

The PIN is typically used as a marketing tool – to distribute to potential CDM investors to begin negotiations on partnership or purchase of CERs.

The PIN has three main components:
- Project description – type of project, location, schedule, etc.
- Finance – expected costs and expected revenues
- Expected environmental and social benefits
### The CDM project cycle

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The Project Design Document (PDD)

- An official component of the CDM project cycle
- Official standardized template is available from the UNFCCC website
- Covers all the information essential for ‘carbon layer’ assessment.
- Incorporates significant project thinking – project design, partnerships, funding, revenue and cost forecasts, due diligence, sensitivity analysis, etc.
- The PDD is validated by a Designated Operational Entity (DOE) and describes the baseline and monitoring methodology that must be carried out
- PDDs are public documents
# The CDM project cycle

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The **Designated National Authority** (DNA) is the legal entity authorised to sign a Letter of Approval (LoA) for a CDM project. Typically an inter-ministry agency (Environment, Economy, Energy, Meteorology, etc.) with a small secretariat.

The DNA provides **written approval** that the CDM project assists in achieving the country’s sustainable development. The details of the approval procedure are up to each country. Typically, 3 broad development criteria are employed:

- **Economic**: the project has a positive effect on economic development
- **Environmental**: the project leads to reduced pressure on the environment
- **Social**: the project has positive effects on social development
## The CDM project cycle

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Validation – a process of systematic assessment leading to a statement on the reasonableness of the assertion of future greenhouse gas performance

Basically – is the plan reasonable?
The CDM project cycle

- **Project DNA**
  - Project feasibility assessment / PIN
  - CDM project development / PDD

- **Host country approval**

- **Project validation**

- **Project registration**

- **Project verification**

- **CER issuance**

- **Crediting period of the project**

- **6 to 12 months**
  - 1.5 months
Project validation

- A required ‘pre-approval’ step for CDM project registration
- Undertaken before the project crediting period, and (typically) before implementation / construction of the project
- Requires assessment of the assumptions, calculations, methodologies and justifications relating to the baseline scenario
  - Is the project truly additional?
  - Will the greenhouse gas emission reductions be monitored and calculated appropriately?

Provides no assurance of the project’s future performance!
Project validation

Undertaken by Designated Operational Entities (DOEs):

- Essentially audit companies:
  - Confirm that the PDD conforms to CDM requirements and correctly applies the baseline methodology and greenhouse gas quantification procedures
  - Check calculations are accurate and assumptions are reasonable in the PDD
  - Confirm that the project satisfies the additionality requirement
  - Make the PDD available for public review

Submit the PDD to the CDM Executive Board for registration (together with Letter of Approval from the DNA)
Other host country requirements

- Compliance with national policies:
  - Environmental Impact Assessment
  - Sectoral regulations (construction permits, licences, etc)
  - Compatibility with local/sectoral strategies and priorities

- Public participation:
  - Comments by local stakeholders directly and indirectly involved with the project

- Infrastructure and technical capacity:
  - Local availability of qualified human resources
  - Local availability of adequate institutional resources
The CDM Executive Board (EB) checks that the submitted PDD and accompanying documents are **complete**.

The **CDM Registration Fee** is paid.

The PDD is then placed on the UNFCCC website for a period of 8 weeks for public comment – known as a “request for registration”

The CDM EB can request changes to the project design or can reject the project outright.

Otherwise, the project is formally registered as a CDM project
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**Verification** – a process of systematic assessment leading to a statement confirming the assertion that past greenhouse gas performance has been appropriately calculated and reported.

**Basically** – provides confirmation of the greenhouse gas assertion.
Project verification

- **Undertaken after the CDM** project has been implemented and has started to *generate greenhouse* gas reductions.

- **Typically** requires rigorous data collection, testing and evaluation of evidence to present a complete *audit trail*.

- **Essentially**, seeks to confirm two things:
  
  - that past *greenhouse gas* performance has been appropriately calculated and reported
  
  - that the project has been executed in accordance with the validated PDD

- **Verification** is undertaken by a DOE – but not the one that performed the validation.

  Verification can take place as often as the project developer wishes – represents a balance between cost and revenue.
# The CDM project cycle

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The link between validation and verification

Before the project...

Validation gives assurance that if the project is implemented according to the Project Design Document (PDD) then it will meet CDM eligibility criteria and that, once verified, CERs will be issued.

- Once validation is achieved, the bargaining power of the project developer increases considerably – as does the price of the CERs.

During the project...

Verification provides assurance that the project developer has adhered to the validated PDD and that emission reductions have, in fact, taken place.

- Once results are verified, CERs can be issued. These are a uniform (hard) currency, and have a higher value than any ‘projected’ CERs.
What do you need to know about verification...

The best project in the world is worthless if not monitored properly:

- If the project developer does not collect (with calibrated instruments), process and record relevant data during the operation of the project, it is usually not possible to reconstruct (back-cast) this data.

If data is not transparently available to the DOE, certification will not be possible.

- If the Monitoring Report fails verification, the project cannot be issued with CERs.
Certification and CER issuance

The DOE provides a verification report to the project participants and the executive board. The report is made publicly available.

The verification report constitutes a request for issuance to the EB of CERs equal to the verified amount of reductions of anthropogenic emissions by sources of greenhouse gases.

The issuance of CERs is considered final 15 days after the date of receipt of the request for issuance.

The EB then instructs the CDM registry to issue the specified quantity of CERs in the CDM registry:
The CDM project cycle

- **Project DNA**
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- **6 to 12 months**
  - Host country approval
  - Project validation

- **1.5 months**
  - Project registration

- **Crediting period of the project**
  - Project verification
  - CER issuance
Agricultural technology transfer society (ATTS) CDM project

ATTS proposed a small scale program of activities (PoA) which involves the implementation of biogas units to households in rural areas of North Kordofan in Sudan.

The aim is to switch from traditional non-renewable biomass resources (i.e., fuel wood) or fossil fuels to renewable biogas from manure management for cooking purposes in the rural households of Sudan.

A single, small scale biodigester reduces around 4.65 tCO2-eq/year.
In the absence of the implementation of the PoA all the manure would be left to decay and thus the PoA will contribute to the sustainable development of the rural households involved in the project.

Biodigesters construction provides opportunities for skilled local employment.

Biogas could increasingly replace firewood as a source of energy.

Biogas systems yield more and better fertilizer.
Agricultural Technological Transfer Society (ATTS) is the coordinating/managing entity ("CME") for this SSC-PoA and will be implementing the CDM. Each component project activity (CPA) under the proposed SSC-PoA will involve in the implementation of biogas digesters of 6 m3 capacity each for single households.

Core CarbonX Solutions Pvt Ltd, an international strategic advisory service firm offers carbon management services to ATTS. These range from the development of the project document (PoA-DD),
The PIN has been submitted to the DNA and a letter of no objection was obtained.

A stakeholder meeting was carried out on 21st March 2013 at El-Obeid city capital. Invitees included national and international NGOs, research institutions, universities, government officials, humanitarian affair commission representative, and villagers’ representatives.

Five digesters have been installed through self support.
many Thanks!