



## ANNEXES

The basic text of this manual provides an overview of the Clean Development Mechanism process and factors that will further its successful implementation. The following five annexes provide more detailed, supplementary materials, including a template of the project design document; a summary of the World Wildlife Fund's 'Gold Standard' code of best practices; details on some of the more technical issues raised in the text; a compendium of resources; and a glossary of relevant terms:

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# ANNEX I

## Clean Development Mechanism Project Design Document (CDM-PDD)

Version 01<sup>1</sup>



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### ANNEXES

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### INTRODUCTORY NOTE

1. This document contains the clean development mechanism project design template (CDM-PDD).  
It elaborates on the outline of information in Appendix B 'Project Design Document' to the Modalities and Procedures (decision 17/CP.7 contained in document FCCC/CP/2001/13/Add.2).
2. The CDM-PDD can be obtained electronically through the UNFCCC CDM web site (<http://cdm.unfccc.int/Reference/Documents>), by e-mail ([cdm-info@unfccc.int](mailto:cdm-info@unfccc.int)) or in printed form from the UNFCCC secretariat (Fax: +49-228-8151999).
3. *Explanations for project participants are in italicized font.*
4. The Executive Board may revise the project design document (CDM-PDD), if necessary. Revisions shall not affect CDM project activities validated at and prior to the date at which a revised version of the CDM-PDD enters into effect. Versions of the CDM-PDD shall be consecutively numbered and dated.
5. In accordance with the CDM M&P, the working language of the Board is English. The CDM-PDD shall therefore be submitted to the Executive Board filled in English. The CDM-PDD format will be available on the UNFCCC CDM web site in all six official languages of the United Nations.
6. The Executive Board recommends to the COP (COP/MOP) to determine, in the context of its decision on modalities and procedures for the inclusion of afforestation and reforestation activities in the CDM (see also paragraph 8-II of decision 17/CP.7), whether the CDM-PDD shall be applicable to this type of activities or whether modifications are required.
7. A glossary of terms may be found on the UNFCCC CDM web site or from the UNFCCC secretariat by e-mail ([cdm-info@unfccc.int](mailto:cdm-info@unfccc.int)) or in print (Fax: +49-228-8151999).

<sup>1</sup> Adapted from the UNFCCC website (<http://cdm.unfccc.int/Reference/Documents>).

## **A. GENERAL DESCRIPTION OF PROJECT ACTIVITY**

### **A.1 Title of the project activity:**

### **A.2. Description of the project activity:**

*(Please include in the description*

- the purpose of the project activity*
- the view of the project participants of the contribution of the project activity to sustainable development (max. one page).)*

### **A.3. Project participants:**

*(Please list Party(ies) and private and/or public entities involved in the project activity and provide contact information in Annex 1.) (Please indicate at least one of the above as the contact for the CDM project activity.)*

### **A.4. Technical description of the project activity:**

#### **A.4.1. Location of the project activity:**

**A.4.1.1** Host country Party(ies):

**A.4.1.2** Region/State/Province etc.:

**A.4.1.3** City/Town/Community etc:

**A.4.1.4** Detail on physical location, including information allowing the unique identification of this project activity  
(max one page):

#### **A.4.2. Category(ies) of project activity**

*(Using the list of categories of project activities and of registered CDM project activities by category available on the UNFCCC CDM web site, please specify the category(ies) of project activities into which this project activity falls. If no suitable category(ies) of project activities can be identified, please suggest a new category(ies) descriptor and its definition, being guided by relevant information on the UNFCCC CDM web site.)*

#### **A.4.3. Technology to be employed by the project activity:**

*(This section should include a description on how environmentally safe and sound technology and know-how to be used is transferred to the host Party, if any.)*

#### **A.4.4. Brief explanation of how the anthropogenic emissions of anthropogenic greenhouse gas (GHGs) by sources are to be reduced by the proposed CDM project activity, including why the emission reductions would not occur in the absence of the proposed project activity, taking into account national and/or sectoral policies and circumstances:**

*(Please explain briefly how anthropogenic greenhouse gas (GHG) emission reductions are to be achieved (detail to be provided in section B.) and provide the total estimate of anticipated reductions in tonnes of CO<sub>2</sub> equivalent as determined in section E. below.)*

#### **A.4.5. Public funding of the project activity:**

*(In case public funding from Parties included in Annex I is involved, please provide in Annex 2 information on sources of public funding for the project activity, including an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties.)*

## B. BASELINE METHODOLOGY

### B.1. Title and reference of the methodology applied to the project activity:

(Please refer to the UNFCCC CDM web site for the title and reference list as well as the details of approved methodologies. If a new baseline methodology is proposed, please fill out Annex 3. Please note that the table “Baseline data” contained in Annex 5 is to be prepared parallel to completing the remainder of this section.)

### B.2. Justification of the choice of the methodology and why it is applicable to the project activity

### B.3. Description of how the methodology is applied in the context of the project activity:

### B.4. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity

(i.e. explanation of how and why this project is additional and therefore not the baseline scenario)

### B.5. Description of how the definition of the project boundary related to the baseline methodology is applied to the project activity:

### B.6. Details of baseline development

**B.6.1** Date of completing the final draft of this baseline section (DD/MM/YYYY):

**B.6.2** Name of person/entity determining the baseline:

(Please provide contact information and indicate if the person/entity is also a project participant listed in Annex 1.)

## C. DURATION OF THE PROJECT ACTIVITY / CREDITING PERIOD

### C.1 Duration of the project activity:

**C.1.1.** Starting date of the project activity: (For a definition by the Executive Board of the term “starting date”, please refer to UNFCCC CDM web site. Any such guidance shall be incorporated in subsequent versions of the CDM-PDD. Pending guidance, please indicate how the “starting date” has been defined and applied in the context of this project activity.)

**C.1.2.** Expected operational lifetime of the project activity: (in years and months, e.g. two years and four months would be shown as: 2y-4m)

### C.2. Choice of the crediting period and related information: (Please underline the appropriate option (C.2.1 or C.2.2.) and fill accordingly)

(Note that the crediting period may only start after the date of registration of the proposed activity as a CDM project activity. In exceptional cases, the starting date of the crediting period can be prior to the date of registration of the project activity as provided for in paras. 12 and 13 of decision 17/CP.7 and through any guidance by the Executive Board, available on the UNFCCC CDM web site)

#### C.2.1. Renewable crediting period (at most seven (7) years per period)

**C.2.1.1.** Starting date of the first crediting period (DD/MM/YYYY):

**C.2.1.2.** Length of the first crediting period (in years and months, e.g. two years and four months would be shown as: 2y-4m):

#### C.2.2. Fixed crediting period (at most ten (10) years):

**C.2.2.1.** Starting date (DD/MM/YYYY):

**C.2.2.2.** Length (max 10 years): (in years and months, e.g. two years and four months would be shown as: 2y-4m)

## D. MONITORING METHODOLOGY AND PLAN

(The monitoring plan needs to provide detailed information related to the collection and archiving of all relevant data needed to

- estimate or measure emissions occurring within the project boundary;
- determine the baseline; and;
- identify increased emissions outside the project boundary.

The monitoring plan should reflect good monitoring practice appropriate to the type of project activity.

Project participants shall implement the registered monitoring plan and provide data, in accordance with the plan, through their monitoring report.

Operational entities will verify that the monitoring methodology and plan have been implemented correctly and check the information in accordance with the provisions on verification. This section shall provide a detailed description of the monitoring plan, including an identification of the data and its quality with regard to accuracy, comparability, completeness and validity, taking into consideration any guidance contained in the methodology.

Please note that data monitored and required for verification and issuance are to be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.)

### D.1. Name and reference of approved methodology applied to the project activity:

(Please refer to the UNFCCC CDM web site for the name and reference as well as details of approved methodologies. If a new methodology is proposed, please fill out Annex 4.) (If a national or international monitoring standard has to be applied to monitor certain aspects of the project activity, please identify this standard and provide a reference to the source where a detailed description of the standard can be found.)

### D.2. Justification of the choice of the methodology and why it is applicable to the project activity:

### D.3. Data to be collected in order to monitor emissions from the project activity, and how this data will be archived: (Please add rows to the table below, as needed)

ID number (Please use numbers to ease cross-referencing to table D.6)	Data type	Data variable	Data unit	Measured (m), calculated (c) or estimated (e)	Recording frequency	Proportion of data to be monitored	How is the data archived? (electronic/paper)	For how long is archived data to be kept?	Comment

### D.4. Potential sources of emissions which are significant and reasonably attributable to the project activity, but which are not included in the project boundary, and identification if and how data will be collected and archived on these emission sources. (Please add rows to the table below, as needed)

ID number (Please use numbers to ease cross-referencing to table D.6)	Data type	Data variable	Data unit	Measured (m), calculated (c) or estimated (e)	Recording frequency	Proportion of data to be monitored	How is the data archived? (electronic/paper)	For how long is archived data to be kept?	Comment

**D.5. Relevant data necessary for determining the baseline of anthropogenic emissions by sources of GHG within the project boundary and identification if and how such data will be collected and archived.** (Depending on the methodology used to determine the baseline this table may need to be filled. Please add rows to the table below, as needed.)

ID number (Please use numbers to ease cross-referencing to table D.6)	Data type	Data variable	Data unit	Will data be collected on this item? (If no, explain).	How is the data archived? (electronic/paper)	For how long is data archived to be kept?	Comment

**D.6. Quality control (QC) and quality assurance (QA) procedures are being undertaken for data monitored.** (data items in tables contained in section D.3., D.4. and D.5 above, as applicable)

Data (Indicate table and ID number e.g. D.4-1; D.4-2)	Uncertainty level of data (High/Medium/Low)	Are QA/QC procedures planned for these data?	Outline explanation why QA/QC procedures are or are not being planned.

**D.7 Name of person/entity determining the monitoring methodology:** (Please provide contact information and indicate if the person/entity is also a project participant listed in Annex 1 of this document.)

## E. CALCULATION OF GHG EMISSIONS BY SOURCES

**E.1.** Description of formulae used to estimate anthropogenic emissions by sources of greenhouse gases of the project activity within the project boundary: (for each gas, source, formulae/ algorithm, emissions in units of CO<sub>2</sub> equivalent)

**E.2.** Description of formulae used to estimate leakage, defined as: the net change of anthropogenic emissions by sources of greenhouse gases which occurs outside the project boundary, and that is measurable and attributable to the project activity: (for each gas, source, formulae/ algorithm, emissions in units of CO<sub>2</sub> equivalent)

**E.3.** The sum of E.1 and E.2 representing the project activity emissions:

**E.4.** Description of formulae used to estimate the anthropogenic emissions by sources of greenhouse gases of the baseline: (for each gas, source, formulae/algorithm, emissions in units of CO<sub>2</sub> equivalent)

**E.5.** Difference between E.4 and E.3 representing the emission reductions of the project activity:

**E.6.** Table providing values obtained when applying formulae above:

## F. ENVIRONMENTAL IMPACTS

**F.1.** Documentation on the analysis of the environmental impacts, including transboundary impacts  
(Please attach the documentation to the CDM-PDD.)

**F.2.** If impacts are considered significant by the project participants or the host Party:  
please provide conclusions and all references to support documentation of an environmental impact assessment that has been undertaken in accordance with the procedures as required by the host Party.

## G. STAKEHOLDERS COMMENTS

**G.1.** Brief description of the process on how comments by local stakeholders have been invited and compiled:

**G.2.** Summary of the comments received:

**G.3.** Report on how due account was taken of any comments received:

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## ANNEX 1.1

### CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

(Please copy and paste table as needed)

Organization:
Street/P.O.Box:
Building:
City:
State/Region:
Postfix/ZIP:
Country:
Telephone:
FAX:
E-Mail:
URL:
Represented by:
Title:
Salutation:
Last Name:
Middle Name:
First Name:
Department:
Mobile:
Direct FAX:
Direct tel:
Personal E-Mail:

## ANNEX 1.2

### INFORMATION REGARDING PUBLIC FUNDING

## ANNEX 1.3

### NEW BASELINE METHODOLOGY

(The baseline for a CDM project activity is the scenario that reasonably represents the anthropogenic emissions by sources of greenhouse gases that would occur in the absence of the proposed project activity. A baseline shall cover emissions from all gases, sectors and source categories listed in Annex A of the Kyoto Protocol within the project boundary. The general characteristics of a baseline are contained in para. 45 of the CDM M&P.

For guidance on aspects to be covered in the description of a new methodology, please refer to the UNFCCC CDM web site.

Please note that the table “Baseline data” contained in Annex 5 is to be prepared parallel to completing the remainder of this section.)

#### 1. Title of the proposed methodology:

#### 2. Description of the methodology:

**2.1.** General approach (Please check the appropriate option(s))

- Existing actual or historical emissions, as applicable;
- Emissions from a technology that represents an economically attractive course of action, taking into account barriers to investment;
- The average emissions of similar project activities undertaken in the previous five years, in similar social, economic, environmental and technological circumstances, and whose performance is among the top 20 per cent of their category.

**2.2.** Overall description (other characteristics of the approach):

#### 3. Key parameters/assumptions (including emission factors and activity levels), and data sources considered and used:

#### 4. Definition of the project boundary related to the baseline methodology:

(Please describe and justify the project boundary bearing in mind that it shall encompass all anthropogenic emissions by sources of greenhouse gases under the control of the project participants that are significant and reasonably attributable to the project activity. Please describe and justify which gases and sources included in Annex A of the Kyoto Protocol are included in the boundary and outside the boundary.)

#### 5. Assessment of uncertainties:

(Please indicate uncertainty factors and how those uncertainties are to be addressed)

#### 6. Description of how the baseline methodology addresses the calculation of baseline emissions and the determination of project additionality:

(Formulae and algorithms used in section E)

#### 7. Description of how the baseline methodology addresses any potential leakage of the project activity:

(Please note: Leakage is defined as the net change of anthropogenic emissions by sources of greenhouse gases which occurs outside the project boundary and which is measurable and attributable to the CDM project activity.) (Formulae and algorithms used in section E.5)

#### 8. Criteria used in developing the proposed baseline methodology, including an explanation of how the baseline methodology was developed in a transparent and conservative manner:

#### 9. Assessment of strengths and weaknesses of the baseline methodology:

#### 10. Other considerations, such as a description of how national and/or sectoral policies and circumstances have been taken into account:

## ANNEX 1.4

### NEW MONITORING METHODOLOGY

**Proposed new monitoring methodology** (Please provide a detailed description of the monitoring plan, including the identification of data and its quality with regard to accuracy, comparability, completeness and validity)

#### 1. Brief description of new methodology

(Please outline the main points and give a reference to a detailed description of the monitoring methodology).

#### 2. Data to be collected or used in order to monitor emissions from the project activity, and how this data will be archived

(Please add rows to the table below, as needed)

ID number (Please use numbers to ease cross-referencing to table D.6)	Data type	Data variable	Data unit	Measured (m), calculated (c) or estimated (e)	Recording frequency	Proportion of data to be monitored	How is the data archived? (electronic/paper)	For how long is archived data to be kept?	Comment

#### 3. Potential sources of emissions which are significant and reasonably attributable to the project activity, but which are not included in the project boundary, and identification if and how data will be collected and archived on these emission sources. (Please add rows to the table below, as needed)

ID number (Please use numbers to ease cross-referencing to table D.6)	Data type	Data variable	Data unit	Measured (m), calculated (c) or estimated (e)	Recording frequency	Proportion of data to be monitored	How is the data archived? (electronic/paper)	For how long is archived data to be kept?	Comment

#### 4. Assumptions used in elaborating the new methodology: (Please list information used in the calculation of emissions which is not measured or calculated, e.g. use of any default emission factors)

#### 5. Please indicate whether quality control (QC) and quality assurance (QA) procedures are being undertaken for the items monitored. (see tables in sections 2 and 3 above)

Data (Indicate table and ID number e.g. D.4-1; D.4-2)	Uncertainty level of data (High/Medium/Low)	Are QA/QC procedures planned for these data?	Outline explanation why QA/QC procedures are or are not being planned.

**6. What are the potential strengths and weaknesses of this methodology?** *(please outline how the accuracy and completeness of the new methodology compares to that of approved methodologies).*

**7. Has the methodology been applied successfully elsewhere and, if so, in which circumstances?**

*After completing above, please continue filling sub-sections D.2. and following.*

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## **ANNEX 1.5**

### **TABLE: BASELINE DATA**

*(Please provide a table containing the key elements used to determine the baseline (variables, parameters, data sources etc.). For approved methodologies you may find a draft table on the UNFCCC CDM web site. For new methodologies, no predefined table structure is provided.)*

## ANNEX II

# The Gold Standard: Quality Standards for CDM and Joint Implementation Projects<sup>1</sup>



### SUMMARY

The rules for the Clean Development Mechanism – which allows credits from projects starting after January 1, 2000 – were finalized in the 2001 Marrakech Accords. CDM operating procedures are still being developed by the CDM Executive Board. In the meantime several projects have been proposed as potential CDM activities. Many more are expected over the coming months.

A number of these projects have certain shortcomings, especially in terms of a marked failure to demonstrate ‘additionality’ and deliver added environmental and social benefits. At present a number of environmental groups do not see that the rules and guidelines being developed by the CDM Executive Board will adequately deal with these issues.

The ‘Gold Standard’ described below represents the first independent best practice benchmark for the CDM and Joint Implementation (JI) greenhouse gas offset projects. It offers project developers a tool to ensure that the CDM and JI deliver credible projects with real environmental benefits and, in so doing, give confidence to host countries and the public that projects represent additional investments in sustainable energy services.

The Gold Standard has been developed by the World Wildlife Fund (WWF) using the seminal work done by HELIO International for COP5 and subsequently refined by the SouthSouthNorth Project. This work has been done in consultation with a range of environmental, business and governmental organizations.

With appropriate design and implementation, CDM and JI projects can play a valuable role in pro-

moting the spread of sustainable energy technologies. The Gold Standard provides such guidance on project development and implementation. It is composed of a package of quality control criteria, specifically:

- Project eligibility is restricted to renewable energy and demand side energy efficiency projects because these technologies carry inherently low environmental risks;
- An explicit ‘additionality’ test is used to screen out projects that would have happened without the CDM;
- A methodology deploying environmental and social indicators is used to check the contribution of a project to sustainable development.

This document contains an overview of the rationale, structure and content of the Gold Standard. An independent Standards Advisory Board will be responsible for finalizing the standards and will continue to refine them over time. The publication of the draft Gold Standard marks the start of a final round of consultation and it is hoped that a wide range of interested parties will provide inputs.

At the end of the consultation period the Gold Standard Advisory Board will review and evaluate the comments received and, after any necessary modifications have been made, a final version of the standard will be published.

<sup>1</sup> Adapted from the webpage on WWF Gold Standard:  
[http://www.panda.org/about\\_wwf/what\\_we\\_do/climate\\_change/what\\_we\\_do/business\\_industry/gold\\_standard.cfm](http://www.panda.org/about_wwf/what_we_do/climate_change/what_we_do/business_industry/gold_standard.cfm)

## CURRENT PROBLEMS WITH THE ENVIRONMENTAL INTEGRITY OF CDM

Unfortunately, despite pressure from the environmental community and other sectors, the CDM rules and the project design document still offer little guarantee of environmental integrity.

The main weaknesses of CDM procedures in that regard include:

- A lack of guidance on the precise interpretation of additionality. Two interpretations are possible: that emissions be lower than in the 'no-project' scenario, and that the project would not have occurred without the CDM.

The first is a baseline issue whereas the second screens out 'business as-usual' projects; both are necessary to ensure effectiveness of emissions reduction projects.

Unfortunately, the second component is not dealt with in the current rules; and currently there is no indication from the CDM Executive Board or in the project design document that project developers will be obliged to show that their projects would not have happened without the CDM.

- A lack of reference to the requirement that baselines be developed in a 'conservative manner' in the project design document. This is a key provision in the Marrakech Accords and one of the few guarantees against baseline inflation. However, the Executive Board has so far offered no guidance how this requirement should be applied.
- There is similarly no reference to long-term benefits of climate change mitigation, despite this being a core part of the CDM text in the Kyoto Protocol.
- The provisions for stakeholder consultation and public participation are judged inadequate by a number of environmental interests. Although the project design documents must be posted on the Internet, there is no requirement to ensure that potentially affected stakeholders will have a guaranteed access to these PDDs, especially in the case of rural projects. Likewise, there is no requirement that documents be made available in a language familiar to stakeholders, nor that alternative methods be used when Internet access is not practical. Furthermore, there is no opportunity for further comment on project developers' and operational entities' replies, nor a direct link to the decision on project registration or approval by host country's designated national authorities. In other words, stakeholders may not be able to trace the project implementation process. In sum, there is little convincing evidence that a project would be stopped even if there were significant local opposition.
- The inclusion of a wide range of unsustainable project types – including fossil fuel technologies, large hydro and potentially large-scale monoculture plantation forestry – crowds out smaller investments in sustainable renewable energy and end-use energy efficiency. This argument is confirmed by evidence from many of the projects currently under development to be registered under the CDM. Similarly, baseline methodologies are inconsistent and tend to inflate the number of credits projects will receive.
- Finally, the contribution to sustainable development – including a transition away from 'carbon-dirty' technologies and an emphasis on positive social and environmental impacts – is often treated as an optional extra rather than a central project feature.

As mentioned above, these problems stem in part from the weaknesses in the existing rules. At the same time, while it is possible that these flaws will be rectified by the CDM Executive Board in the near-future, the extreme pressure from investors to keep carbon prices at their lowest is forcing the project developers to cut corners.

## IMPACTS OF ‘LOW-QUALITY’ CDM: THE RATIONALE FOR A GOLD STANDARD

Problems highlighted in the adjacent box mean that, in its current form, the CDM is unlikely to deliver on much of the promised assistance to the developing economies. Due to the current lack of environmental safeguards, there is a significant risk that the CDM projects will:

- Generate few net emission reductions, increasing global emissions at a time when the need for deep emissions cuts is becoming increasingly evident;
- Result in the prevalence of non-additional projects maintaining low carbon prices;
- Cause environmental and social damages to host country communities;
- Strengthen existing dependence on unsustainable energy sources and technologies while doing little to enhance the market for innovative technologies and other long-term climate solutions, despite the declarations in favor of renewable energy and energy efficiency made by many political and business leaders on numerous occasions.

Such developments would, in turn, threaten to damage the credibility of the CDM and undermine its potential to deliver the expected benefits. Four significant consequences of this are:

- Uncertainty for investors, with many rules still unknown and a lack of basic standards;
- Heightened political risks affecting projects and associated reputation risks affecting investors, particularly those who have invested in corporate social responsibility;
- Little confidence for host countries in supporting the projects since there will not be sufficient belief that such projects help them move to a sustainable energy future or represent new and additional investments; and
- Public doubts over the credibility of emission reduction projects in developing economies.

The Gold Standard has been developed with the explicit aim of addressing these problems and providing a means for focusing on its original objectives. The overall result will be the delivery of appropriate sustainable energy services. The Gold

Standard attempts to ensure that CDM is not mis-used, providing confidence to the public, investors and governments.

## DEVELOPMENT OF THE GOLD STANDARD

The Gold Standard has been developed to a stage where it is ready for a final round of inputs from stakeholders after a series of consultations with environmental groups, governments and the private sector, including investors, project developers, and verifiers.

This development has been governed by a set of basic principles:

- Standards have to be supported by a wide range of stakeholders who believe in the overriding importance of maintaining environmental integrity;
- A balance between environmental rigor with practicality – as applied to project developers and operational entities;
- Avoidance of elevating transaction costs or complicating bureaucratic procedures;
- Direct compatibility with the CDM and JI project cycles;
- Maintaining simple procedures, easily handled by standard CDM project operators, including developers, verifiers and local NGOs;
- Ensuring the creation of a global standard, readily applicable in a variety of local and national contexts and across different sectors.

To ensure adherence to the above principles, the WWF and other stakeholders undertook a wide range of consultative meetings, workshops and established an independent Standards Advisory Board comprised of NGO members, academics and renewable energy project developers from around the world, all with wide experience and knowledge of the CDM and sustainable energy. With the assistance of WWF staff and its various consultants, the Standards Advisory Board has synthesized the comments, reviewed, evaluated and improved the Gold Standard’s constituent screens to the point where the standard is now ready for final consultation.

## OVERVIEW OF THE GOLD STANDARD

The Gold Standard sets out a code of best practice on many issues in the PDD and incorporates a small number of extra screening mechanisms necessary to deliver real contributions to sustainable development in host countries plus long-term benefits to the climate.

The main components of the Gold Standard are as follows:

- A **project type** screen based on a list of **technologies** comprising renewable energy, demand-side energy efficiency, and some transition technologies;
- An **additionality and baselines** screen focused on ensuring that:
  - a) proposed projects would not occur in the absence of the CDM; and
  - b) that projects will have lower emissions than would occur than in the absence of the CDM.
- **Sustainable development** standards that will ensure projects are evaluated against **specific** environmental, social and economic/technological criteria and deliver a net positive result for sustainable development.

### Project type screen

The aim of the Gold Standard is to help catalyze the market for paradigm shifting sustainable energy projects. As a result, the Standard is restricted to the project types listed below:

#### Renewable energy:

- Photovoltaics
- Solar thermal
- Ecologically sound biomass:
  - Energy crops (Forest Stewardship Council or FSC<sup>i</sup> certified)
  - Forestry (Forest Stewardship Council certified)
  - Agro-processing residues (e.g. sugar cane bagasse, mustard crop residues, rice, coffee husks)
- Wind
- Geothermal
- Small, low impact hydro
- Ecologically sound biogas

#### End use energy efficiency in the following sectors:

- Industrial
- Public
- Commercial
- Residential
- Agricultural
- Transport

### Additionality and baseline issues

The Gold Standard seeks to ascertain the answer to two fundamental questions:

1. Would the project have occurred in the absence of the CDM?
2. Are emissions reduced below the level that would have occurred in the absence of the project?

The Standard also seeks to ensure that valuable ODA is not spent on subsidizing the acquisition of CERs.

Projects, therefore, have to demonstrate that:

1. No similar projects in terms of technology, fuel, size, site and process have been commercially implemented, without carbon finance, in the region in the previous 5 years;
2. The project cannot have been publicly announced prior to its development as a CDM project, unless formally cancelled, with a clear explanation why;
3. Barriers to finance or broader implementation – such as institutional blockages and lack of project finance – are being removed;
4. The baseline represents the most conservative applicable; and
5. ODA is not used to purchase CERs.

### Sustainable Development

The sustainable development aspect of the CDM is heavily promoted by the Gold

Standard using the following techniques:

1. Insistence on best practice environmental impact assessment, triggered by local stakeholders, rather than project developers and host governments;
2. Explicit public participation procedures;

3. A 'Sustainability Matrix' that breaks the subject down into a series of environmental, social and economic/technological categories and simply assesses the project's performance on each. Projects have to show net positive benefit in each of these categories in order to meet the Gold Standard.

## NEXT STEPS AND DEVELOPMENT OF AN INDEPENDENT LABELLING SCHEME

The public release of the final draft of the Gold Standard during UNFCCC COP8 in New Delhi in October 2002 marked the launch of a consultation process with a twofold aim:

- To obtain inputs for the standards to ensure that they maintain the highest levels of environmental integrity while remaining a practical tool for project developers;
- To continue the process of building support for the concept and content of the Gold Standard.

Running parallel to the technical consultation process, WWF will be looking to further explain the concept of the Gold Standard to environmental groups, governments and businesses and continue discussions on the development of an independent project labeling scheme. While WWF will seek to consult with all groups and regions, particular emphasis will be placed on engaging with those who have not been extensively participating in consultations up to date, particularly in Africa and Latin America as well as several business sectors.

WWF intends the Gold Standard to form the centerpiece of an independent labeling scheme for CDM and JI projects, which will give explicit recognition to high quality projects and increase certainty for investors. The release of the Gold Standard is the first concrete public step in this process.

In the meantime, the Gold Standard is designed to be a stand-alone tool that can exist with or without the existence of the labeling scheme. The eventual launch of the labeling scheme - tentatively

called the 'Carbon Label' – is dependent on achieving widespread support and securing funding to finance its operations until it can cover its own costs. WWF has raised the concept of the Carbon Label in a number of workshops and informal discussions, and up to date it has received positive response, with support for the scheme already been expressed by a number of actors, including NGOs and private sector firms in both the industrialized and developing world and several Annex I(B) governments.

One of the most challenging aspects related to the quantification of emission reductions generated by greenhouse gas mitigation projects is the determination of their baselines. The following sections provide some additional details on that process, and how to monitor it.

Establishing the baseline scenario requires knowledge regarding conventional practices in the affected area, the local economic/sociological situation, wider (national, regional or even global) economic trends, which may be affecting the conventional economic outputs of a project, and relevant policy parameters. The analysis must consider historical data, but also plausible future variables. Monitoring guidelines are highly dependent on the technical characteristics of different projects.

While the existing rules set by the official text and the Marrakech accords establish a series of requirements and constraints to the process of baseline setting and monitoring procedures, there is limited guidance available to project developers and validators. In other cases, the requirements are either ambiguous, enabling different interpretations, or inadequate with relation to the desired outcome of ensuring the environmental integrity of the Clean Development Mechanism. The following sections, however, may clarify some technical points regarding baseline analysis – including measuring of project activity – leakage and monitoring.

## ANNEX III

### Additional notes on baseline analysis, leakage and monitoring<sup>1</sup>



One of the most challenging aspects related to the quantification of emission reductions generated by greenhouse gas mitigation projects is the determination of their baselines. The following sections provide some additional details on that process, and how to monitor it.

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#### ADDITIONALITY TESTS

Even before initiating the process of determination of a project baseline, it is necessary to demonstrate that the purported greenhouse gas benefits of the project will be truly additional. Several additionality tests have been devised to assess the eligibility of projects

- Technological tests – where activities have resulted from the introduction of new technologies or through the removal of technological barriers. Evidence would include comparison of current practices and technologies with those to be adopted by the project.
- Institutional or programme tests – where activities go beyond the scope of the programs of the institutions involved in the development of the project. Evidence would include the removal of institutional constraints, or the implementation of measures in excess of current activities and regulatory requirements.
- Financial tests – although in many cases negative cost projects can still be truly additional, demonstration that a project incurred higher costs (or has higher risks) compared with those of comparable baseline activities provides clear indication of its additionality.

Projects may demonstrate additionality using one or more (but not necessarily all) of the above tests. Additionality criteria are difficult to evaluate objectively on a project-by-project basis. As with other screening programs, two types of errors exist: the approval of non-additional projects, and the

<sup>1</sup> This annex has been excerpted from a paper entitled “Baseline analysis for non-forestry and non-land-use projects,” prepared by EcoSecurities Ltd. and SGS for DEFRA (the UK Department for Environment, Food and Rural Affairs), 2002.

exclusion of valid ones. The concept itself is complicated because it requires assessment of hypothetical future scenarios in the absence of the project.

## **PROJECT-SPECIFIC VERSUS GENERIC BASELINES**

In many cases, it can be argued that a detailed project specific study is likely to yield a more accurate prediction of emissions than a broader, regional or sectoral assessment. The attraction of this approach is that analysis is focused on the specific areas and activities relating to the project, and developers may have a better knowledge of local conditions. However, it may also be argued that giving project developers the task of developing baselines introduces the risk that they may choose scenarios that maximize their perceived benefits. Moreover, if baselines are developed by different teams not consulting each other, it may be difficult to ensure consistency between assessments resultant from application of different baselines. Allowing ad-hoc project baselines may lead to inconsistent approaches among similar projects and increase the risk that project baselines would be set strategically to maximize the potential to generate credits.

## **MEASURING PROJECT ACTIVITY**

Different types of project will have their level of activity measured in either volumes of output or of input. Certain types of projects are more easily assessed by measuring the amount of project output rather than project input. This is the case of electricity generation, where it is easier to assess how much electricity is generated by a range of generating sources than to assess the amount of fuels used by each of these generating sources. Using technological parameters related to the generation efficiency of the various technologies used, it is possible to estimate the amounts of fuels used.

In some cases, however, there is no clear output, or it is difficult to quantify or estimate it, and it is necessary to work with amount of emissions generated by the activity itself. This is the case of:

- Fugitive gas collection projects – apart from the component related to the possible utilisation of gases (whose emission reductions need to be quantified in that context), the main impact of these projects relates to the effect of collecting and transforming a gas with more potent greenhouse gas effect into a gas with less potent one. In this case, there is not an easily defined unit of output, and the level of activity is measured in terms of volumes of gas collected.
- Transportation projects based on use of cleaner fuels – because of the difficulties in determination of parameters such as distance travelled, tonnages transported, occupancy and quality of the vehicle fleet, it is often very difficult to quantify the level of activity these projects in terms of their output (transportation units). Whenever possible, it is preferable to determine the amount of cleaner fuels used and assume that an equivalent amount of fuels with a higher carbon content were not used as a consequence of the project.

In any case, the level of project input or output is a parameter easily defined, since it can be estimated by the project developer at the beginning of the project and monitored throughout the project lifetime.

## **CARBON EMISSION FACTORS**

Carbon emission factors are a measurement of the carbon intensity of a fuel or activity, expressed as the amount of CO<sub>2</sub> equivalents that are emitted per unit of project activity. Depending on the type of project activity, the determination of a carbon emission factor or CEF is done in a different way

For projects measured as units of output, their CEF is a function of the type of fuel used, the amount of fuel used for the production of the expected amount of output, the carbon content of the fuel, and the conversion efficiency of the technology used. This is the case of electricity projects. CEFs for projects measured in terms of units of input could be determined in different ways:

- The carbon content of the fuel used, in terms of

tC per ton of fuel, converted into CO<sub>2</sub> equivalents emitted;

- The carbon content of the fuel used, in terms of tC per terajoules of energy generated, and then converted into CO<sub>2</sub> equivalents emitted;
- The global warming potential of a gas, in units of CO<sub>2</sub> equivalent. This is the case of all fugitive gas collection projects.

However, the main challenge in the baseline determination process is to identify the alternative providers of the services or products that would operate in the absence of the project (i.e., in the baseline scenario), so that their carbon emissions factor can be used for the calculation of emissions in the baseline.

## CALCULATING BASELINE EMISSIONS AND EMISSION REDUCTIONS – BASIC APPROACH

Calculation of emissions of the baseline scenario is done according to the following equation:

$$\text{Baseline emissions} = \text{Level of project activity (in units of input or output of the project)} \times \text{CO}_2 \text{ emissions factor (CEF) of the alternative to the project (baseline scenario)}$$

The emissions of the project should also be calculated, according to the same equation, but using the CEF of the project activity:

$$\text{Project emissions} = \text{Level of project activity (in units of input or output of the project)} \times \text{CO}_2 \text{ emissions factor (CEF) of the project's technology, fuel or gas}$$

The amount of emission reductions that the project will generate are calculated as follows:

$$\text{Emission reductions} = \text{Baseline emissions (t CO}_2\text{)} \times \text{Project emissions (t CO}_2\text{)}$$

If the project is expected to be reducing the emissions of multiple gases, these analysis have to be done repeated times, for each of the gases.

After calculating the emissions reductions to be generated by the project, it may be necessary to adjust the results for uncertainties, and to deduct any possible leakage that may be occurring as a consequence of the project.

## LEAKAGE

The term 'leakage' is commonly used to refer to an unanticipated loss of net carbon benefits of a project as a consequence of the implementation of project activities. For this reason, leakage is also referred to as a greenhouse gas externality. Because leakage usually occurs outside of the project's immediate boundaries, it is also referred to as an 'off-site effect'.

While leakage often refers to the negative externalities of a project – i.e. those that result in additional greenhouse gas emissions – it is possible that a project also produces positive greenhouse gas externalities. This has been referred to as 'positive leakage' or 'spillover'. Because of its negative impact on the environment, the former requires a great deal more attention than the latter.

Leakage effects can be divided into two categories, as follows.

**Primary leakage**, also referred to as '*slippage*', occurs when the GHG benefits of a project are entirely or partially negated by increased GHG emissions from similar processes in another area. Primary leakage essentially results in the displacement of the negative activity tackled by the project (the 'baseline driver'), rather than its avoidance. It is, therefore, directly related to the activities or threats that are modelled in the baseline. Primary leakage can be divided into the following sub-types: activity shifting, meaning that the activities, which cause emissions are not permanently avoided, but simply displaced to another area and outsourcing, the purchase or contracting out of the services or commodities that were previously produced or provided on-site.

**Secondary leakage** occurs when a project's outputs create incentives to increase greenhouse gas emissions elsewhere. The most common cause of this is related to *market effects*, which occur when emissions reductions are countered by emissions created by shifts in supply and demand of the products and services affected by the project. For example, a new power plant may lead to an increase in the supply, and hence a reduction in prices, which may lead to an increase in electricity usage in relation to the baseline projection. This type of leakage is most likely to be associated with projects that affect market-based activities in a competitive market scenario, such as grid-connected electricity. It is less likely to occur in projects whose baselines are not related to competitive markets, such as, for instance, fuel switching retrofit projects.

Another source of unexpected carbon emissions occurs in the event of incomplete or inaccurate project or baseline determinations (e.g., emissions from transportation). This should be seen more as a fault of the project-baseline calculations rather than an issue of leakage.

It has been proposed that leakage needs to be incorporated into the carbon accounting of the project, and that the leakage estimated for a project should simply be deducted from the project's claims. An alternative approach has been proposed, whereby 'leakage coefficients' are defined based on the perceived risk of leakage of a project, and is used to reduce the project's claims accordingly. While these are valid ideas, the main problem remains how to identify and quantify leakage, so that it can be deducted or converted into coefficients to adjust a project's claims.

Identification and quantification of leakage remains one of the most challenging technical issues related to the development of greenhouse gas mitigation projects. This has been the subject of many studies, and it appears to be equally problematic for both land use and energy projects<sup>2</sup>). The main

challenge of the analysis is to identify whether it is indeed occurring. Even if analysis of the project were extended beyond the immediate project boundaries, it is often impossible to detect whether shifts in behaviour, supply and demand of electricity, for instance, have occurred as a consequence of the project or as independent effects.

Experience to date has been limited to a few projects, and hindered by the lack of data, and short timeframes since project inception. Qualitative methods may need to be further developed, together with efforts to generate more accurate data .

Perhaps the most effective way of dealing with leakage is to try to prevent it through appropriate project design. This could be effective in the case of sources of primary leakage, where well-structured project designs may be sufficient to prevent leakage from occurring, and avoiding the need for more complicated quantification analyses. With relation to market effects, econometric methods may prove useful, but is likely that their application will remain limited due to the lack of data and the complexity of the analyses required. A more pragmatic approach may be to determine threshold values below which market effects can be considered negligible.

## MONITORING

Article 12 of the Kyoto Protocol states that CDM emission reductions must be real, long-term and measurable. Measurable relates to the demonstration that emissions have been avoided and this is proved through the development and implementation of a monitoring plan that provides objective (for example, documentary) evidence that emissions have been avoided. The monitoring plan must also demonstrate the emission reductions in a transparent, complete, consistent, comparable and accurate manner.

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<sup>2</sup> See, for instance, Chomitz, K., 1998, *Baselines for Greenhouse Gas Reductions: Problems, precedents, solutions*. Development Research Group. World Bank and Schlamadinger, B. and G. Marland, 2000 *Land Use and Global Climate Change – Forests, Land Management and the Kyoto Protocol*, Pew Center on Global Climate Change

Monitoring may be better understood by placing it within the context of a project cycle. Once the project has been implemented, the project developers may undertake activities that can be described as monitoring, evaluation, reporting and verification. This description also helps to separate the activities of monitoring and verification, which are often linked although they are discrete activities carried out by different entities.

Monitoring involves continuous or periodic measurement of specific parameters. Evaluation involves the calculation of greenhouse gas emissions using a defined protocol. Reporting is the documentation of this process, explaining how the information was collected, what quality control procedures were applied and how greenhouse gas emissions were calculated. The project participant carries out all these steps. Verification is carried out by an independent entity that checks the data collection procedures and calculations and if possi-

ble, corroborates the findings with information from an alternative source.

Depending on the type of project technology and the monitoring methodology applied, a significant proportion of the information required under the monitoring rules may be additional to monitoring data that would be gathered if the project were not part of the CDM. This may be particularly true in locations where there are fewer reporting requirements in place. The verification of the emission reductions will also place a financial burden on the project developer. Since the intensity of the verification process is determined by the risks associated with the monitoring and evaluation procedures, a good monitoring plan will result in easier and cheaper verification of emissions. A poor monitoring plan may result in higher costs, fewer emissions or, in the worst case, an inability to adequately demonstrate that emissions have been avoided.



## ANNEX IV: Information Sources



### Where can I get more information?<sup>1</sup>

There is a wealth of information available on the CDM. Finding the right information is not always easy. A cross-section of websites and information sources is provided below, with a particular preference for those that contain good links to other sources. This list is by no means exhaustive, and its inclusion does not necessarily imply endorsement by the authors.

### Where do I find out about official meetings and texts?

#### United Nations Framework Convention on Climate Change (UNFCCC)

<http://www.unfccc.de/>

The UNFCCC keeps a complete list of documents relating to the convention on its website including the Kyoto Protocol as well as access to Country Reports. It includes all reports on COPs. Access the documentation by clicking the “Resources” button.

#### UNFCCC – CDM site

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

For information on the CDM, meetings of the Executive Board and the project activity cycle.

#### National Communications Support Programme

<http://www.undp.org/gef/cc/>

The National Communications Support Programme works with more than 130 participating countries in eight subregions: Africa, Arab States, Europe and the CIS, Asia, the Pacific, the Caribbean, and Central and South America. It was launched by the UNDP and the UNEP, in co-operation with the Secretariat of the UNFCCC. The Programme provides technical support to enhance the capacity of non-Annex I parties to prepare their initial

National Communications. It also aims to promote the quality, comprehensiveness, and timeliness of initial National Communications.

#### IPCC Special Report on Land Use, Land Use Change and Forestry (LULUCF)

<http://www.ipcc.ch/>

All IPCC Special Reports can be downloaded as well as other publications and information on the work of the IPCC.

### Where would I find out more about the climate policy process?

#### International Institute for Sustainable Development (IISD), Canada

<http://iisd1.iisd.ca/climatechange.htm>

Publish an electronic newsletter on all important international meetings on climate change (including COPs)

#### Pew Centre for Climate Change

<http://www.pewclimate.org/>

Publishes articles on climate change related issues aimed at US corporations and public.

#### Earth Negotiations Bulletin (ENB)

<http://www.iisd.ca/linkages/climate/>

Provides daily coverage on the COP meetings, including an analysis of the negotiations and reports of side events.

#### Climate Policy

<http://www.climatepolicy.com>

A research journal looking at national and international policy response to climate change, including forestry and the CDM.

<sup>1</sup> Adapted from *Laying the Foundations for Clean Development: Preparing the Land Use Sector, A quick guide to the Clean Development Mechanism*, Louise Aukland and Pedro Moura Costa, from EcoSecurities; Stephen Bass, Saleemul Huq, and Natasha Landell-Mills, from IIED; Richard Tipper and Rebecca Carr, from The Edinburgh Centre for Carbon Management. <http://www.cdmcapacity.org/manual.html>

**Centre for Clean Air Policy (CCAP)**

<http://www.ccap.org/>

Provides up to date news, papers and discussions on domestic and international climate change policies, including the role of land use in the CDM.

**Resources for the Future (RFF)**

<http://www.rff.org/>

Draws on an extensive 'think tank' of expert researchers, focusing primarily on the economic and social sciences in natural resource issues. The site has an extensive on-line library with separate sections on forestry, land use and climate.

**How can I find out about the science and research surrounding the CDM?****IPCC Data Distribution Centre (DDC)**

<http://ipcc-ddc.cru.uea.ac.uk/>

Established to facilitate the timely distribution of a consistent set of up-to-date scenarios of changes in climate and related environmental and socio-economic factors for use in climate impacts assessments. The intention is that these new assessments can feed into the review process of the IPCC, in particular to the Third Assessment Report (TAR).

**IPCC National Greenhouse Gas Inventories Programme**

<http://www.ipcc-nggip.iges.or.jp/>

**Pacific Institute for Studies in Development**

<http://www.pacinst.org/>

An independent, non-profit centre created in 1987 to conduct research and policy analysis in environment, sustainable development, and international security, with a focus on long-term solutions that require an interdisciplinary perspective.

**Bangladesh Centre for Advanced Studies (BCAS), Bangladesh**

<http://www.bcas.net>

Has a number of publications mainly on vulnerability and impacts of climate change in Bangladesh

**Center for International Forestry Research (CIFOR)**

<http://www.cifor.cgiar.org/>

Covers the sustainable management and use of forests in developing countries, particularly the tropics. This includes work on forest carbon, sustainable livelihoods and biodiversity.

**The FAO Climate change and forestry mailing list**

<http://www.fao.org/forestry/climate>

Regular e-mail updates on all issues relating to climate change and forestry, including publications, policy news, projects, and interesting websites.

**International Institute for Environment and Development (IIED)**

<http://www.iied.org/>

An independent, non-profit organization promoting sustainable patterns of world development through collaborative research, policy studies, networking and knowledge dissemination. The site includes information on sustainable development criteria and strategies, forestry, land use and climate change, with a large list of publications that can be downloaded.

**Forest Trends**

<http://www.forest-trends.org/>

An organisation that aims to promote market based approaches to forest conservation. Their website has some good links to other information sources on forestry issues, including a section on forest carbon under 'forest services'.

**Climate Ark (climate change and renewable energy portal)** <http://www.climateark.org/>

An internet portal dedicated to promoting public policy that addresses global climate change through reductions in carbon dioxide and other emissions, renewable energy, energy conservation and ending deforestation. Climate Ark provides a useful search engine on climate change-related issues, and links to current and past news.

## **Where can I find out more about pilot carbon projects?**

### **Activities Implemented Jointly (AIJ)**

<http://unfccc.int/program/aij/aijproj.html>

The UNFCCC's official list of AIJ projects accepted by the designated national authorities.

### **ICRAF (International Centre for Research in Agroforestry)**

<http://www.icraf.cgiar.org>

ICRAF, based in Nairobi, Kenya, maintains information on agroforestry activities including some pilot CDM projects.

### **Face Foundation**

<http://www.facefoundation.nl/>

FACE (Forests Absorbing Carbon dioxide Emissions) is a non-profit organisation that has been funding the planting and maintenance of forests since 1990.

### **Ilha do Bananal**

<http://www.ecologica.org.br>

A pilot carbon offset and conservation project in Brazil.

### **SouthSouthNorth**

<http://www.southsouthnorth.org/>

The mission of the SouthSouthNorth Project, or SSN Project, is to design, develop and implement Clean Development Mechanism projects under the Kyoto Protocol

### **Plan Vivo**

<http://www.planvivo.org/>

The site holds an online manual for the Plan Vivo Systems for planning, managing and monitoring the supply of carbon services from small farmers, particularly in developing countries, in ways that enhance rural livelihoods.

### **The Nature Conservancy (TNC)**

<http://nature.org/aboutus/projects/climate/>

TNC is a conservation organisation in the USA, with partner organisations in Asia-Pacific, Canada,

the Caribbean and Latin America, working to preserve plants animals and natural communities, mainly through land purchases. It is involved in climate change projects in several counties including Rio Bravo in Belize and Noel Kempff in Bolivia.

### **The Center for Environmental Leadership in Business, at Conservation International**

<http://www.celb.org>

Builds partnerships between the private sector and the environmental community, including projects to offset emissions through forest conservation and reforestation.

### **The World Land Trust**

<http://www.worldlandtrust.org>

The World Land Trust is a conservation charity that purchases land in developing countries to conserve biodiversity and threatened ecosystems. It is developing policy advice for the DFID on CDM projects.

### **Tanzania International Small Group and Tree-planting Program (TIST)**

<http://www.tist.org>  
Formed in 1999, this is a community-driven programme to sequester carbon and create carbon storage in a way that is consistent with the best practices of sustainable development. It is developing within the context of CDM principles.

### **World Resources Institute (WRI)**

<http://www.wri.org>

Information on a range of issues of importance to the CDM and land use sectors, including some pilot CDM projects. Plenty of papers and publications are available.

### **United States Initiative on Joint Implementation (USIJI)**

<http://www.gcario.org/usiji/>

USIJI is a pilot programme encouraging projects that mitigate greenhouse gas emissions and promote sustainable development. The site provides useful information on project development, ongoing projects, links and related documents on climate change.

### **Moving Towards Emissions Neutral Development (MEND)**

**<http://www.cdmcapacity.com/MEND>**

A DFID funded project to investigate how CDM projects can be implemented to optimise sustainable development targets. The focus countries were Ghana, Bangladesh, Columbia and Sri Lanka.

### **Carbon Monitor**

A newsletter published by Environmental Intermediaries & Trading Group Limited. It covers many issues on commercialising the carbon offsets created by Kyoto and provides regular updates with commentary. You can sign up for the newsletter free by emailing Richard Hayes. [rhayes@nznet.gen.nz](mailto:rhayes@nznet.gen.nz)

### **Where can I go for institutional support?**

#### **U.S. Country Studies Program**

**<http://www.gcrio.org/CSP/webpage.html>**

Through the U.S. Country Studies Program, the U.S. Government has been providing technical and financial support to 56 developing countries and countries with economies in transition to assist them in conducting climate change studies. The studies have enabled these countries to develop inventories of their anthropogenic emissions of greenhouse gases, assess their vulnerabilities to climate change, and evaluate response strategies for mitigating and adapting to climate change. The program was announced by the President prior to the United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit, in Rio de Janeiro, Brazil, in 1992.

#### **The Global Environment Facility (GEF)**

**[www.gefweb.org](http://www.gefweb.org)**

The GEF is funded by the World Bank and works in conjunction with national governments, NGOs and scientific organisations to provide grants for projects on biodiversity, climate change, international waters and ozone. Projects funded include carbon sink protection, enhancement and restoration projects that improve carbon storage in biomass and soils.

### **United Nations Development Program (UNDP)**

**[www.undp.org/seed/eap/html/climate.htm](http://www.undp.org/seed/eap/html/climate.htm)**

UNDP is committed to supporting developing countries in responding to climate change concerns as part of their overall sustainable development efforts. UNDP works with developing countries to create integrated solutions to social, economic and environmental problems, with a primary focus on improving the lives of those living in extreme poverty. UNDP is actively engaged in learning-by-doing projects in both climate change mitigation and adaptation efforts. Projects include the engagement of the private sector in CDM in Brazil and South Africa, field testing of the manual and pilot CDM projects in the Latin America region, and a water governance and climate change adaptation pilot project. This website will be periodically updated in the future to reflect ongoing and future activities.

#### **The Joint Implementation Network (JIN),**

the Netherlands **<http://www.northsea.nl/jiq>** was created in 1994 to establish an international network for research and information exchange about JI, including CDM mechanisms and projects. It publishes the Joint Implementation Quarterly which reviews current developments and project progress.

### **How can I find out more about selling credits or getting financial assistance?**

#### **The Prototype Carbon Fund (PCF)**

**<http://www.prototypecarbonfund.org/>**

The World Bank's PCF aims to demonstrate how project-based emissions transactions can mitigate climate change. The site contains news items, discussion arenas, and key documents on projects that have applied to the PCF, including baseline studies, monitoring and verification protocols and purchase agreements.

#### **CERUPT**

**<http://www.senter.nl/asp/page.asp?id=ioo1236&alias=erupt>**

Funded by the Dutch government, the CERUPT programme purchases carbon credits from CDM projects. The programme is run by Senter, the agency responsible for the execution of grant schemes on behalf of a range of Dutch ministries. To date, CERUPT has not accepted credits from land use CDM projects.

#### **Future Forests**

**<http://www.futureforests.com>**

A UK company offering voluntary carbon offsets to companies and individuals. It purchases carbon credits from forestry projects in the UK and in developing countries.

#### **PrimaKlima**

**<http://www.primaklima-weltweit.de>**

A German organization which finances and implements afforestation, forest management and forest conservation projects in cooperation with nationally and internationally recognised organizations in order to mitigate global climate change. It is also carrying out research on behalf of the EC on guidelines for JI/CDM projects.

**EcoSecurities Ltd - [http://www.ecosecurities.com/100services/13ofinancial\\_services.html](http://www.ecosecurities.com/100services/13ofinancial_services.html)**

An environmental finance services advisory firm that provides technical, policy and financial advice on climate change issues, with specialisations in land use and the CDM.

#### **Where can I go for help and advice?**

**Environment and Development Action in the Third World (ENDA) <http://www.enda.sn/>**

Although primarily with a focus on energy, ENDA has an active climate change group and provides an insight into the opportunities for the CDM, especially in Africa.

**Tata Energy Research Institute (TERI), India <http://www.teriin.org>**

Has a large number of items on climate change issues, including CDM in India. Also publishes a regular newsletter.

**The Edinburgh Centre for Carbon Management (ECCM) <http://www.eccm.uk.com>**

ECCM provides policy and technical advice to government and industry in the areas of forestry and land use. ECCM also develops carbon sequestration projects in developing countries.

#### **EcoSecurities Ltd**

**<http://www.ecosecurities.com>**

The website has more than 50 publications covering a range of issues specific to the CDM and land use sector including leakage, permanence, baselines, monitoring and crediting.

#### **Winrock International**

**<http://www.winrock.org/>**

Employs a group of experts in quantification and monitoring of carbon in large projects, as well as technical support services for agriculture, forestry and natural resources management.

**Oak Ridge National Laboratory (ORNL) Carbon Dioxide Information Analysis Center (CDIAC)**

**<http://cdiac.esd.ornl.gov>**

The primary global-change data and information analysis centre of the US Department of Energy (DOE). It has large data holdings relevant to many areas of climate change.

#### **Trexler and Associates, Inc. (TAA)**

**[www.climateservices.com](http://www.climateservices.com)**

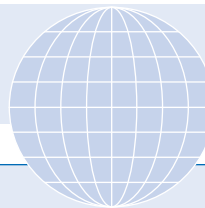
Trexler provides climate change risk management services to large companies and develops mitigation projects including forestry offset projects.

#### **Société Generale de Surveillance (SGS)**

**<http://www.sgs.nl/agro/pages/carbonoffset.asp>**

SGS already has experience with the certification of a number of land use projects and executive summaries are available on the website.

## ANNEX V: Glossary



TERM	DEFINITION
<b>Activities Implemented Jointly (AIJ)</b>	A pilot programme established in 1992, which allowed private entities in one country to reduce, sequester, or avoid emissions through a project in a different country. During the AIJ Pilot Phase, projects were conducted with the objective of establishing protocols and experiences, but without allowing carbon credits to be transferred between developed and developing countries.
<b>Additionality</b>	According to the Articles on Joint Implementation and the Clean Development Mechanism of the Kyoto Protocol, emissions reduction units will be awarded to project-based activities only upon receiving the proof that the projects achieve reductions that are “additional to those that otherwise would occur” without project implementation.
<b>Annex I Party</b>	A country listed in Annex I of the UNFCCC. The parties have various responsibilities under the UNFCCC, including a non-binding commitment to reduce greenhouse gas emissions by the year 2000. Legally binding emissions targets for Annex I Parties amount to an aggregate reduction of at least 5 per cent from 1990 levels by 2008-2012.
<b>Annex B Party</b>	These are the emissions-capped industrialized countries and economies in transition (Eastern Europe and the former Soviet Union) listed in Annex B of the Kyoto Protocol.
<b>Baseline</b>	According to Marrakech Accords (2001), it is the scenario that reasonably represents anthropogenic emissions by sources of greenhouse gases that would occur in the absence of proposed project activity.
<b>Baseline Methodology</b>	A greenhouse gas emissions forecasting matrix (or a system of equations) permitting project developers to obtain an estimation of anthropogenic emissions under the business-as-usual scenario.
<b>Carbon Sequestration</b>	The capture and storage of CO <sub>2</sub> and other greenhouse gases in a manner preventing its re-entry into the atmosphere for a specified period of time, where the carbon storage area is commonly called a ‘carbon sink’. Carbon sequestration projects commonly include activities in forestry, soil conservation and underground injection of CO <sub>2</sub> .
<b>Certification</b>	The process of verifying achieved greenhouse gas emissions reductions in different phases of CDM or JI project implementation. Certification is completed by an independently accredited authority. It is required to create a formal title on emissions reduction units generated in the course of project implementation: once certification is completed, the emission reduction becomes a separate tradable commodity.

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<b>Certified Emissions Reductions (CER)</b>	The formal commodity transferred to project-developing entities in Annex I or/and Annex B states for the amount of emissions reductions achieved in the process of CDM project implementation, provided they meet certain eligibility criteria. CERs generated under the CDM will be recognized only after emissions reductions are proven additional (see the definition of <i>additionality</i> above), the project specifics meet all the requirements of the host-country, and the CDM adaptation levy has been paid.
<b>Clean Development Mechanism (CDM)</b>	Article 12 of the Kyoto Protocol allows Annex 1 Parties to implement projects that reduce emissions in non-Annex 1 Parties in return for certified emissions reductions (CERs) and to assist the host Parties in achieving sustainable development and contributing to the ultimate objective of the UNFCCC.
<b>Climate Change</b>	Change in climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural variability observed over comparable time periods. (IPCC)
<b>Climate Variability</b>	Climate variability refers to variation in the mean state and other statistics (such as standard deviations, the occurrence of extremes, etc.) of the climate on all temporal and spatial scales beyond that of individual weather events. Variability may be due to natural internal processes within the climate system (internal variability) or to variations in natural or anthropogenic external forcing (external variability). (IPCC)
<b>Cogeneration</b>	Utilization of waste heat from electricity generation – such as exhaust from gas turbines – for industrial purposes or district heating or further electrical generation.
<b>Commitment Period</b>	The five-year Kyoto Protocol Commitment Period running from the calendar year 2008 to calendar year 2012 inclusive. During this period all Annex B jurisdictions have to meet their greenhouse gas emissions reduction obligations for 2008-2020 as defined by the Kyoto Protocol.
<b>Conference of Parties (COP)</b>	The Conference of Parties (COP) to the UNFCCC consists of more than 170 nations that ratified or acceded to the Framework Convention on Climate Change. The COP is charged with promoting, developing and reviewing the implementation of the convention.
<b>Counter-party Credit Risk</b>	The risk of loss from an unfulfilled obligation of payment for emissions reduction credits delivery, or the risk of non-delivery of emissions reduction credits.
<b>Crediting Period</b>	The temporal framework within which newly generated greenhouse gas emissions reduction credits can be recognized by the COP and acquired by a project financing

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	party under JI and/or CDM. Within the Kyoto Protocol, Annex B governments cannot receive credits before the first commitment period (2008-12) towards their emission obligation, except under the CDM. In the CDM the crediting has been permitted since 2000.
<b>Crediting Lifetime</b>	A period over which a specific CDM project can earn emissions reduction credits. Under the Marrakech Accords, crediting lifetime can be either 10 years, or 21 years the latter through seven-year renewal periods.
<b>Demand-side Management</b>	Utility programs, or energy-consumer programs designed to control energy consumption on the customers' side. Such programs may include (among others) energy conservation, a variety of increased energy efficiency measures, load management, and load building.
<b>Designated National Authority</b>	A body appointed by a CDM host-country to oversee CDM implementation within this jurisdiction
<b>Designated Operational Entity (DOE)</b>	According to the UNFCCC, the DOE is either a domestic legal entity or an international organization accredited and designated, on a provisional basis until confirmed by the COP/MOP, by the CDM Executive Board (EB). Every DOE has two functions: <ol style="list-style-type: none"> <li>1. To validate and subsequently request registration of a proposed CDM project activity; and</li> <li>2. To verify emission reduction of a registered CDM project, to certify it as appropriate and to requests the CDM Board to issue CERs.</li> </ol>
<b>Emissions Cap</b>	A ceiling on emissions allowed for each particular country (or a legal entity within a given jurisdictions) within a designated time frame. The term frequently refers to national emissions allowances.
<b>Emissions Inventory</b>	A database or an archive of historical emissions within a given jurisdiction
<b>Emissions Reduction Unit (ERU)</b>	Under the Kyoto Protocol, a specified amount of greenhouse gas emissions reductions (usually one ton, as measured in carbon dioxide equivalents) achieved through a Joint Implementation project.
<b>Emissions Reduction Purchase Agreement (ERPA)</b>	A contract guiding the transfer of emissions reduction credits (CERs or ERUs) from one party to another in CDM or JI regimes.
<b>Environmental Impact Assessment</b>	The assessment of the environmental impacts likely to arise from a specific action (i.e. legislation, a policy, a program or a JI/CDM project)

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<b>Emissions Trading</b>	Article 17 of the Kyoto Protocol. It provides Annex 1 Parties to trade emissions allowances with other Annex 1 Parties.
<b>(Financial) Equity</b>	A financial term denoting an ownership interest in a company or project asset.
<b>First Commitments Period</b>	2008-2012, as defined by the Kyoto Protocol (see the definition of 'Commitment Period')
<b>Forward Contract</b>	A market transaction in which a seller agrees to deliver a specific commodity to a buyer at some point in the future. Forward contracts are privately negotiated and are not standardized. Further, the two parties must bear each other's credit risks. This form of a contract usually allows a buyer to initially avoid almost all capital outflow
<b>Futures Contract</b>	An agreement to have the option to buy or sell a specific amount of a commodity or financial instrument at a certain time in the future for a particular (specified) price. The price is agreed upon between the buyer and seller on a commodity exchange via a standardized contract defined by the exchange. Futures contracts typically have a range of delivery dates and are marked to market daily. At this stage, a greenhouse gas emissions futures market does not exist and most carbon transactions represent forward contracts.
<b>Global Environment Facility (GEF)</b>	An international organization established in 1991, which helps developing countries and economies in transition to fund environmental projects/programs. GEF grants support activities in biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.
<b>Global Warming Potential (GWP)</b>	Global warming potential is an index defined as the cumulative radiative forcing between the present and some chosen time horizon caused by a unit mass of gas emitted now, expressed relative to a reference gas such as carbon dioxide. Hence, CO <sub>2</sub> been designated a GWP of 1, methane (CH <sub>4</sub> ) has a GWP of 23, etc.
<b>Greenhouse Gases</b>	The six gases regulated under the Kyoto Protocol as the main contributors to the greenhouse effect. The main and naturally-occurring gases are: 1. Carbon dioxide (CO <sub>2</sub> ); 2. Methane (CH <sub>4</sub> ); and 3. Nitrous Oxide (N <sub>2</sub> O). In addition to the three gases listed above, there are additional chemically engineered greenhouse gases, which occur on a very limited basis in nature: 1. Hydrofluorocarbons (HFCs); 2. Perfluorocarbons (PGCs); and 3. Sulphur Hexofluoride (SF <sub>6</sub> ).
<b>Host Country</b>	The country where a given emissions reduction project is located
<b>Hot Air</b>	Reductions of greenhouse gas emissions that occurred due to economic collapse or declined production in the economies of transition (principally Russia and Ukraine) for reasons not directly related to emissions reduction efforts.

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<b>Independent Entity</b>	An independent entity is a body, which validates the baseline setting approach and calculations for a JI project. Independent entities are accredited by the JI Supervisory Committee.
<b>Internal Rate of Return (IRR)</b>	The discount rate that results in a <i>net present value</i> of zero ( $NPV = 0$ ) for a series of future cash flows (see the definition of the NPV below). IRR is the discount rate below which an investment results in a positive NPV (and should be made) and above which an investment results in a negative NPV (and should be avoided). It's the <i>break-even</i> discount rate, the rate at which the value of cash outflows equals the value of cash inflows. In that sense the IRR represents an investment cut-off rate because it permits project investors to avoid investments/projects where the IRR is less than the capital cost (or less than a specified minimum desired rate of return).
<b>Joint Implementation</b>	Defined in Article 6 of the Kyoto Protocol. Joint Implementation allows Annex 1 Parties to implement projects that reduce emissions, or remove carbon from the air, in other Annex 1 Parties, in return for emission reduction units.
<b>Kyoto Protocol</b>	The Kyoto Protocol was created at COP 3, Kyoto, 1997. It specifies the level of greenhouse gas emission reductions, the deadlines and the methodologies that signatory countries are to adhere to. Legally-binding emissions obligations for Annex B parties range from an 8 per cent emissions reduction (such as for various European nations) to a 10 per cent increase in emissions (i.e. Iceland) relative to 1990 levels of emissions. The Protocol is subject to ratification, acceptance, approval or accession by Parties to the Convention. It shall enter into force on the ninetieth day after the date on which not less than 55 Parties to the Convention, incorporating Annex I Parties which accounted in total for at least 55 per cent of the total carbon dioxide emissions for 1990 from that group, have deposited their instruments of ratification, acceptance, approval or accession.
<b>Leakage (GHG Emissions Leakage)</b>	For land use change and forestry activities, leakage is the unexpected loss of net carbon sequestered. For CDM/JI projects, leakage result from a number of unforeseen circumstances, including improperly defined baseline, incorrectly described project lifetime and/or project boundaries and/or inappropriate project design.
<b>Learning By Doing</b>	A capacity development strategy which entails the development of knowledge and experience about a particular process by actively engaging in it.
<b>Legal Entity Trading</b>	Kyoto Protocol Annex B parties may authorize companies to take part in international emissions trading if such trading complies with international emissions trading rules. These rules stipulate that trading may not happen if the authorizing country fails to meet certain eligibility requirements.

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<b>Millennium Declaration</b>	The UN General Assembly Declaration adopted in September 2000 a plan to support global development objectives in this century. These goals are commonly known as the Millenium Declaration Goals (MDGs).
<b>Millennium Development Goals</b>	A set of eight development goals with 18 specific targets adopted by the 2000 Millennium Declaration committing to the eradication of extreme poverty and hunger, achievement of universal primary education, promotion of gender equality and empowerment of women, reduction of child mortality, improvement of maternal health, combating of HIV/AIDS, malaria and other diseases, ensuring environmental sustainability, and promotion of global partnerships for development.
<b>Monitoring</b>	An exercise in measuring, recording and reporting the key emissions data during project implementation (both JI and CDM) to oversee the reduction of greenhouse gas emissions.
<b>Multilateral CDM</b>	A multilateral CDM project involves the investor country, a host country and third party provision of a share of implementation financing.
<b>Net Present Value</b>	The value of future cash flows discounted back to the present by the lowest desirable rate of return – often the project's cost of capital.
<b>Non-Annex 1 Party</b>	Countries not included in Annex I of the UNFCCC. Non-Annex I countries do not have binding greenhouse gas emission reduction targets under the terms of the Kyoto Protocol.
<b>Operational Entities</b>	An entity charged with validation and registration of a CDM project activity. All operational entities are accredited by the CDM Executive Board, which makes recommendations to the COP/MOP for the designation of operational entities.
<b>Option Payment</b>	The amount paid for the right to buy or sell a given commodity at an agreed (strike) price at a predetermined date (expiration). If the option is not exercised by the expiration date, the contract becomes void and the fee paid for the contract (premium) is forfeited.
<b>Project Boundary</b>	According to the Marrakech Accords (2001), a CDM project boundary encompasses all anthropogenic emissions by sources of greenhouse gases under the control of project participants, whereas such emissions are significant and directly attributable to the CDM project activity. Under this designation, a project boundary represents the border surrounding the zones/areas impacted by the reduction of such anthropogenic greenhouse gas emissions under the control of a CDM project.

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<b>Project Design Document (PDD)</b>	A document required by the CDM Executive Board for project approval (i.e., registration and issuance of project-specific CERs). PDDs can be prepared in a simplified and highly-standardized format for small-scale CDM projects (see the small-scale CDM definition below) and in the non-standardized expanded format for other CDMs.
<b>Project Idea Note (PIN)</b>	A draft document outlining all project realization steps including responsible parties, temporal framework of project implementation, budgetary deviations, specific asset management requirements, etc. Generally used for marketing a project investment
<b>Removal Units (RMUs)</b>	The new technical term representing sink credits generated in Annex I countries, which can be traded through the emissions trading and JI mechanisms.
<b>Sink</b>	A natural reservoir that can absorb or 'sequester' carbon dioxide from the atmosphere. Forests represent the most common form of sink. Other natural reservoirs include soils, peat, permafrost, ocean water and carbonate deposits in the deep ocean.
<b>Small-Scale Projects</b>	CDM projects with the following characteristics: <ol style="list-style-type: none"> <li>1. Renewable energy activities with the maximum output capacity of 15 MW (or an appropriate equivalent);</li> <li>2. Energy efficiency improvement activities that reduce energy consumption on both the supply and demand side by an equivalent of 15 GWh/year (gigawatthours per year); or</li> <li>3. Other activities that both reduce anthropogenic emissions by sources and directly emit less than 15 KT (kilotons) of CO<sub>2</sub>-equivalent annually.</li> </ol>
<b>Spot market</b>	A market in which goods, services, or financial assets are traded for immediate delivery. This differs from a futures market, where the delivery will be made at a future date.
<b>Sustainable Development</b>	Development that meets the present needs of the people without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development, 1987).
<b>Technology Transfer</b>	A wide range of arrangements by which energy-efficient and/or low-emissions technologies developed by the industrialized economies are made available to less industrialized states. Technology transfer may occur through technology sales by private entities, through government programmes (by the means of both subsidies and grants), non-profit arrangements, or through the combination of any of the above.

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<b>Tradable Emissions Permit</b>	An authorization issued by the national government that allows an emitter of greenhouse gases (or of any other conventional pollutant) to discharge a specified number of emission tons. The permit expires once the stipulated number of tons has been emitted. The total number of permits in any tradable market equals the desired level of emissions sought by the regulating authorities.
<b>Transaction Costs</b>	An <i>economic definition</i> of transaction costs describes them as expenses spent on measuring what is being exchanged and enforcing agreements associated with a particular exchange – in our case, a CER purchase. In legal terms, transaction costs comprise the expenses incurred buying or selling emissions reduction credits. These may include brokers' commissions, project verification costs and any form of project negotiation expenses, including legal fees.
<b>Unilateral CDM</b>	Projects developed by indigenous parties within an developing economy without project investment from Annex I Party(ies). The decision about allowing unilateral CDM was made at COP-7, after which developing countries are permitted to market the resulting CERs to potential buyers.
<b>Validation</b>	An assessment of the design of a CDM project which is required for all CDM projects, carried out by an operating entity. It represents an analysis of a Project design document to assess: project design, baseline study and monitoring and verification plans.
<b>Verification</b>	CDM project verification provides independent assurance that actual or expected emission reductions have been/will be achieved from a stipulated emission reduction project during a specified period. In most cases, verification focuses on the monitoring phase of CDM projects.