Report 2005-046

CDM Methodology Status Report 2005

FINAL REPORT

ECON-Report No. 2005-046, Project no. 45950
RSF/cjo 31 May 2005
ISSN: 0803-5113,

CDM Methodology Status Report 2005

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Commissioned by World Bank Carbon Finance Business

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Table of Contents

Abbreviations

ACM	Approved Consolidated Methodology
AM	Approved Methodology
AR WG	Afforestation/Reforestation Working Group (of the EB)
BAU	Business As Usual
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CERUPT	CER Emissions Reductions Procurement Tender
CH_4	Methane
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
COP	Conference of the Parties (to the UNFCCC)
COP/MOP	Conference of the Parties serving as a Meeting of the Parties to the Kyoto Protocol
DNA	Designated National Authority
EB	Executive Board
ER	Emissions Reductions
GHG	Greenhouse Gas
HFC	Halo-fluorocarbons
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
LFG	Land fill gas
M&P	Modalities & Procedures
Meth Panel	Baseline and Monitoring Methodology Panel
N_2O	Nitrous Oxide
NM	New Methodology
NMB	New Methodology Baseline
NMM	New Methodology Monitoring
NPV	Net Present Value
PDD	Project Design Document
SSC	Small Scale CDM
SSC WG	Small Scale CDM Working Group (of the EB)
UNFCCC	United Nations Framework Convention on Climate Change

Executive Summary

Abstract

This report provides an analysis of the Clean Development Mechanism (CDM) baseline and monitoring methodology approval process, as well as initial experience with project registration. Over the last two years, the Executive Board (EB) has examined 82 methodologies; of that a total of 36 methodologies have been approved and 38 rejected. The remainder of submitted methodologies either remain under consideration or have been withdrawn. Although the EB encourages resubmission of rejected methodologies, to date very few project participants have opted to take this route. The World Bank Carbon Finance Business has had a higher success rate than the average. The process of approving a methodology typically takes 9 to 10 months, while rejection is typically decided within 7 months. Methodologies are heavily weighted toward renewable electricity and methane capture in waste management, with almost no coverage of industrial sector energy use, energy efficiency, and transport. Almost all only apply to existing facilities and capacity. The EB is implementing means to improve the approval process, including moving toward more consolidated methodologies, but all EB functions are severely constrained by a lack of resources.

Background

The World Bank Carbon Finance Business (WB CFB) produces knowledge and information for its various government and private sector participants on CDM projects and regulatory policies. A special focus is on CDM methodologies and procedures. The CFB produced a first methodology status report in May 2004 and an update to that report in November 2004. This report is the most recent update on CDM methodologies and projects.

The objective of this report is to provide an analysis of the CDM methodology approval process to date, as well as early experience with project registration. Some of the key issues addressed are as follows:

- The extent to which methodologies approved so far cover key sectors with high CDM potential, and how broad their scope is within those sectors
- Whether methodologies that are not initially approved are being revised and resubmitted, and how successful they are in that process
- The length of time it takes to approve or reject a methodology

- The success rate of World Bank Carbon Finance Business in producing "approved" methodologies
- The steps being taken to improve the speed and quality of the methodology approval process
- The rate at which projects submitted with approved methodologies are moving forward to validation and registration, and the time required for these steps
- Key lessons from the first few requests for review of projects submitted for registration

Principal findings[1]

A significant number of methodologies have been approved, but their sectoral coverage and applicability is often limited

Over the last two years, a total of 36 baseline and monitoring methodologies have been approved. These comprise 26 methodologies approved as "A" cases on their own and another 10 that have been or are being consolidated into approved methodologies. This means that 43 per cent of the 83 methodologies considered by the Executive Board (EB) to date have eventually been approved. A total of 38 methodologies have been rejected ("C" cases), and six are currently rated as "B" cases for reconsideration, while two were withdrawn.

The methodologies are heavily weighted toward renewable electricity and methane capture in waste management. There are almost no widely applicable industrial sector methodologies, while the first chemical sector methodology was recently approved. Energy efficiency methodologies are likewise very limited, with one of the approved methodologies applying only to water pumping, and the other two to steam system efficiency.

The sectoral coverage is due in part to the fact that early proposals were in sectors that were perceived as highly likely to be approved and were also promoted as part of other policy priorities (e.g. renewable energy). There is now a need to develop and propose more methodologies on energy efficiency, and a more generic methodology for fugitive methane capture projects other than landfill gas. Fuel switching is also a sector that requires attention, particularly use of biomass fuels in other industrial sectors, as does the transport sector.

A major challenge is that within a given sector many of the approved methodologies have applicability conditions that limit their coverage to portions of a relevant technology area or sub-sector. One of the most important limitations in scope is that all of the methodologies except three apply only to existing sites, as opposed to new facilities. This means that baseline methodologies do not yet cover the significant expansion in infrastructure, end-use demand, and non-renewable energy supply needed in developing countries. Similarly, many of the methodologies only apply up to the baseline capacity of an existing facility, and so do not cover expansion of that facility.

[1] The methodology and project approval process is updated almost daily. This report reflects the status of methodologies as of 31 May 2005.

Methodologies that are rejected, and some where revisions are requested, are not being resubmitted, despite the success of those that have been revised

Not only can methodologies rated as "B" cases be revised, but the EB and Conference of Parties (COP) have also encouraged project participants to revise and resubmit rejected methodologies ("C" cases). Where project participants have revised "B" cases, almost all were approved upon their second consideration. An important finding of this study, however, is that most of the methodologies rated as "B" and "C" cases were never revised and resubmitted. Of the 38 "C" cases, only 3 have chosen to revise and resubmit their methodologies. Similarly, six of the methodologies originally rated as "B" cases were never resubmitted to the EB by the project participants.

Approval or rejection of methodologies takes much longer than 4 months, due to the EB offering the possibility of revisions rather than rejection

Methodologies have generally taken longer than the 4 months specified in the CDM Modalities and Procedures (M&P) to approve or reject. The average time for approving a methodology was 9 to 10 months, including methodologies that were originally rated as "B" cases but were revised and later approved. Methodologies that were rated as "A" cases at first consideration by the EB took about 9 months for approval. Methodologies were generally rejected ("C" cases) within 5 months.

A challenge posed by the CDM M&P is that after 4 months, if a methodology is not acceptable for approval as is, the EB would have to reject the methodology outright. Instead, the EB has favoured a process in which some methodologies can be rated as "B" cases and sent back to project participants for revisions. Project participants are given the opportunity to make corrections without having to go through another 4 month process including public comments and a desk review. In the case of many methodologies requiring revisions, the time it takes for approval depends primarily on how long project participants take to submit revisions.

The World Bank Carbon Finance Business has been more successful than average in terms of methodology approvals

Comparing methodology submissions from the World Bank Carbon Finance Business to others, the CFB has submitted 21 per cent of all considered methodologies and has a higher success rate, at 53 per cent versus 43 per cent for all methodologies. The time required for approval of these methodologies was similar to the overall average, with the time required for rejection being longer.

Recent action by the EB will improve the methodology approval process, with the consolidation process being a key element

The EB has introduced innovations during the last year to improve the methodology approval process and cope with the increasing workload. Two important changes were a pre-screening step, to check the quality and completeness of material considered by the EB and Meth Panel, and a feedback loop where the project participants could respond to the preliminary recommendation of the Meth Panel.

In addition, the process of consolidating methodologies is an important development in the last year. The EB recently issued a consolidated methodology for alternative fuels for cement manufacture, and a methodology for biomass power

will be considered by the next meeting. Importantly, the EB has started to recommend consolidation of methodologies within a sector in the review stages of proposed methodologies rather than after methodologies have been approved. This "fast track" consolidation process, where the EB recommends elements be combined into one methodology before final approval of the underlying methodologies, may be beneficial in opening up GHG-intensive sectors more quickly. While this process remains somewhat controversial, and it can be argued that the process of developing the first few consolidated methodologies may have diverted resources from the methodology review process, this could prove to be an efficient way to proceed. If an ACM is able to cover the same scope of projects, but with broader applicability than would have been covered by five methodologies, for example, then it is likely to prove to be an efficient and effective use of the available resources.

The EB adopted procedures for the revision of approved methodologies, which allow project participants to submit a proposal to revise an approved methodology that must be accompanied by a draft PDD. If the EB agrees to consider the revisions, it should consider a recommendation from the Meth Panel no later than at the second EB meeting after the date of submission. If major changes to a methodology (which could have significant implications for its use) are pending, the EB will place the methodology "on hold", meaning that new projects should not use the methodology until the revision is complete. This would not affect projects previously registered that used that methodology, or those currently requesting registration.

The Additionality Tool approved by the EB has had a decisive impact on new methodologies

Although the EB and the COP have made it clear that use of the EB-approved additionality tool is not required, the tool has been widely used, including by 7 of the 25 approved methodologies as well as in many methodologies currently under review. Almost all of the approved methodologies make use of the *elements* contained in the EB additionality tool. All approved methodologies include some assessment of regulatory issues. A majority also look at barriers and investment analysis, as well as common practice, although all three assessments are generally not included in each methodology unless the methodology adopts the EB tool in its entirety.

Most projects accompanying approved methodologies have not been submitted for validation, but other project proponents are using these methodologies successfully

To date only 11 of the 36 projects accompanying approved methodologies have been submitted for validation, 3 have been submitted for registration, and 2 have been registered. The fact that more than 60 large scale projects have been submitted for validation, however, shows that these approved methodologies are being used successfully by project developers other than those who originally prepared the methodologies. The average time between methodology approval and final date for validation comments (which serves as a proxy to the time of validation) was 7 months. The total time from methodology submission to project validation was an average of 15 months.

Requests for reviews of the initial projects seeking registration have highlighted key issues

Just under half of the initial projects submitted for registration – 6 of the 14 projects submitted as of 31 May 2005 - were placed under review by the Executive Board. Three reviews have been completed, resulting in those projects being registered. These reviews serve as part of the learning process of the CDM, raising important issues and have resulted in useful clarifications of validation and registration procedures as well as some methodological issues. The main issues raised in the request for reviews included: incorrect application of a methodology (particularly for additionality), problems with letters of approval, revisions to PDDs after public comment periods, and the disclaimers included by DOE's in their validation reports. For the three completed reviews, the process took approximately six months from the date of opening for public comments on registration to final registration, or four months longer than the normal registration process.

1 Introduction

The World Bank Carbon Finance Business (WB CFB) produces knowledge and information for its various government and private sector participants on CDM projects and regulatory policies. A special focus is on CDM methodologies and procedures. The CFB produced a first Methodology Status Report in May 2004 and an update to that report in November 2004. This report is the latest update on CDM methodologies and project activities.

The objective of this report is to provide an analysis of the CDM methodology approval process to date, as well as early experience with project registration. Some of the key issues addressed are as follows:

- The extent to which methodologies approved so far cover key sectors with high CDM potential, and how broad their scope is within those sectors
- Whether methodologies that are not initially approved are being revised and resubmitted, and how successful they are in that process
- The length of time it takes to approve or reject a methodology
- The success rate of World Bank Carbon Finance Business in producing "approved" methodologies
- The steps being taken to improve the speed and quality of the methodology approval process
- The rate at which projects submitted with approved methodologies are moving forward to validation and registration, and the time required for these steps
- Key lessons from the first few requests for review of projects submitted for registration

The next section presents the status of the proposed and approved methodologies, emerging methodological principles, sectoral and technological coverage, and changes to the approval process. Section 3 discusses additional EB guidance on methodological issues of significance. Section 4 examines issues related to the requests for review of projects seeking registration, as well as the findings of reviews, and the time required for resolving reviews. Section 5 examines the success rate of methodology submissions and the time required for approval, including how WB CFB proposals have fared. This section also looks at what projects with approved methodologies are moving to validation and registration, and the time required for these steps in the project cycle. The final section provides

a rough analysis of the coverage of sectors with high CDM potential by the current approved methodologies.

2 Status of baseline and monitoring methodologies[2]

2.1 Overall progress

The EB baseline and monitoring methodology submission process began approximately 24 months ago. In that time, 115 methodologies have been submitted for consideration. As Table 1 shows, 26 methodologies have been approved as "A" cases, and another 10 have been or are being consolidated into approved methodologies. In other words, these 10 will not initially be published on their own as individual approved methodologies (AM), but will become approved consolidated methodologies (ACM)[3]. A total of 38 methodologies have been rejected ("C" cases); all but two were rejected upon first consideration by the EB. Six of the methodologies are currently rated as "B" cases and can be revised and reconsidered, while 2 methodologies were withdrawn by the project participants before they were approved or rejected. A total of 33 methodologies have not yet been considered by the EB, although roughly half of these have been recommended for revision by the Meth Panel.

[2] The methodology and project approval process is updated almost daily. This report reflects the status of methodologies as of 31 May 2005.

[3] The EB has left open the possibility of many of these methodologies being published separately at a later stage.

Table 1. Status of Methodologies (31 May 2005)

Status	**Number**
Approved Meths "A"	**36**
- "A" case on first consideration	11
- "A" case on second consideration	15
- Meths consolidated into ACM2[a]	5
- others approved for consolidation	5
Rejected Meths "C"	**38**
- on first consideration	36
- on second consideration (i.e. B cases)	2
Reconsider "B"	**6**
Withdrawn	**2**
Not yet considered	**33**
Total	**115**

Note: a. The methodologies used as source material for Approved Consolidated Methodology 1 had already been approved as "A" cases, while 5 methodologies that were still under reconsideration were combined into Approved Consolidated Methodology 2.

Source: UNFCCC website[4]

Many of the approved methodologies were originally rated as "B" cases for reconsideration. Of the 29 methodologies first rated as "B" cases by the EB, 15 were eventually approved, two were recently rejected, and six were included in the consolidated methodologies. The other six have not been resubmitted to the EB by the project participants.

Of the 38 methodologies rejected, only 3 have chosen to revise and resubmit their proposals, although others may choose to resubmit the projects using other approved methodologies.[5] The first "C" methodology, the "V&M do Brasil Avoided Fuel Switch Project" (NM0002, NM0029) under the International Finance Corporation of the World Bank Group, was rejected a second time. The second "C" methodology, the "A.T. Biopower Rice Husk Power Project" (NM0009, NM00014, NM0015, NM0019), was approved after resubmission. The third, "Energy Efficiency Improvements-Hou Ma District Heating, Shanxi Province, China" (NM0058, NM0096), has not yet been reconsidered by the EB.

2.2 Sectoral scopes covered

As Table 2 below shows, with the addition of recent approved methodologies, the sectoral coverage has improved compared to previous status reports. The methodologies are still heavily weighted toward renewable electricity and methane capture in waste management. There are almost no widely applicable industrial

[4] Assistance from Jorgen Fenhann of the UNEP Riso Centre in accessing this data is gratefully acknowledged (Fenhann 2005).

[5] For example, the CFB "El Canada" hydro project submitted a methodology (NM0006) that was rejected, but the project is now using ACM0002 for the purposes of validation.

sector methodologies, given that one of the "sectoral scope 4"[6] methodologies is the restrictive "package cogeneration" methodology (AM0014) and another is for seasonally-operating biomass co-fired cogeneration.

Table 2. Sectoral coverage of approved methodologies (31 May 2005)

	UNFCCC Sectoral Scope	Approved large scale meths	Approved small scale meths	Approved cons meths
1	Energy industries	7	6	1
	- zero emission renewables excl biomass	*2*	*5*	*1*
	- biomass	*3*		
	- waste for energy	*1*		
	- fossil fuels	*1*	*1*	
2	Energy distribution		1	
3	Energy demand	3	3	
4	Manufacturing industries	3	1	1
5	Chemical industries	1		
6	Construction			
7	Transport		1	
8	Mining/mineral production			
9	Metal production			
10	Fugitive emissions from fuels	2	1	
11	Fugitive emissions from HFCs & SF_6	1		
12	Solvent use			
13	Waste handling and disposal	8	2	1
	- landfill gas capture and use	*5*		*1*
	- waste water treatment	*1*		
	- animal waste	*2*		
14	Afforestation and reforestation			
15	Agriculture	2	1	

Note: bulleted headings are subdivisions of UNFCCC-defined sectoral scopes

Energy efficiency methodologies are likewise very limited, with one of the approved methodologies applicable only to water pumping, and another two to steam system efficiency. AM00021, for reducing N_2O process emissions, was the first chemical sector methodology. Note that in Table 2, the sum of the columns is greater than the total number of approved methodologies, because some methodologies cover more than one sectoral scope (e.g. AM0010 Landfill gas capture and use is in "Waste handling and disposal" and "Energy Industries").

In some instances, the EB is revising methodologies to increase coverage of methodologies. As an example, given that biomass power is not covered by ACM0002 and that several similar methodologies were submitted and approved for this technology, EB18 and EB19 recommended that the Meth Panel prepare a consolidated methodology for grid-connected electricity generation from biomass. This will incorporate AM0004 "Grid-connected Biomass Power Generation that

[6] Sectoral scope 4 is for manufacturing industries, and can cover both energy and process emissions in those industries

avoids Uncontrolled Burning of Biomass", AM00015 "Bagasse-based cogeneration connected to an electricity grid", NM0081 "Trupan Biomass Power Plant Project in Chile" and NM0050-rev "Ratchisima Small Power Producer (SPP) Expansion Project". The Meth Panel will consider the methodology at their 16th meeting in June 2005. This EB has also noted that AM0004 must be revised to explicitly state that a combined margin must be used for plants over 15MW, and system average can only be used for plants smaller than 15MW.

Table 3. Approved large scale and consolidated methodology by sector (31 May 2005)

	UNFCCC Sectoral Scope	Meth No.
1	Energy industries	
	- zero emission renewables excl biomass	
	Small grid-connected zero-emission renewable electricity generation	AM0005
	Renewable energy replacing the electricity of one single fossil plant	AM0019
	Grid-connected electricity generation from renewable sources	ACM0002
	- biomass	
	Grid-connected biomass power generation that avoids burning of biomass	AM0004
	Switch from coal/lignite to seasonal agro-biomass power	AM0007
	Bagasse-based cogeneration connected to an electricity grid	AM0015
	- waste for energy	
	Landfill gas electricity with CERs from avoided electricity	AM0010
	- fossil fuels	
	Fuel switch from coal/oil to natural gas	AM0008
3	**Energy demand**	
	Steam system efficiency improvement	AM0017
	Baseline methodology for steam optimization systems	AM0018
	Water pumping efficiency improvement	AM0020
4	**Manufacturing industries**	
	Switch from coal/lignite to seasonal agro-biomass power	AM0007
	Fuel switch from coal/oil to natural gas	AM0008
	New cogeneration unit using natural gas at an industrial plant	AM0014
	Substitution of fossil fuels with alternative fuels in cement manufacture	ACM0003
5	**Chemical industries**	
	Decomposition of N_2O from existing adipic acid plants	AM0021
10	**Fugitive emissions from fuels**	
	Recovery of associated gas instead of flaring	AM0009
	Avoided wastewater and on-site energy emissions in industrial sector	AM0022
11	**Fugitive emissions from HFCs & SF_6**	
	Incineration of HFC23 waste streams from HCFC22 production	AM0001
13	**Waste handling and disposal**	
	- landfill gas capture and use	
	Landfill gas project activities	ACM0001
	Simplified financial analysis for LFG capture projects with no CERs from electricity	AM0003
	Landfill gas electricity with CERs from avoided electricity	AM0010
	Landfill gas recovery with electricity generation but no CERs from electricity	AM0011
	Biodigester power from municipal waste (only applies to India)	AM0012
	- waste water treatment	
	Biogas power from open anaerobic lagoon waste water treatment systems	AM0013
	- animal waste	
	Biogas power from swine manure	AM0006
	Change of animal waste management systems	AM0016
15	**Agriculture**	
	Biogas power from swine manure	AM0006
	Change of animal waste management systems	AM0016

Source: UNFCCC website

2.3 Common principles and elements

This section reviews the common elements, as well as inconsistencies, among the 22 approved and reformatted large scale baseline methodologies and 3 approved consolidated methodologies.

2.3.1 Scope of applicability

While almost all methodologies have a global geographical scope[7], many of them have applicability conditions that mean they only cover part of the relevant technology area or sub-sector. This means that in order for a sector or technology area to be fully covered, more methodologies will be needed or revisions will need to be made to existing methodologies. One of the most important limitations in scope is that all of the methodologies except three apply only to existing sites rather than new facilities. The only methodologies for projects from new facilities thus far are two for non-biomass renewable power (AM0005 and ACM0002) and one for biomass power (AM0004). This means that baseline methodologies do not yet cover the significant expansion in infrastructure, end-use demand, and non-renewable energy supply needed in developing countries.

Many of the methodologies also have limits in that the methodology only applies up to the existing baseline production capacity (e.g. existing heat output: AM0008; existing power production: AM0015; existing industrial production: AM0001, AM0018 & AM0020), but there are also methodologies that allow production capacity to expand within an existing facility (e.g. AM0021, AM0014). Three methodologies also have capacity limits on the power they produce: <15MW for AM0010 (landfill gas capture) and AM0013 (methane from wastewater) and <60MW for renewable power other than biomass under AM0005. ACM0002, however, covers all wind, solar, geothermal, wave and tidal, and run-of-river hydropower[8] regardless of size, making this sub-sector well covered. Similarly, ACM0001 does not have a restriction on the electricity output from landfill gas based power. The one approved methodology for natural gas fired power only covers "package" plants that are owned and operated by a third party, which would be a small part of this sub-sector. Some of the other methodologies also have regulatory and technical applicability conditions that limit their use. For example, AM0012, AM0018 and AM0022 are only applicable where the baseline is business as usual (i.e. no future change in existing facility operation). Similarly, AM0018 only applies to facilities with homogenous outputs.

2.3.2 Additionality and baseline scenario selection

In October 2004, the EB approved the "Tool for the demonstration and assessment of additionality" (EB16 Report, Annex 1), which provides a pre-approved basis for baseline methodologies to determine additionality. The three consolidated methodologies published by the EB require the use of this tool. Otherwise,

[7] Only AM0012 has a geographical restriction: to projects in India

[8] Only hydro using existing reservoirs where the volume of the reservoir is not increased.

however, its use is not mandatory. Project participants are not required to follow the format or content when developing new methodologies.[9] The COP-10 guidance to the EB clearly notes concerns expressed about the additionality tool, and emphasises that the tool is optional and the EB needs to keep the tool open for revision.[10]

In practice, however, the tool has already been widely used. As shown in Table 4 below, almost all of the methodologies make use of elements contained in the EB tool, although only 7 of the 25 approved methodologies use the EB approved additionality tool in its entirety. All approved methodologies include some assessment of regulatory issues, either explicitly (i.e. a step in a process in the methodology) or implicitly (i.e. through the definition of plausible scenarios). A majority also look at barriers and investment analysis, as well as common practice, although all three assessments may not be included in each methodology. The "impact of CDM registration" test is used in only about one third of the approved methodologies.

Table 4. Use of individual additionality assessment tools in baseline methodologies

	Element included?		
	Yes, explicit	**Yes, implicit**	**No**
Regulatory issues	19	6	0
Investment analysis[11]	19	1	5
Barriers Analysis	17	0	8
Common Practice	13	4	8
Impact of registration	9	0	16

Note: includes 7 methodologies using the EB approved tool in its entirety, and therefore include all five tests.

This analysis implies that, while the tool is not mandatory, it has a significant impact on new methodologies because it is seen as a "safer" option than proposing alternatives. The tool has a clear "precedence effect" and it sets the standard against which alternative approaches will be compared and evaluated. This is also the case where the tool is inserted into a consolidated methodology but the source methodologies did not use the tool in its entirety, as is the case for ACM0003. In this case, the project participants proposed a different additionality test (or rather used some of the elements of the tool but not all of them) and this was implicitly rejected by the consolidated methodology referring only to the tool, despite the fact that neither of the final recommendations for approval of NM0040 or NM0048 mention the use of the tool in its entirety. This could cause significant delays in the methodology approval process, because if the original proponents wanted to use the additionality test contained in their proposed methodology that was approved (albeit for consolidation) rather than the consolidated methodology, they would have to resubmit it again.

[9] EB18 in February 2005 also noted that the use of the tool is not mandatory.

[10] Decision 12/CP.10 in FCCC/CP/2004/Add.2

[11] In general, methodologies using investment analysis for assessing additionality rely on Net Present Value (NPV) or Internal Rate of Return (IRR) analysis comparing alternative scenarios. Four of the methodologies (AM0003, AM0009, AM0010, AM0011), however, use external benchmarks to justify that the project is additional by showing that project profitability (or cost of production) without carbon revenue does not meet standard investor requirements.

Some of the steps listed in the additionality tool have also been questioned for their appropriateness, such as the "impact of CDM registration". The EB clarified that assessing the impact of CDM registration can be qualitative. This means that project participants claiming that their projects face prohibitive barriers, particularly in terms of financial returns, do not have to quantify the impact of the CDM on these barriers. This reduces the burden of this step of the tool, but may also make it more subjective. The main point to all of the clarifications on the tool, however, is that project participants can propose revised versions of the tool with proposed baseline methodologies. The easiest way to change sections of the tool will be to propose a new version in the methodology, rather than asking the EB to review and revise the tool as it stands. The EB also noted in February 2005 that project participants using the tool in proposed methodologies should not repeat the text, but only indicate how it would be applied in that context. Proposals to use a modified version of the tool could also be included in methodology proposals, with only the sections to be modified included in the text.

According to the most recent Meth Panel meeting report, many recently submitted methodologies have used the additionality tool as the method for selecting the baseline scenario. In February 2005, however, the EB clarified that the tool is not meant to replace a rigorous determination of the baseline scenario, and that any process to determine the baseline scenario must be consistent with the additionality testing. The Meth Panel is considering whether to develop an optional tool that would provide the basis for determination of the baseline scenario.

2.3.3 Approaches

The approved methodologies are roughly split between two of the approaches listed under paragraph 48 of the CDM M&P. Ten of the approved methodologies use approach b ("Emissions from a technology that represents an economically attractive course of action, taking into account barriers to investment") while 12 use approach a ("Existing actual or historical emissions, as applicable). Two of the approved consolidated methodologies use approach b, while the consolidated methodology for renewable electricity does not specify an approach. None of the approved methodologies use approach c ("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").

2.3.4 Other common elements

- **Upstream emissions:** The two methodologies that deal with natural gas for heat and power generation (AM0008, AM0014) include upstream emissions from natural gas (i.e. fugitive emission from gas production and transport). AM0008 also includes similar upstream emissions for the baseline fuel as well (e.g. road, rail or ship transport of coal). Other methodologies that include fossil fuels, however, do not include these emissions. Whether these emissions are significant enough to warrant the additional data requirements requires further analysis, but the inconsistency in the methodologies will need to be addressed.
- **Methane and nitrous oxide emissions from fossil fuel combustion**: Only 4 of the 25 approved methodologies include methane and nitrous oxide emissions from the combustion of fossil fuels in baseline or project

emissions. As with upstream emissions, these emissions may not be significant enough to warrant inclusion in other methodologies, unless they are used for technologies with low combustion efficiencies (e.g. transport fuels as opposed to power generation).

- **Links to other methodologies:** While the early methodologies approved tended to include the calculations of emissions factors for avoided electricity use within the methodology, more recent methodologies are referring to the combined margin approach used in ACM0002 and reference that methodology. This is important in terms of standardising the approach to displaced grid electricity, since some of the earlier methodologies (e.g. AM0004, AM0010, AM0013) use the weighted average emissions factor or only the operating margin.
- **Ex-post vs ex-ante calculation of electricity emissions factors**: The approved consolidated methodologies leave it open to project participants to choose between ex-ante and ex-post calculation of operating margin emissions factors. Among the other methodologies, some specify ex-post calculation (AM0004, AM0005, AM0010), some specify ex-ante (AM0011, AM0013, AM0018, AM0021) and some do not specify any at all (AM0001).

2.4 Consolidated methodologies

Following the release of the first two consolidated methodologies for renewable electricity and land fill gas capture projects, the EB has moved to create more consolidated methodologies. A third consolidated methodology was approved at EB19 for alternative fuels for cement manufacture (ACM0003), and the Meth Panel is drafting a consolidated methodology for biomass power that will be considered at the next meeting EB. The EB also called for the Meth Panel to draft consolidated methodologies for blended cement (from NM0045-rev2, NM0047-rev, and NM0095), coal bed methane recovery and use (NM0066, NM0075, NM0093, NM0094) and industrial waste heat recovery (NM0031-rev2, NM0087, NM0088, NM0107). A draft consolidated methodology for industrial waste recovery was approved by the Meth Panel at its 16th meeting, and submitted to the EB for consideration.

This consolidation process has been controversial. The EB has been split in how it should approach consolidation, with some feeling greater emphasis should be placed on broadly applicable methodologies developed by the EB, while others feeling experience should help dictate how methodologies might be consolidated. The EB is now recommending that some proposed methodologies be used as source material for consolidated methodologies even before they have been considered by the Meth Panel, since they cover the same sub-sector as other methodologies that have been approved for consolidation. Consolidation, especially early in the approval process, runs the risk of changing the original proposals made by project participants without going through the complete approval process as mandated in the CDM M&P. For example, in the consolidated methodology for alternative fuels in cement manufacture, the complete EB additionality tool was inserted, even though none of the source methodologies contained the complete tool, nor did any recommendations by the Meth Panel or EB instruct the project participants to use the entire tool.

As with ACM0001 and ACM0002, project participants retain the right to request that the EB consider their methodology separately if they do not believe the consolidated methodology covers their project. So far, this has not happened with any of the projects or methodologies that were part of the consolidation process, but most of these projects have not yet been submitted for validation or registration. The "Wigton wind farm project" (NM0012), for instance, has been submitted for validation using ACM0002.

While this process remains somewhat controversial, and it can be argued that the process of developing the first few consolidated methodologies may have diverted resources from the methodology review process, this could prove to be an efficient way to proceed. If an ACM is able to cover the same scope of projects, but with broader applicability than would have been covered by five methodologies, for example, then it is likely to prove to be an efficient and effective use of the available resources.

2.5 Challenges in the approval process

During the early process, there was a steep learning curve on all sides. The workload of the EB and Meth Panel and complexity of issues in the approval process has been higher than expected over the last two years. Although a great deal of criticism was levelled at the EB, the EB has been flexible in its approach and interpretation of the CDM rules. As the process has matured, the EB, with input from its Panels and Working Groups, has provided guidance on many issues, and this has helped (in some cases) to increase the quality of proposed methodologies.

The EB has faced major challenges in starting a process (i.e. to approved baseline and monitoring methodologies) with an unprecedented level of detail and number of technical issues to be addressed. Key challenges have included a lack of resources (financial and human), a lack of clarity over the process and procedures, which affected the quality of inputs and outputs, and differing views on how the process should proceed. In addition, project participants do not always understand the reasoning behind the Meth Panel recommendations, which complicates revising and resubmit their proposals.

While many stakeholders, and even members of the EB and Meth Panel, have noted the need for more resources to compensate panel members for their time and to have more support through the Secretariat (including possible full time expert support), the major shortfall in resources means that this is unlikely to happen in the near future. The AR WG will face similar challenges as the number of submissions in this sector is likely to grow significantly now that the basic procedures have been agreed. The UNFCCC secretariat is trying to staff more technical positions on all of the mechanisms, which would help alleviate at least some of these problems, but this is not possible without additional resources. The lack of financial resources also resulted in the cancellation of one EB meeting in 2005. The severe financial restraint on the CDM is not likely to be overcome, at least in the short-term, without more financial assistance from the Parties.

The Meth Panel has been affected by both resource and political constraints placed on it by the CDM M&P. The Meth Panel members are generally unpaid for much of their work, which must be squeezed into members' regular work schedules, leaving many members overworked. The ability to choose Meth Panel members is

limited by a requirement to maintain an appropriate geographical distribution, which could limit the spread of expertise over sectors. In general, there are significantly fewer applications from developing countries than from industrialised countries. Rather than choosing the most highly skilled "technicians," the EB must also ensure that the geographical distribution of Panel members is met. One possible solution is to encourage industry, particularly in developing countries, to put forward more candidates for the Meth Panel.

The current process of feedback to project participants and revisions in order to assist methodologies reach "A" status can be time consuming. It delays project proposals and places further obligations on Meth Panel members who already face serious time constraints between reviewing new methodologies and considering the revised submissions from "B" cases. When faced with a large number of methodologies that could not be approved within four months, as required by the CDM M&P, the EB has used the "B" rating often for methodologies. The reason is that "B" cases can be revised and submitted again with only Meth Panel review, without having to go through the entire public comment and desk review process a second time. This process can work effectively, as evidenced by the success rate of the methodologies proposed by the World Bank Carbon Finance Business for instance, but further improvements are underway.

Over the last year, the EB has introduced innovations to improve the methodology approval process, address project participants' concerns and cope with the increasing workload. One important innovation in the process was to include the PCF's suggestion for a feedback loop, to allow project participants to respond to preliminary recommendations of the Meth Panel before these recommendations are finalised. Although all documentation, public comments, reviews and recommendations are made public on the UNFCCC website, the public reports only give the results of the Meth Panel and EB decisions. They provide clear guidance on what changes should be made to have a methodology approved, but do not provide background on the discussion or the reasoning behind the decisions. The feedback loop was therefore established to address concerns from project participants that their methodology might not be represented correctly in the Meth Panel recommendations. The feedback loop allows participants to clarify what was intended by the methodology or make minor corrections when necessary, without making substantial changes to the methodology.

Another important change in the last year was to introduce a pre-screening step. In this step, one of the Meth Panel or AR WG members evaluates the overall quality of the submission before it is published on the UNFCCC website and sent to the Meth Panel for review. This is to increase the quality and completeness of material considered by the EB and Meth Panel, given their high workload and the questionable quality of some early proposals. According to the UNFCCC Secretariat, this pre-screening step has been used several times to send back proposals that were not complete or submitted according to the CDM rules.

The reformatting step for approved methodologies has sometimes caused considerable delay, but it has increased the clarity and transparency of the methodologies considerably. For example, NM0048-rev and NM0040, which both address the use of alternative fuels in clinker production, were approved at EB18 subject to reformatting, but took an additional three months before the consolidated methodology was published. Consolidating two methodologies and reformatting

may take longer in some cases, but in the long run the quality and scope of applicability of the final methodology will be better and it might be a more efficient use of the EB resources overall. However, in the start-up phase of the CDM this delayed approval of some methodologies considerably.

While the EB has managed to clear some of the backlog of methodologies in approval process, the workload is likely to increase; the average number of methodologies submitted in the last three rounds was 17, compared with an average of 9 in earlier rounds. In addition, the workload of the Meth Panel has increased substantially, with the fourteenth and fifteenth meetings of the panel considering 24 and 33 methodologies, respectively. Because of this, the EB has allowed the Meth Panel to select 10 methodologies for consideration at each meeting and postpone the others, although the Meth Panel generally covers more than 10.

At their Nineteenth meeting, the EB made the following additional proposals to increase the quality of methodologies and ease the workflow:

- Encourage project proponents to revise and resubmit methodologies that are not approved, and have the Meth Panel prepare detailed criteria for non-approval of methodologies.
- Consider limiting the number of times that B cases can be resubmitted, since this has added to the workload of the EB and Meth Panel.
- Revise the forms for submissions of new methodologies, so that they are closer to the reformatted layout, as well as the guidance for these forms.
- Develop detailed criteria for pre-assessment of proposal new methodologies by the Meth Panel.
- Revise the recommendation forms of the Meth Panel to have a one page succinct recommendation for the EB.
- Consider charging a fee for submitting a new proposal.[12]
- Have a meeting of the Meth Panel and DOE's to develop recommendations to streamline the approval process.
- Have one desk reviewer be a lead reviewer.

While the EB and Meth Panel will continue to develop recommendations to improve the methodology approval process, it is too early to judge the impact of these changes on the efficiency of the approval process.

[12] This last step is somewhat controversial. Since the methodology is part of the public domain, this cost cannot be recouped by the project participant who developed the methodology, and there will be (potentially) many free riders after the methodology is approved.

3 EB guidance on additional methodological issues

3.1 Revisions to approved methodologies

Until recently there was not a clear process for revising approved methodologies. This process often started with the Meth Panel, or from input by a project participant, and the Meth Panel would provide recommendations to the EB on revisions (e.g. AM0016, AM0013 and small changes to ACM0002). In practice, however, this has often taken time because the EB has referred the issue back to the Meth Panel for clarifications on recommendations.

The first experience with a substantial methodology revision was with AM0001 "Incineration of HFC 23 Waste Streams." AM0001 was approved in 2003, applied by two projects in 2004, and placed on hold in September 2004 due to concerns over its applicability, and a review of the methodology was held. Despite the hold placed on the methodology the EB, at its 18th meeting in February 2005, agreed to register both projects with revised PDDs. At EB19, the applicability of the methodology was revised to limit its use to existing HCFC-22 production facilities where no regulation requires complete destruction of the HFC-23 waste. This process took approximately nine months for resolution. It is difficult to interpret any precedence from this particular case, however. Because this project type involves gases governed by two different Protocols, there have been concerns raised over potential perverse incentives that could cause new HCFC-22 production facilities to be built in order to "cash" in on CERs from the destruction of HFC-23.[13] Although these projects do indeed destroy HFC-23, they could also result in increased production and release of HCFC-22. HCFC-22 is both a powerful greenhouse gas (GHG) and an ozone depleting substance; it is controlled, however, by the Montreal Protocol rather than the Kyoto Protocol, and is scheduled for complete phase out by 2040.[14] The EB is seeking guidance from the COP/MOP on treatment of new facilities.

At its Nineteenth meeting, the EB approved procedures for revision of an approved baseline methodology. The EB explicitly distinguished between minor changes to approved methodologies, which will be handled by publishing "versions" just as with the EB procedures, and major changes or "revisions" to methodologies. While

[13] HFC-23 is emitted in the production of HCFC-22.

[14] 2030 in developed countries and 2040 in developing countries.

the EB can at any time propose a revision, the procedures clarify how project participants can request a revision.

The process for revision is as follows:

- Project participants must submit a draft revised version of the approved methodology highlighting proposed changes together with a draft project design document (CDM-PDD) with complete sections A to E, including relevant annexes applying to a proposed revision to the methodology.
- After checking that documentation is complete, the DOE submits the documentation to the secretariat, and the secretariat, after having checked that documentation is complete, forwards the documentation to the EB and Meth Panel.
- The Meth Panel considers the proposed revision at its next meeting, if feasible, and recommends to the Board whether the proposed revision should be accepted for consideration.
- If the EB decides to consider the revision of a methodology, it requests the Meth Panel to further analyze the case and prepare a recommendation to the EB for consideration no later than at the second meeting following the request by the EB.
- The EB may decide to request the secretariat to invite public inputs on the proposed revision for a period of 15 working days.
- Up to two member(s) of the Meth Panel are selected for preparing draft recommendations for the Panel.
- The Meth Panel recommends a revision to an approved methodology or the continued validity of the already approved methodology, possibly with minor revisions and/or minor corrections. The Meth Panel may also recommend a review of an approved methodology based on the experience gained through the examination of submissions of new methodologies in order to ensure a consistent approval process.
- The EB considers the recommendation by the Meth Panel at its next meeting. If the Board approves the revision of an approved methodology, this methodology replaces the previously approved methodology. Any revision to an approved methodology is only applicable to project activities registered subsequent to the date when the revision took effect.

3.2 Renewal of crediting period

Because CDM projects can choose a 7 year crediting period with the option of renewing twice, the EB has noted the need to develop more detailed procedures and guidelines for the renewal of the crediting period and confirming or adjusting the baseline. The EB has asked the Meth Panel to provide recommendations on this issue. At its 16th meeting in June 2005, the Meth Panel outlined requirements in two areas: assessing the continued validity of the baseline, and updating the baseline if necessary.

In terms of the continued validity of the baseline, the DOE would be required to check that the baseline is still the most likely scenario, based on the approved methodology used for the project, and whether project emissions are still below

baseline emissions. In addition, if regulations have changed such that existing plants would be required to implement the practices or technology currently used by the project activity (potentially making it part of the baseline), then the validity of the baseline would be called into question. The verifying DOE would assess the impact and enforcement of the regulations to determine if the baseline remains valid.

In terms of updating the baseline, the original approved baseline methodology should be applied to any new data that is available to determine baseline emissions. This would include updating ex-ante emissions factors that were used throughout the previous crediting period. Data used for updating baseline emissions should exclude the impact of other CDM project activities.

3.3 Small scale CDM (SSC) methodologies

For small scale CDM methodologies, project participants or other stakeholders can submit proposals in writing to the EB for revisions to existing categories or inclusion of new categories. The Small Scale CDM Working Group (SSC WG) of the EB held its first meeting at the end of January 2005, and its second meeting as this report was being completed in May 2005. This group is charged with advising on new SSC methodology proposals, although currently there is no formal process or timeline, as has been established for large scale and AR methodologies.

So far this process has allowed for two new SSC categories to be added and minor revisions made to several categories. The Working Group made recommendations to revise four of the simplified baseline methodologies, including enlarging the scope of "renewable electricity for users" to include co-firing with fossil fuels, which were agreed by the EB. The EB tasked the SSC WG with developing guidelines for the SSC PDD and bundled project activities, and to elaborate methodologies for SSC projects to include more specific calculations of emission reductions. Whether the EB and SSC WG can effectively deal with all of the submissions from stakeholders, however, is not yet clear, nor is how the EB would prioritise the consideration of submissions.

3.4 Afforestation and Reforestation (AR) methodologies

The procedures for submission and consideration of afforestation and reforestation methodologies was approved by EB15 (September 2004), and follows the same general structure and guidelines as for large scale methodologies. The Afforestation and Reforestation Working Group (AR WG) of the EB has started reviewing baseline and methodology proposals for AR projects. To date, a total of 7 methodologies have been submitted. The third meeting of the Working Group in January 2005 considered the first two, and rejected both of them; one was subsequently withdrawn by the project participants. Given the complexity of estimating carbon stocks and flows in AR projects, it is logical that methodology development and revisions will take longer than for other types of CDM projects. The issue of permanence of emission reductions makes this area conceptually different from a technical point of view, while the views of some Annex I governments on purchasing LULUCF credits establishes a political difference as well.

To accelerate the implementation of small scale Afforestation and Reforestation projects, COP-10 agreed on simplified modalities and procedures for small-scale AR projects.[15] SSC AR projects are defined as projects with new anthropogenic GHG removals by sinks of less than 8 kilotonnes of carbon dioxide per year if the average projected new anthropogenic GHG removals by sinks for each verification period do not exceed 8 $ktCO_2e$ per year. The simplified M&P follow the same structure as the M&P for normal SSC projects, including the structure of the PDD, methodologies and guidance on debundling. The COP also asked the EB to develop default factors for carbon stocks and simplified baseline and monitoring methodologies. The AR WG will draft simplified baseline and monitoring methodologies, with input from the Meth Panel.

3.5 National and sectoral policies

The decision on national and sectoral policies at EB14 distinguishes between policies that would give an advantage to higher emission technologies ("Type E+") and those that would favour lower emissions technologies ("Type E-"). The guidance states that Type E+ policies should only be considered in the baseline if they were in force before the adoption of the Kyoto Protocol (11 December 1997). Type E- policies should only be considered if they were in place prior to the agreement on the CDM M&P (11 November 2001). In other words, if a country implemented a policy to promote investment in renewable energy in 2002, this should not be considered as part of the baseline or baseline conditions. The purpose of this decision was to prevent "perverse incentives" for countries to not promote low carbon technologies in order to secure more CDM projects.

The impact of this guidance on methodologies and specific projects is not yet clear. Only one approved methodology (ACM0003) specifically refers to this guidance and very few proposals even mention price distortions (an exception to this is in NM0103 Andijian District Heating). More importantly, the EB approved additionality tool does not explicitly incorporate this guidance on national policies; it is, therefore, not clear which policies should be included in the analysis of regulations or investment analysis. This issue will become more important as more projects move into the validation stage, and specific policy issues are considered.

3.6 Hydro issues

The definition of hydroelectricity in approved methodologies for renewable power may require clarification since AM0005 and ACM0002 contain different criteria. EB18 suggested the Meth Panel consider a limit based on power density greater than $10W/m^2$, and this will be considered at the Meth Panel's 16^{th} meeting in June 2005. In addition, there was discussion by both the Meth Panel and EB on whether a proposal to deal with hydro dominated grids from NM0051 "PCH Passo do Meio" could be incorporated into ACM0002. In the end the Meth Panel recommended this not to be included, on the grounds that it lacked sufficient rigor and conservatism.

[15] Decision 14/CP.10 in FCCC/CP/2004/10/Add.2

4 Registration process and requests for review

As of 31 May 2005, 14 projects have been submitted for registration and 7 projects registered. A request for review has been called for 6 of the 14 projects (although the time limit for requesting reviews has not lapsed on the most recent submissions at the time this report was finalised). Three reviews have been completed, resulting in projects being registered. These reviews serve as part of the learning process of the CDM, and have raised important issues and resulted in useful clarifications of validation and registration procedures as well as on some methodological issues. A review could also raise issues that require further clarification, for example, whether La Olavarria is eligible as a small-scale CDM project given the applied interpretation of project size (see below). While the early review experience will help some project participants to refine their submissions and provide subsequent participants with clearer guidance, there will also likely be additional issues raised by requests for registration over the next year. This section discusses the reasons for the reviews called to date and the review process timeline, as well as some of the controversial decisions.

4.1 COP10 and EB guidance on project registration

The most recent version of the procedures for registration was approved at EB14, in which the payment process for the registration fee was clarified,[16] as well as the notification of the project participants and the public. The request for registration is only officially posted on the UNFCCC website once all fees are paid and the Secretariat has ensured that the documentation is complete. Once the request is posted, the project will be automatically registered if there is no request for review within 8 weeks (4 weeks for small scale CDM projects).

One important clarification from EB18 was that registration can take place without an Annex I Party being involved at that stage. In other words, project participants do not need to have an Annex I partner for registered projects. They can develop projects and go through the process of validation, registration, monitoring and verification on their own, and negotiate to sell the CERs later in the life of the

[16] The registration fee is a sliding scale, with fees that range from $5,000 for projects with emission reductions less than 15 kt CO_2e/yr to $30 000 for projects with emissions reductions greater than 200 ktCO_2e/yr.

project. At that point, the buyer Annex I country must submit a letter of approval to the EB to transfer the credits.

4.2 Process for resolution

As mentioned above, according to the CDM M&P, once a project as been validated, a request for registration made and all relevant documents received by the EB, the project will be registered after 8 weeks (4 weeks for small scale CDM project) if there are no requests for review. This was the case for the Nova Gerar Landfill Gas project and the Rio Blanco Hydro Project.

If a review by three EB members or a Party involved in the project is requested within the public comment period, the process is as follows:

- The EB shall consider the request for review at its next meeting, where it will decide whether to undertake a review or register the project.
- If a review is undertaken, the EB will specify the scope of the review, which will be made public, and the review team from the EB will be designated.
- The EB or the review team will ask for clarifications and further information from the DOE and project participants, for which a response must be received within 5 working days.
- The EB review team then prepares a recommendation for the EB and circulates it two weeks prior to the next EB meeting.
- At the next EB meeting, the EB takes a decision to register the project, reject the project, or request the DOE and project participants to make corrections before proceeding with registration.

The EB is required to meet a minimum of three times a year under the M&P. On average, and due to the heavy workload, the EB meets approximately every two and a half months. This, however, is dependent on the availability of funds, which can cause a meeting to be cancelled. Given the current meeting schedule, a decision on a review could take between two and a half and five months, depending on when the request was made in relation to the EB meetings. If the recommendation by the EB is for corrections prior to registration, this could imply additional time, although this process can also be completed in between Board meetings via email.

For the first three projects where a request for review was submitted, (i.e. Gujarat HFC, Ulsan HFC, Cuyampa) the review process took approximately six months from the date of the request for registration to final project registration. For the other three projects under review (i.e. La Esperanza, Olavarria, and Graneros), the EB decision was made at EB19, which was the second meeting after the request for review as required by the M&P. In these three cases, however, the EB was unable to complete the review. In its finding, the EB stated that the DOE and project participants did not address some issues identified in the scopes of review. The La Esperanza and Graneros cases could be decided after 8 June, when the review team makes its recommendations, or this could be deferred to EB20 if the EB can not reach consensus via electronic decision-making.

4.3 Reasons for review

In order for a review to occur, a Party involved in the project (i.e., a government who has submitted a letter of voluntary participation related to the project) or at least three members of the EB[17] must request a review before the end of the eight week period (4 weeks for small scale). Although three requests (or a request from a Party) are required to trigger a review, the EB first examines the issues triggering the request and then determines whether the review should proceed. Most of the reviews to date were requested due to at least one overriding issue, although many of the reviews detail more than one.[18] The basis for requesting reviews, thus far, can be categorised as follows.

4.3.1 Incorrect application of an approved methodology

There are several cases where requests for review were related to the incorrect application of an approved large or small scale baseline methodology, and a case where a question arose on how to treat greenhouse gases not covered by the Kyoto Protocol. For example, in both the La Esperanza Hydroelectric Project and the Graneros Fuel Switching Project, the requests for review raised concern that the justification for project additionality was insufficient (e.g. lack of justification of assumptions used in investment analysis). The review conclusions at EB19 indicated that the EB is still not satisfied with the justification for additionality provided for La Esperanza phase 1[19]. The PDD justifies additionality of phase I on the basis of investment barriers for small scale hydro in Honduras, and notes that, although financial closure for phase I was complete in 2002, carbon finance "was pursued prior to financial closure". The EB felt this was not sufficient and stated in the review conclusions that the project participants "shall justify further the additionality of phase I." Furthermore, the EB stated that all of the key parameters for the financial analysis used to justify the additionality of the Graneros project must be clarified and made publicly available as part of the registration process.

The scope of review for the Graneros Fuel Switching Project also questioned whether the approach to leakage (e.g. to include maritime transport emissions for coal as positive leakage) was appropriate – this methodology allows for consideration of emissions from fuel transport, but the review questioned how this had been applied in the Graneros project. In addition, the review of the Graneros project noted that the requirement in AM0008 to cap the crediting period at the remaining life of the existing equipment had not been correctly applied in the PDD.

The review of the Olavarria Landfill Gas Recovery Project questioned whether the project qualified as small scale and should be allowed to use the SSC methodologies, because the project emissions calculation did not include fugitive methane emissions from the landfill site under the project scenario. The findings of

[17] These must be full EB members rather than alternates.

[18] The requests for review need not be identical (i.e., three requests called for the same issue).

[19] This project is being built in two phases with powerhouses adjacent to each other. Phase I is divided into two stages, 1A and 1B. According to the PDD, Stage 1A, which has been operational since June 2003, has a capacity of 485 kW and Stage 1B, which is under construction, with a capacity of 785 kW and was scheduled to be operational in May 2004. Phase 2 was to begin construction in June 2004 and will be operational in January 2006.

the review, issued at EB19, instructed the project participants to resubmit the project for registration using a large scale methodology, and noted that the time request for the review period would be limited to 4 weeks for the resubmission.

In terms of this review, the definition of small scale activities for this project type is that the projects "directly emit less than 15 kilotonnes of carbon dioxide equivalent annually."[20] The project boundary for SSC methane capture projects is defined as the "physical, geographical site of the methane recovery facility." Given that no monitoring of project emissions is required other than in the actual flaring/capturing facility or equipment, it is not clear how fugitive emissions from the landfill are part of project emissions. Furthermore, the consolidated landfill gas methodology (ACM0001) states that emissions included in the project boundary are only those from other fuels (i.e. other than the landfill gas) used for the capture process on-site. No account is taken of fugitive emissions under the project scenario. It is unclear whether this issue was specifically addressed within the review, and whether the EB will address the apparent inconsistency.

Finally, under the HFC destruction projects in Ulsan, Korea and Gujarat India, a request for review was raised on each project regarding the "possible implications as to the effect of HCFC 22 as a greenhouse gas have been appropriately treated in the CDM-PDD." The issue was based on whether HCFC 22, a greenhouse gas without a Global Warming Potential (GWP) and governed under the Montreal Protocol, should be treated as leakage.

4.3.2 Disclaimer and responsibility of DOEs

In three of the projects reviewed (i.e. Gujarat HFC, La Esperanza, and Olavarria), the DOE included a disclaimer in the validation opinion stating that the DOE could not be held liable for any incorrect information they had received from project participants.[21] In these cases, the EB rejected this, and said this disclaimer must be deleted. This is significant because could increase the liability placed on DOEs. The EB decision is based on the requirement in the modalities and procedures for the CDM that DOEs check the information they receive, and conduct any necessary investigations to check its accuracy in order to determine whether the proposed project activity should be validated. The structure of the CDM is such that the DOEs must ensure the accuracy of the information received, particularly if it is project specific information (as opposed to official national or international data) rather than the EB. This also points to the need for the EB to develop a good working relationship with DOEs that provides a common understanding of DOE roles. This relationship is being advanced through efforts such as the Meth Panel meeting with DOEs on 13 June 2005.

The EB also noted, in both the Graneros and La Esperanza reviews, their concern with the clarifications from the DOE and project participants, which did not address the full scope of the review.

[20] http://cdm.unfccc.int/Projects/pac/ssclistmeth.pdf

[21] The validator included the same disclaimer in the validation report for the Nova Gerar Landfill Gas project, however, and this was not placed under review nor did the EB require that this disclaimer be deleted.

4.3.3 Letters of approval

Concerns over letters of approval were raised for two projects. For the Gujarat HFC project, the initial letter of approval contained conditional approval that the EB members calling for a review did not find acceptable. When the project was under review a new letter was received stating it provided clarification to the previous letter rather than replacing it, which led the EB to query which letter should be considered the final letter of approval. In the case of the La Esperanza Hydroelectric Project, the EB interpreted the CDM M&P to mean that one letter of approval and authorisation are needed from all of the investor country participants in the Community Development Carbon Fund (CDCF).[22] This is one of the first submissions from a multi-lateral fund, and so one of the first times this issue has been raised. Subsequent to this, however, in the revised guidelines for the PDD released by the EB, it is stated that multilateral funds do not necessarily require approval by each participant's DNA, although the Parties might forgo some rights and privileges if they did not send separate approval letters.

4.3.4 Validation process

The review of the La Esperanza project also raised the issue of whether the final PDD was made available for public comment, or whether public comment was based on an earlier version. This is a concern when revisions are made to the PDD after the public comment period ends. The EB will provide clarification on this issue at its 20th meeting. Similarly, in the review of the Olavarria project, the DOE specified that an outstanding Corrective Action Request (CAR) would have to be addressed before the commissioning of the project, but the EB has queried how the DOE could ensure that this would happen.

4.3.5 Other issues

Inconsistency of information was also cited as a reason for reviewing the La Esperanza project, and inconsistency in crediting dates was raised under the Ulsan HFC project. The EB also wants to ensure that conservative assumptions are used, and noted that the Ulsan HFC project must take the lower of two baseline values measured with flow meters. The Cuyampa Hydroelectricity project was asked to resubmit documentation in English which is the legal working language of the CDM and include all of the relevant documents. This project then went through a second public comment period.

[22] The review conclusions say that the corrections must include "submission of letter of approval by the Party(ies) involved linked to the Community Development Carbon Fund."

5 Analysis of success rates and timing

5.1 Methodologies

As Table 5 below shows, 43 per cent of the methodologies considered by the EB to date have been approved, and 47 per cent have been rejected. Only a small share is currently being reconsidered ("B" Cases), but there are still 33 methodologies that have not been considered.

The average time for approving a methodology was 9 to 10 months, including methodologies that were originally rated as "B" cases but were revised and later approved. Methodologies that were rated as "A" cases at first consideration by the EB took about 9 months for approval. While the procedures for submission of a new methodology say that the Board shall consider methodologies within 4 months of submission, often at the end of that time limit the EB is faced with either having to reject the methodology or send it back to the project participants for revisions. The EB has favoured the latter, which has given project participants the opportunity to make corrections without having to go through another 4 month process. This is why so many methodologies were initially rated as "B" cases for reconsideration, with only 13% being approved on first consideration.

For "B" cases, the revised methodology can generally be considered at the next EB meeting, as long as the Meth Panel has met in between EB meetings to review the revised submission. For methodologies that require revisions, however, the time depends primarily on how long project participants take to submit their changes. Of the 29 methodologies originally rated as "B" cases, 6 were never resubmitted.[23] In some cases the reformatting and consolidation process has also added to the length of time required to finalise approval of the methodology.

The average time in which methodologies were rejected was 5 months, implying that almost all rejected methodologies were rejected on their first consideration. Only two methodologies were rejected after they had been revised[24], and this understandably was a much longer process.

[23] Of the 29, 15 were rated "A" after resubmission, 2 were rated "C", 6 were consolidated into ACM0002, and 6 were never resubmitted.

[24] NM0030 "Haidargarh bagasse based cogeneration power project, Balrampur Chini Mills" and NM0020 "La Vuelta and La Herradura hydroelectric project"

Table 5. Success rates and time required for decisions on methodologies (31 May 2005)[25]

	Number	Share of total considered	Time for conclusion (months)
Approved Meths: "A"	**36**	**43%**	
- A case on first consideration	11	13%	9.0
- A case on second consideration	15	20%	
- Meths consolidated into ACM2[a]	5	6%	9.7
- Other meth recommended for consolidation	5	4%	8.4
Rejected Meths: "C"	**38**	**47%**	
- first consideration	36	45%	4.8
- second consideration	2	2%	18.6
Under reconsideration: "B"	**6**	**7%**	
Withdrawn	**2**	**2%**	
Total considered	**82**	**100%**	
Not yet considered	33		
Total submitted	115		

Note: a. NM0012, NM0024, NM0036, NM0043 and NM0055 were covered by ACM0002

Table 6shows that, while the World Bank Carbon Finance Business has submitted 19 per cent of all methodologies and 21 per cent of all considered methodologies, their submissions make up 25 per cent of all of the approved methodologies and only 16 per cent of rejected methodologies. This indicates a higher success rate, with a 53 per cent success rate. The time required for approval was similar to the average for all methodologies, with the time required for rejection being longer (see Table 7)

Table 6. Methodologies submitted by World Bank Carbon Finance Business (31 May 2005)

	WB CFB	Total Number	WB Share of Total (%)
Approved Meths: "A"	**9**	**36**	**25%**
- A case on first consideration	3	11	27%
- A case on second consideration	4	15	27%
- Meths consolidated into ACM2[a]	1	5	20%
- Other meth recommended for consolidation	1	5	20%
Rejected Meths: "C"	**6**	**38**	**16%**
- first consideration	6	36	17%
- second consideration	0	2	0%
Reconsider: "B"	**1**	**6**	17%
Withdrawn	**1**	**2**	50%
Total considered	**17**	**82**	**21%**
Not yet considered	5	33	
Total submitted	22	115	**19%**

Note: a. NM0012, NM0024, NM0036, NM0043 and NM0055 were covered by ACM0002

[25] Assistance from Jorgen Fenhann of the UNEP Riso Centre in accessing this data is gratefully acknowledged (Fenhann 2005).

Table 7. Time for conclusions on methodologies (31 May 2005)

	WB Meths	All Meths
Approved Meths: "A"		
- A cases	8.2	9.0
- Meths consolidated into ACM2	12.0	9.7
- Other meth recommended for consolidation	n/a	8.4
Rejected Meths: "C"		
- first consideration	7.4	4.8
- second consideration	n/a	18.6

5.2 Projects moving on to validation and registration

Given that project participants who submit a new methodology ultimately seek registration for their project, we would expect that most of the PDDs that accompany approved methodologies would go on to validation. So far, however, this has not always been the case. As Table 8 shows, as of 31 May 2005, only 11 of the 36 projects accompanying approved methodologies have been submitted for validation, 3 submitted for registration, and 2 have been registered. It is important to remember, however, that 11 methodologies have been approved or recommended for consolidation in just the last two and a half months, so it is likely that many more of these projects will be submitted for validation soon. Furthermore, the fact that more than 60 large scale projects have been submitted for validation (Fenhann 2005) shows that these approved methodologies are being used successfully by project developers other than those who originally prepared the methodologies.

For those projects accompanying an approved methodology submitted for validation, the average time between the decision by the EB on the methodology and the final date for validation comments (which serves as a proxy to the time of validation) was 7 months. From the time the methodology was originally submitted to the EB until the final date for validation comments was an average of 15 months. For the two large scale projects that have been registered (Nova Gerar Landfill Gas to Energy and HFC decomposition at Ulsan), the total time from submission of methodology to registration was 19 and 21 months, respectively.

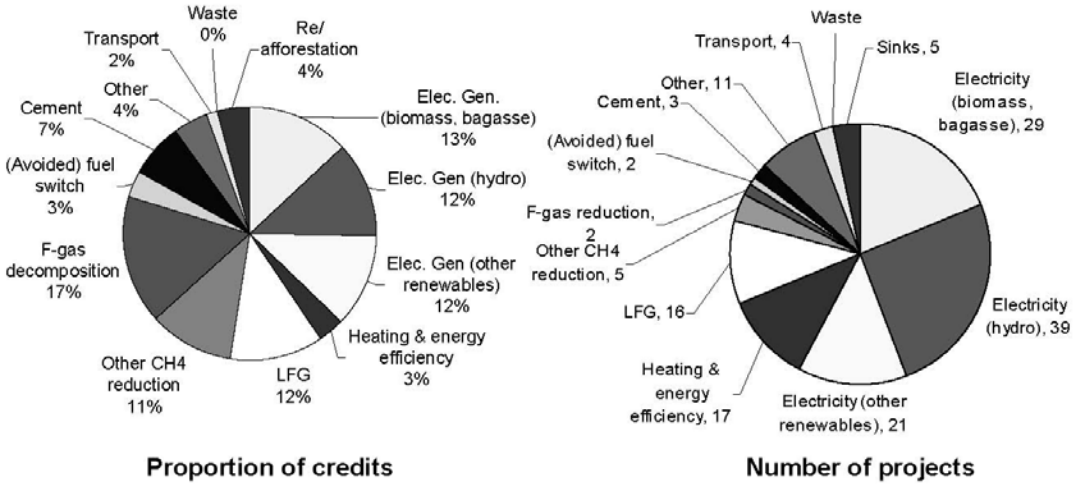
Table 8. Progress for projects from approved methodologies (31 May 2005)

	Projects
Approved Methodologies	36
Submitted for Validation	11
Submitted for Registration	3
Registered	2

6 Methodology coverage versus CDM Potential

While a number of articles and reports have analysed the CDM market potential by region (e.g. Jotzo & Michaelowa 2002; Chen 2003) or the breakdown of project types in the current pipeline (e.g. Ellis et al. 2004), very few have looked at the market *potential* by sector or project type. The current project pipeline is heavily weighted toward renewable electricity and methane capture projects, although the few large HFC projects (in terms of CERs) make up a significant share of the credits (see Figure 1). This does not, however, necessarily reflect the *potential* for CDM projects in these sectors, but rather the priorities of the early movers in the CDM market

Figure 1. CDM project pipeline in 2004 (from (Ellis et al. 2004))



Haites (2004) provides the most recent analysis of the project types and technologies that make up the potential CDM market, based on research by Trexler and Associates and a team from ECN led by J.P.M. Sijm (Sijm et al. 2000).

Table 9. Share of CDM potential by project type

Project type	Share of total CDM	
	TAA[a]	Sijm et al.
Energy efficiency (commercial and residential)	20	66
Energy efficiency (industrial)	11	
Landfill gas recovery (including use for power)	13	
Fugitive methane (oil and gas)	11	
Coal bed methane	12	
Destruction of other GHGs		
Renewable electricity	4	14
Fuel switching	2	17
Afforestation and reforestation	15	
Other projects	13	3
	100	100

Notes: a. based on stringent additionality and \$10/tCO_2e in Trexler and Associates Study
Source: Haites (2004)

A comparison of the share of potential from Table 9 and the spread of approved methodologies from Table 2 shows that, to realise the potential in sectors other than renewable electricity and landfill gas, project developers need to propose methodologies for these other sectors. Most of the early proposals were in sectors that were perceived as "safe" and were also promoted as part of other policy priorities (e.g. renewable energy).

The challenges for each project type are explained below:

- **Energy efficiency:** As discussed in previous sectors, the approved methodologies under "Energy Demand" only cover water pumping efficiency and steam system efficiency, which are likely to be relatively small portions of this technology area. The approval of a consolidated methodology for industrial heat recovery, as well as methodologies similar to NM0101 "Grasim baseline methodology for the energy efficiency improvement in the heat conversion and heat transfer equipment" could significantly improve the coverage of this sector. The only caveat is that all of the energy efficiency methodologies apply only to retrofits, while some of the estimates of potential clearly include greenfield projects (i.e. building a facility that is more efficient than "business as usual" for the sector and region).
- **Landfill gas recovery:** The approval of the consolidated methodology for landfill gas capture projects (ACM0001) means that this area is relatively well covered. Much of the potential is with existing sites, and in theory landfill gas is more likely to be regulated in new facilities. A methodology covering methane avoidance, through combusting or composting activities, is still needed.
- **Fugitive methane:** The only approved methodology in this sector, AM0009, is quite restrictive. It only applies to brownfield sites where there is no legal reason to avoid flaring, does not include emissions reductions from downstream use of the captured gas, and assumes that 100 per cent of the methane is destroyed by the flare. More methodologies will need to be approved to cover the wide range of possible projects in this sector.
- **Coal bed and coal mine methane:** While there are no methodologies approved for this sector currently, the EB has asked the Meth Panel to draft a

consolidated methodology for this sector based on four submitted methodologies that have not yet been approved. Depending on the specifics of the ACM, this "fast track" consolidation process, where the EB recommends elements be combined into one methodology before final approval of the underlying methodology, will be beneficial in opening up this sector for more projects.

- **Destruction of other GHGs:** Haites (2004) reports that the Trexler and Associates study looked at market potential by sector at three different theoretical levels of additionality stringency[26]. Although the market potential for destruction of other GHGs was not estimated as high at the high level of additionality stringency, which are the results shown in Table 9, the potential was very significant at a mid-level additionality stringency. In other words, their analysis suggested that many projects focusing on destruction of non-CO_2 and methane gases would not stand up to stringent additionality testing. Recent experience with HFC projects, however, suggests that these projects will be approved and will be very large (e.g. 5 $MtCO_2e$/yr for the two approved HFC projects combined and 10.5 $MtCO_2e$/yr for the project that accompanies the approved methodology for N_2O reduction for existing adipic acid production).
- **Renewable electricity:** Although this sector may not represent the largest emissions reductions, once the consolidated biomass power methodology is approved, the entire sector will be well covered. This is the one of the only sectors where greenfield projects are well covered by the approved methodologies.
- **Fuel switching:** This sector is very broad: as such it is difficult to cover with only a few methodologies. Coal/oil to gas fuel switching for boilers is addressed by AM0008, but only where gas is more expensive, capacity is not increased, no integrated process upgrade occurs and no efficiency improvements are expected. Co-firing of industrial boilers with biomass is also an important area, and only the cement sector has been addressed so far (i.e. ACM0003). Other industrial sectors where biomass co-firing has potential need to be proposed, as do natural gas methodologies with wider applicability conditions than AM0008.
- **Afforestation and reforestation:** Given the early stage of the process for AR methodologies, this sector has not yet been addressed. It is reasonable to expect, however, that developing methodologies for this sector will take time for several reasons. First, many of the underlying methodological issues with carbon sink enhancement are much more complex that energy or process emission technologies. Secondly, this sector is a lower priority for many multi-lateral and bi-lateral funders. For example, most of the bilateral CDM programmes that have explicit preferences do not focus on sinks (PointCarbon 2003), and only 5 per cent of the active PCF projects are in the land-use, land-use change and forestry sector (PCF 2004).

[26] These stringency levels do not represent specific baseline policies or additionality criteria, but are qualitative assessments of the degree to which the emission reductions are likely to be judged to arise from activities that go beyond "business as usual". The rank of 5 out of 5, called "high stringency" and used in Table 9, means projects where additionality would be "unquestioned". A mid-level stringency (3 out of 5) means that some projects could potentially be questioned on additionality (see Haites 2004).

- **Transport:** The transport sector is one of the largest and fastest growing emitters of GHGs. There has been very little activity within the CDM related to transport, however, or in the earlier AIJ pilot phase. Of the 115 submitted methodologies, only six are for transport: 2 of these of have been rejected (NM0052 & NM0069), one on ethanol fuel has received a preliminary B rating from the Meth Panel (NM0082), and three others have not yet been considered (AM0105, AM0108, AM0109). Transport projects have not featured in major programmes such as CERUPT or the PCF. This may be in part due to the fact that transport emission reductions require complicated methodologies and are more typically associated with programmatic interventions, rather the project-based activities. While programmatic intervention may be considered in the future for CDM, so far the EB has not issued any guidance on their eligibility.

This analysis points to the urgent need to develop more methodologies on energy efficiency and a more generic methodology for fugitive methane capture projects other than landfill gas capture. It is too early to judge the results of the AR methodology process, given that only 7 methodologies have been submitted so far. Fuel switching is also a sector that will require attention, particularly for use of biomass fuels in other industrial sectors than the cement sector. Significant progress has been made in the last year in unlocking the potential of the CDM, but more proposals are needed, and consolidated methodologies and revisions to approved methodologies, to further broaden the coverage to areas with high mitigation potential.

References

Note: All UNFCCC documentation on methodologies, projects, and meetings reports are from http://cdm.unfcccc.int.

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Annexes:

Annex A: Approved Methodologies

AM0001	Incineration of HFC 23 Waste Streams	NM0007-rev
AM0002	Greenhouse gas emission reductions through landfill gas capture and flaring where the baseline is established by a public concession contract	NM0004-rev
AM0003	Simplified financial analysis for landfill gas capture projects	NM0005-rev
AM0004	Grid-connected biomass power generation that avoids uncontrolled burning of biomass	NM0019
AM0005	Small grid-connected zero-emissions renewable electricity generation (112 KB)	NM0023
AM0006	GHG emission reductions from manure management systems (221 KB)	NM0022-rev
AM0007	Analysis of the least-cost fuel option for seasonally-operating (78 KB)	NM0028
AM0008	Industrial fuel switching from coal and petroleum fuels to natural gas without extension of capacity and lifetime of the facility (91 KB)	NM0016-rev
AM0009	Recovery and utilization of gas from oil wells that would otherwise be flared (246 KB)	NM0026
AM0010	Landfill gas capture and electricity generation projects where landfill gas capture is not mandated by law (62 KB)	NM0010-rev
AM0011	Landfill gas recovery with electricity generation and no capture or destruction of methane in the baseline scenario (64 KB)	NM0021
AM0012	Biomethanation of municipal solid waste in India, using compliance with MSW rules (67 KB)	NM0032
AM0013	Forced methane extraction from organic waste-water treatment plants for grid-connected electricity supply (377 KB)	NM0039
AM0014	Natural gas-based package cogeneration (82 KB)	NM0018-rev
AM0015	Bagasse-based cogeneration connected to an electricity grid	NM0001-rev
AM0016	Greenhouse gas mitigation from improved animal waste management systems in confined animal feeding operations (242 KB)	NM0034-rev2
AM0017	Steam system efficiency improvements by replacing steam traps and returning condensate (304 KB)	NM0017-rev
AM0018	Steam optimization systems	NM0037-rev
AM0019	Renewable energy project activities replacing part of the electricity production of one single fossil-fuel-fired power plant that stands alone or supplies electricity to a grid, excluding biomass projects	NM0053
AM0020	Baseline methodology for water pumping efficiency improvements	NM0042-rev
AM0021	Baseline Methodology for decomposition of N2O from existing adipic acid production plants	NM0061
AM0022	Avoided Wastewater and On-site Energy Use Emissions in the Industrial Sector	NM0041-rev2

Approved consolidated methodologies

Meth. Number	Methodology Title	Sectoral Scope	Consolidated Sources
ACM0001	Consolidated methodology for landfill gas project activities	13	AM0002, AM0003, AM0010, AM0012
ACM0002	Consolidated methodology for grid-connected electricity generation from renewable sources	1	NM0001-rev, NM0012-rev, NM0023, NM0024-rev, NM0030-rev, NM0036, NM0043, NM0055
ACM0003	Emissions reduction through partial substitution of fossil fuels with alternative fuels in cement manufacture		

Annex B: World Bank CFB Submissions

(Status as of 23 May 2005)

NM #	Projects with New Methodologies	Rating	AM#	Use for / comment
0005-rev	**Brazil:** Nova Gerar Landfill	A	0003	Landfills without power generation
0006	**Guatemala:** El Canada Hydropower	C / CM		Renewable energy-methodology *Resubmitted using different project.*
0010-rev	**South Africa:** Durban Landfill	A	0010	Landfills with power generation
0023	**Mexico:** El Gallo Hydropower	A	0005	Renewable energy up to 60 MW, grid-connected
0024-rev	**Colombia:** Jepirachi Windenergy	B / CM		Renewable energy up to 30 MW, grid-connected. – *Used in consolidated methodology: No final EB decision*
0028	**India:** Fuel Switch, TA Sugar	A	0007	Coal to biomass fuel switch, gird-connected
0032	**India:** Luknow, Asia Bioenergy Landfill	A	0012	Waste management projects in India
0042	**India:** Energy efficiency – water pumping	A	0020	Water pumping efficiency in public water utilities.
0046	**Uzbekistan:** Andijan District Heating	C		District heating rehabilitation – *Resubmitted.*
0047	**Indonesia:** IndoCement – Blended Cement	B		Cement with lower clinker content – *will be consolidated*
0048	**Indonesia:** IndoCement – Alternative Fuel	A	ACM 0003	Alternative fuel in cement production-*approved, consolidated*
0054	**Ecuador:** Sibimbe Hydroelectric *(non-PCF)*	C		Renewable energy, grid-connected. *Resubmitted using ACM0002*
0076	**Chile:** Chacabuquito Small Hydro	B		National methodology for grid-connected renewables in Chile-*Resubmission under preparation*
0102	**China**: Jincheng coal bed methane	N/A		Coal mine methane power generation
0103	**Uzbekistan**: Andijan District Heating	N/A		District heating rehabilitation – *Resubmission of previously rejected NM0046*
0110	**Brazil**: Plantar –charcoal production	N/A		Mitigation of methane emissions in charcoal production
0112	**Azerbaijan**: Hydro optimization	N/A		Increased electricity generation from existing hydropower

NM #	Projects with New Methodologies	Rating	AM#	Use for / comment
0114	**Azerbaijan:** SCADA-efficiency improvement	N/A		Improved efficiency of electrical power system generation
ARNM0003	**Tanzania**: TIST	N/A		Internatational small group and tree planting programme
ARNM0007	**Moldova:** Soil Conservation	N/A		Moldova soil conservation project

Notes: NM# = New Methodology number, AM# = Approved Methodology number (for published methodologies), CM = consolidated methodology.

Meth Panel recommendation. Ratings: A = approved, B = may be approved with modifications, C = not approved, N/A = under review.

Annex C: Registered CDM projects (3 June 2005)

Date	Title	Host Parties	Other Parties	Methodology	Reductions (tCO_2)	Ref
03 Jun 05	Santa Cruz landfill gas combustion project	Bolivia		AM0003	82 680	0048
03 Jun 05	Cortecito and San Carlos Hydroelectric Project	Honduras		AMS-I.D.	37 466	0051
23 May 05	Biomass in Rajasthan – Electricity generation from mustard crop residues	India	Netherlands	AMS-I.D.	31 374	0058
23 May 05	e7 Bhutan Micro Hydro Power CDM Project	Bhutan	Japan	AMS-I.A.	524	0062
23 Apr 05	Cuyamapa Hydroelectric Project	Honduras		AMS-I.D.	35 660	0045
24 Mar 05	HFC Decomposition Project in Ulsan	Republic of Korea	Japan	AM0001	1 400 000	0003
08 Mar 05	Project for GHG emission reduction by thermal oxidation of HFC 23 in Gujarat, India.	India	Japan Netherlands United Kingdom of Great Britain and Northern Ireland	AM0001	3 000 000	0001
11 Jan 05	RIO BLANCO Small Hydroelectric Project	Honduras	Finland	AMS-I.D.	17 800	0028
18 Nov 04	Brazil NovaGerar Landfill Gas to Energy Project	Brazil	Netherlands	AM0003	670 133	0008

Annex D: Executive Board Meetings

Meeting	Finish Date
1	01 November 2001
2	16 January 2002
3	10 April 2002
4	10 June 2002
5	03 August 2002
6	24 October 2002
7	23 January 2003
8	20 March 2003
9	08 June 2003
10	29 July 2003
11	17 October 2003
12	28 November 2003
13	26 March 2004
14	14 June 2004
15	03 September 2004
16	22 October 2004
17	03 December 2004
18	25 February 2005
19	13 May 2005

Annex E: Dates of submission for methodology rounds

Round	Final Submission Date
1	15 April 2003
2	29 May 2003
3	16 July 2003
4	10 September 2003
5	23 January 2004
6	15 April 2004
7	29 June 2004
8	28 October 2004
9	14 February 2005
10	19 April 2005