

UNFCCC

WORKSHOP REPORT

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| Title of meeting: | UNFCCC Practitioners Workshop “Improvement of CDM Methodologies for Transportation” |
| Dates: | March 3, 2011 |
| Location: | Bonn |

Objective/ purpose of the workshop:

The workshop aimed to bring together transport experts, methodology developers, project participants, and relevant stakeholders with the view to collect ideas on ways to improve existing methodologies for transportation under CDM and brainstorm on a top-down development of new CDM methodologies to be undertaken by UNFCCC in the nearest future. The focus of the discussion of large-scale methodologies was on mass rapid transit systems (collecting inputs on the ongoing revision of the AM0031 and ACM0016 methodologies) and freight transportation (collecting inputs on the ongoing development of the Tool to estimate project emissions from the transportation of freight). The focus of the discussion of small-scale methodologies was on emission reductions opportunities from the improved driving conditions, changes to driving patterns, improved engine efficiency in small vehicles (e.g. tricycle taxis), introduction of electric vehicles and programs to scrap old inefficient vehicles in exchange for new efficient vehicles.

Summary / key outcomes:

Opening remarks from Massamba Thioye

The workshop began with the opening remarks from the manager of the Standard Setting Unit of the Sustainable Development Mechanisms Programme of UNFCCC, Massamba Thioye. During his welcoming speech, Massamba highlighted that there are only few transport methodologies for the CDM and that the potential of the ones that exist is not fully realized so far. He also emphasized that encouraging CDM activity in the transport sector is a high priority for the CDM Executive Board. Massamba also expressed his expectations and hope that workshop can help better understand the challenges and identify solutions to developing this project area.

Module 1: Improvement of methodologies for mass rapid transport systems (AM0031 and ACM0016)

The module began with the presentation from the Secretariat introducing main methodological steps and approaches used in the AM0031 and ACM0016 methodologies to estimate emission reductions. This presentation was followed by two presentations from the guest speakers, Dr. Juerg Gruetter from Grütter Consulting, the developer of the these methodologies, who also developed CDM projects using the methodologies in question, and Daisy Rodriguez, from Transmilenio, a bus rapid transit (BRT) system, designed and implemented according to the requirements stipulated in the AM0031 methodology and received additional funding for implementing the project via CDM.

Dr. Juerg Gruetter highlighted the high complexity and data- and resource-intensity of transport projects under CDM and suggested relaxing a number of monitoring requirements for parameters that do not change rapidly in time. In particular, according to the requirements stipulated in both methodologies, parameters such as the leakage emissions from changes in the load factor of conventional busses and taxis remained in operation after the implementation of a mass rapid transit system and in the impact of reduced congestion as a result of the project activity should be monitored on an annual basis. At the same time, according to the evidence provided by Dr. Gruetter from monitoring reports of CDM projects using these methodologies, these parameters do not change rapidly. Therefore, Dr. Gruetter suggested less frequent monitoring, which will reduce implementation costs of these projects. Another important area that needs improvement is additionality demonstration that, in opinion of Dr. Gruetter, should be refined to reflect the specificity of transport projects under CDM. One of the alternative ways of transport-specific additionality demonstration could be a positive list of technologies or project types, which are not a

common practice in developing countries (e.g., bus rapid transit systems, mass rapid transit systems, electric and hybrid vehicles), to be considered as additional by default.

Daisy Rodrigues highlighted similar problems which Transmillenio faced during the implementation of the project activity based on the AM0031 methodology. Ms. Rodrigues reiterated the comments by Dr. Gruetter's, who was also the Transmillenio project proponent, about the unnecessary high frequency of monitoring of some parameters (load factor, congestion impact) that do not change drastically from year to year. Both speakers also highlighted challenges associated with validation by DOEs .

The presentations by the guest speakers were followed by a questions and answers session during which inter alia the following remarks were made by the stakeholders presented at the workshop:

- there is a need for more simplified procedures in the transport CDM methodologies;
- DOE's sometimes lack competent people when it comes to a validation of transport projects and their slow response time creates a bottleneck.

It was also pointed out by Dr. Gruetter that when setting a particular requirement in a methodology it is important to have an idea of the cost that meeting this requirement would entail to project proponents and the amount of CERs that depend on that requirement. Dr. Gruetter also highlighted an inconsistency in the way methodologies from different sectors are assessed and approved.

During the discussion on possibilities of using default values in transport methodologies, Dr. Gruetter, the developer of AM0031 and ACM0016, expressed an opinion that for many parameters it would be difficult to determine default values due to their high variability even within one country (e.g., occupancy rates can differ from one city to another for the same transportation mode), however certain parameters such as specific fuel consumption could be given as a default.

Module 2: Improvement of small-scale transportation methodologies

Firstly, Alan Silayan (CaFis Inc.) shared the experience in developing the meth AMS-III.AA (which was partly based on AMS-III.S) and spoke about the challenges of developing small scale CDM (SSC) transport projects (specifically fuel efficiency improvements in two-stroke diesel tricycle taxis which are very commonly used throughout Southeast Asia). He highlighted the importance of SSC transportation projects, especially in terms of the health aspects from particulate matter (PM) emissions. Among those barriers he observed for SSC CDM projects, he noted that there is a large variation in SSC transportation systems, and a grave lack of data, especially in developing regions. Data from Europe/USA or Japan can not be generalized to underdeveloped areas, and statistics in these areas are sorely lacking.

Another issue is whether a constant route is a reasonably usable assumption given the behaviour of tricycle use in the Philippines which are used primarily as taxis with no fixed route (rather than bus lines with a fixed route). A third issue is the lifetime of baseline vehicles. It was shown that tricycles used in the Philippines last a very long time. It may be difficult to prove such a case given the requirements of conservativeness by the respective methodology.

During the discussion, the concept of establishing a "global data base" of transportation systems (vehicle populations and usage modes, efficiencies and emissions factors and etc.) was brought up to facilitate the implementation and evaluations of CDM transport projects. And, it was suggested that it should be tied to the training of experts in transport area, who could help generate the data, as well as accessing and using the data in their various projects.

Dr. Horizon Gitano (University Sains, Malaysia) followed covering challenges associated with vehicle fuel consumption and emissions measurements in his presentation. He stressed that models exist that are excellent for predicting vehicle power demands, but the application to determine fuel consumption and/or GHGs emissions was more difficult as many additional (often technology specific) factors had to be included. For example, gaseous fuels are much more subject to leakage (in terms of accidentally escaping fuel) than gasoline, and it is also harder to eliminate). He mentioned that vehicular data logging is steadily improving and may be the wave of the future. He also suggested that in a large study the statistically significant sampling based

method can be used. He recommended careful road measurement of a few vehicles coupled with the use of vehicle performance (emissions, power, fuel consumption) models. This was echoed by various members of the audience who mentioned that very sophisticated models exist, but what is missing is good baseline data from the less developed countries around the world. Finally he expressed concerns on the cost of implementing CDM projects, which may actually amount to more than the cost of developing a new, fuel saving technology. In the end, for SSC projects, he favoured a greatly simplified CDM methodology with conservative estimates of emissions reductions.

Yasuki Shirakawa (Climate Consulting, LLC) and Yajima Mitsuro (Almec Corporation) shared the experience of developing AMS-III.AP as well as the project activity applying AMS-III.AP to a bus idle-stop system in China. They mentioned that the CDM project related cost (including the cost of devices) versus benefit was not very favourable, and when combined with the leakage calculations it would hardly be a viable project.

Dr. Juerg Gruetter (Gruetter Consulting) continued a discussion of faced problems associated with SSC CDM methodologies/projects, specifically pertaining to electrical and hybrid vehicles. His main concern was the lack of detailed guidance in the methodology making it vague and ultimately more difficult to use in actual project activities. He specifically mentioned about a clarification request regarding the eligibility of producers of electric vehicles undertaking the CDM project to the Executive Board has gone unanswered for 6 months.

Felilcity Spors (The World Bank) then spoke about issues relating to a vehicle scrap/exchange program in Egypt. Among the various observations she had, she noted that often a request for clarification can spawn a revision of the existing methodology, which may hurt it's compatibility with other previously applicable programs. She also raised the issue of how laws (potentially banning or removing inefficient vehicles) can qualify for carbon credits. While they could potentially be very effective at reducing CO2 production, how could their influence be measured?

Module 3: Development of a tool for freight transportation

The Secretariat informed about the on-going development of the 'Tool to determine project or leakage emissions from transportation of freight' in order to seek feedback from the stakeholders. The tool allows for two options to estimate project emissions: one based on monitoring fuel consumption and the other one based on default emission factors. The stakeholders agreed to the proposal of using default emission factors on a ton-km basis. They also highlighted that the tool should be as simple as possible, given that this is a minor emission source, and that no significant resources should be deployed to develop highly differentiated emission factors. Finally, most stakeholders were of the view that this tool should include only one option that involves default emission factors for the calculation of project emissions and may not require the option of monitoring fuel consumption.

Module 4: Brainstorming session on the top-down development of CDM methodologies in transport

The brainstorming session started with a presentation by Yasuki Shirakawa (Climate Consulting, LLC) who introduced eco-driving as a potential area for project activities in the transport sector. He also shared his ideas for CDM methodology development based on the Eco-driving concept suggesting that the project activity would involve installing equipment or devices at vehicles to measure the changes in driving patterns and this way allowing to separate the effects of eco-driving on emission reductions from other factors. Mr. Shirakawa also introduced a possible methodological framework for mild acceleration.

Afterwards, the floor was open and the discussions/proposals can be summarized as below:

- Work on new approaches for additionality demonstration would be welcomed given the specific circumstances of the transport sector

- Focus top-down methodology development on freight transport
- Take into account the context of a developing country when developing approaches for additionality demonstration, baseline determination, and setting applicability criteria in transport projects.
- Refine applicability criteria of the AMS III.C methodology to allow vehicle manufacturers to use the methodology as well as fleet owners.
- Make such documents as the Validation and Verification Manual (VVM), General Guidelines on Small-scale methodologies, and approved methodologies consistent with one another to avoid confusion and facilitate the ease of use of methodologies.
- Provide relevant training to main stakeholder groups, including DOEs, to promote transportation projects under CDM.
- Consider creating a global database of regional transportation data to promote more transport projects and serve as a data source which, combined with existing transport models, can help generate baseline information and, this way, help the overall project cycle.

Follow-up action / Next steps:

The inputs received during the Workshop will be considered in the on-going revision of the AM0031 and ACM0016 methodologies and finalization of the 'Tool to determine project or leakage emissions from transportation of freight'. A practitioner workshop planned in June 2011 may be used to discuss new and innovative approaches on additionality for the transportation sector.

The Small Scale Working Group (SSC WG) also has taken note of the methodological issues raised and relevant proposals during the discussion and will use these as inputs to improve the SSC transportation methodologies. This may include but not limited to further guidance in AMS III C for electric vehicles projects, exploring the use of default parameters where possible (including a process to develop default parameters).

Annex I : Participants List

List of Participants

Practitioners Workshop on the Improvement of CDM Methodologies for Transportation
Bonn, Germany
3 March 2011

| Name | Organization |
|-------------------------------|--------------------------------------------------------------------|
| Francisco Arango | Inter-American Development Bank |
| Stefan Bakker | Partnership on Sustainable Low Carbon Transport/ ECN |
| José Bienvenido Manuel Biona | Clean Air Initiative for Asian Cities (CAI-Asia) |
| Javier Castro | Tuev Sued |
| Alicia Fernandez | SGS |
| Axel Friedrich | Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH |
| Horizon Gitano | University Science Malaysia |
| Juerg Gruetter | Gruetter Consulting |
| Anja Kollmuss | South Pole Carbon Asset Management |
| Maria Netto | Inter-American Development Bank |
| Michael Replogle | Institute for Transportation and Development Policy |
| Deysi Rodriguez Aponte | TRANSMILENIO S.A. |
| Camilo Rojas Garcia | CAF |
| Yasuki Shirakawa | Climate Consulting, LLC |
| Alan Silayan | CaFiS Inc. Philippines |
| Felicity Spors | The World Bank, CFU |
| Hanna Wang-Helmreich | Wuppertal Institute |
| Mitsuro Yajima | Almec Corporation |
| | |
| Philip Gwage | Meth Panel Chair |
| Carolyn Luce | SSC WG member |
| MP members | |
| Dinesh Aggarwal | |
| Jean-Jacques Becker | |
| Felix Dayo | |
| Alex Dunn | |
| Luis de la Torre | |
| Juerg Fuessler | |
| Sanjay Mande | |
| Jaime Martin | |
| Pablo Mello e Souza Fernandez | |
| A.K. Perumal | |
| Braulio Pikman | |
| Ciska Terblanche | |

Annex II: Agenda

Agenda

Practitioner Workshop on the Improvement of CDM Methodologies for Transportation

3rd March 2011

Wissenschaftszentrum Bonn

Ahrstr. 45, Bonn, Germany

| Time | Agenda item | Speaker |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:00 - 9:00 | Registration | |
| 9.00 - 9.15 | Welcome note | Massamba Thioye (UNFCCC) |
| 9.15 - 11.15 | Improvement of methodologies for mass rapid transport systems (AM0031 and ACM0016) <i>Main difficulties in applying the CDM methodologies, suggestions for methodology simplification and improvement</i> | Moderator: Lambert Schneider (UNFCCC) Victoria Novikova (UNFCCC) Juerg Gruetter (Gruetter Consulting) Daisy Rodriguez (Transmilenio S.A.) |
| 11.15 - 11.45 | Coffee break | |
| 11.45 - 13.00 | Improvement of small-scale transportation methodologies <i>- Engine conversion of tricycle taxis - 2/3 wheelers engine modification CDM project: monitoring fuel consumption/emission reductions</i> | Moderator: Gajanana Hegde (UNFCCC) Alan Silayan (CaFiS Inc.) Horizon Gitano (Universiti Sains Malaysia) |
| 13.00 - 14.00 | Lunch | |
| 14.00 - 15.30 | Improvement of small-scale transportation methodologies (continued) <i>- Technology/measures to prevent inefficient driving patterns to achieve fuel efficiency; - Introduction of electric vehicles - Programs to scrap old inefficient vehicles in exchange for new efficient vehicles</i> | Moderator: Carolyn Luce (SSC WG member) Yasuki Shirakawa (Climate Consulting, LLC) Yajima Mitsuro (Almec Corporation) Juerg Gruetter (Gruetter Consulting) Felicity Spors (The World Bank) |

| Time | Agenda item | Speaker |
|---------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 15.30 - 15.45 | Coffee break | |
| 15.45 - 16.30 | Development of a tool for freight transportation <i>Presentation and discussion of a draft tool</i> | Moderator: Willy Alarcon-Salas (UNFCCC) Lambert Schneider (UNFCCC) |
| 16.30 - 18.00 | Brainstorming session on the top-down development of CDM methodologies in transport | Moderator: Lambert Schneider (UNFCCC) |