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Item 8 (c) of the provisional agenda

Methodological issues under the Kyoto Protocol

Standardized baselines under the clean development mechanism

Views related to modalities and procedures for the development of standardized baselines from the clean development mechanism

Submissions from Parties and relevant organizations

1. The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, at its fifth session, invited Parties, intergovernmental organizations and admitted observer organizations to submit to the secretariat, by 22 March 2010, their views on the modalities and procedures for the development of standardized baselines that are broadly applicable, while providing for a high level of environmental integrity and taking into account specific national circumstances (decision 2/CMP.5, para. 26).

2. The secretariat has received four submissions from Parties. In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced* in the language in which they were received and without formal editing.

* These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

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* This submission is supported by Croatia, the Former Yugoslav Republic of Macedonia, Serbia and Turkey.

PAPER NO. 1: COLUMBIA

SUBMISSION ON VIEWS ON MODALITIES AND PROCEDURES FOR THE DEVELOPMENT OF STANDARDIZED BASELINES THAT ARE BROADLY APPLICABLE TO THE DEVELOPMENT OF CDM PROJECTS

The Republic of Colombia welcomes the opportunity to provide its views on modalities and procedures for the development of standardized baselines that are broadly applicable, providing for a high level of environmental integrity and taking into account specific national circumstances.

We recognize that, in general, standardized baselines could provide a straightforward means to demonstrate additionality of CDM project activities. When appropriate and sufficient information is available, and the organization and performance of sectors is homogenous, the development of such baselines could reduce individual project development costs. However, in our view, national circumstances related to scope, scale, geographical conditions, availability and confidentiality of information and sector and sub-sector behavior must be taken into account.

Differences in environmental conditions such as altitude, temperature, humidity, precipitation, manufacturing modalities and common practices must be reflected in the options to define the boundary of the standardized baseline calculation. Sectors, as currently defined by the IPCC, are extremely broad and include a wide range of activities and sub-sectors. We therefore consider, that when addressing issues such as standardization, this definition must be re-thought and a more flexible and in many cases narrower definition needs to be agreed.

As it stands, for a particular sector it could be relatively easy to establish a baseline covering all activities under its scope, but for some others, those specific conditions might implicate the need for an alternative grouping option. It is also the case that even for similar manufacturing processes, adaptation of technologies (which is very common in our local industries) might have an impact on any expected standardized parameter and a differential baseline should be created within a particular sector. Very often, sectors might have individual activities falling into two opposite categories, one comparable to the best practices in the world and one comparable to the worst. It is therefore important that host countries define when a standardized baseline is applicable and if it is the case, what it would be applicable to; the aggregation or grouping option that works for a realistic calculation and not in detriment of a large portion of the activities within the sector.

Availability of fuels makes also heterogeneous performances within one sector. One of the options for GHG reductions in energy intensive industries such as brick or cement manufacturing is using alternative fuels. We have factories distributed across the country using the available fuel in the region, usually coal. However, some of them could manage to start using agricultural by products to replace a portion of coal given that they are relatively close to crop lands. In this case, the baseline cannot be the same for those regions where alternative fuels are not available in a reasonable distance. Transport of biomass is highly expensive in the country. Take for instance rice husk, which demands significant space in transport vehicles and therefore more trips or higher capacities are needed.

Our experience with the Grid Emission Factor has shown that although the electricity sector is market oriented and information is collected and registered formally by the market operator, the specialized agency in charge of this calculation and CDM project developers have faced some difficulties in calculating the national emission factor. Recently, for instance, the electricity regulator in Colombia has issued a new resolution on confidentiality of information regarding bidding prices for each kWh. Before, all bid information was revealed after the bidding period. The resolution was adopted in order to promote market efficiency and therefore market participants remain anonymous for a certain period of time. Such regulations might impose additional time for the EF calculation, leading to additional costs for project developers. In those cases, where confidentiality leads to a delay on information, modalities and procedures should allow countries to apply some simplified calculations or alternative methodologies.

Finally, it is worth noting that availability of information relates directly to institutional arrangements such as industry associations, local or regional environmental agencies or small and medium companies representatives. For some sectors, such institutions are already well established and if market oriented, such as in the case of the Colombian electricity market, availability of information should not be a significant barrier. However, most sectors and subsectors need additional capacity to collect and register information both within the companies and at regional or national level to be able to establish any standardized baseline. Furthermore, there are sectors where a couple of large operations comply with the best standards and are in most cases the ones where information is readily available, but most of the operations in the sector are small and informal, and have much higher emissions in aggregate. If the standardized baseline is applied taking the legal operations into account, all opportunities for incentivizing the other operations into formality and reducing their emissions would be lost.

COLOMBIA 25th March2010

PAPER NO. 2: JAPAN

Japan's submission for standardized baselines

1. Background

In the registration process of CDM projects, it is often said that establishing a baseline for each project places significant burdens on project proponents. We believe it is meaningful to facilitate development of standardized baselines to alleviate these burdens as well as to further enhance efficiency and transparency of CDM registration process and improve regional distribution of the CDM projects. Considering that the CDM is one of the market mechanisms supported by private funding, it also contributes to enhancing predictability for the materialization of future projects.

2. Possible contents to be included in the guidance to the Executive Board

To facilitate the drafting work of modalities and procedures to be conducted by the Executive Board, the following contents should be included in the guidance by the CMP for the Executive Board.

A) Giving a mandate to approve the standardized baseline.

The CMP should adopt the guidance to encourage project proponents to submit proposals for standardized baselines and to mandate the Executive Board to accept these proposals for its review and approval.

B) Model baselines

The Executive Board should demonstrate that standardized baselines are technically feasible and workable by providing various models of the standardized baseline. Japan believes that the Executive Board has gained sufficient experience of project-based approaches over the past years and is in an appropriate position to establish some standardized baselines under its own initiative.

C) Default parameters

In specific project types or sectors, parameters which are broadly accepted and utilized in practice should be applied as benchmarks in establishing baselines. The Executive Board should actively cooperate with other international or regional organizations. These parameters should be conservative so as not to harm environmental integrities.

D) Regional distribution

Japan expects that a standardized baseline could be one of the possible solutions to address the problem of regional distribution of CDM projects. The cost and burden for establishing a baseline are more substantial in countries with less experience of CDM and less access to data which must be collected to rationalize the baseline. Modalities and procedures should be framed in a way so as to facilitate CDM projects especially hosted by countries with fewer than 10 projects.

PAPER NO. 3: SPAIN AND THE EUROPEAN COMMISSION ON BEHALF OF
THE EUROPEAN UNION AND ITS MEMBER STATES

**SUBMISSION BY SPAIN AND THE EUROPEAN COMMISSION ON
BEHALF OF THE EUROPEAN UNION AND ITS MEMBER STATES**

This submission is supported by Croatia, the Former Yugoslav Republic of Macedonia, Serbia and Turkey.

Madrid, 5 March 2010

Subject: Modalities and procedures for the development of standardized baselines (SBSTA)

The EU welcomes the opportunity to submit its views on “modalities and procedures for the development of standardised baselines that are broadly applicable, while providing for a high level of environmental integrity and taking into account specific national circumstances”.

Standardised baselines for specific project types could enhance the objectivity of identifying the baseline scenario, demonstrating additionality and calculating actual emission reductions, reduce transaction costs for project developers, improve environmental integrity, enhance regional distribution and improve certainty, predictability and transparency in the CDM. Standardised baselines are already used under the CDM and their increased use could contribute towards achieving these objectives.

1 Concept

A baseline is said to be standardised when it is based on uniform methods and procedures applicable to multiple projects, such as standardised parameters, including benchmarks, default factors or pre-crafted tools. Standardised baselines can be implemented in various ways. Standardisation means that key parameters to determine baseline emissions, project emissions or to establish additionality are not determined or selected on a project by project basis but that a standardised value or approach is applied to all projects meeting certain criteria e.g. all projects of a certain category, within a geographical boundary. Standardisation may be applied to the GHG emission intensity of a product or service. Baseline emissions can then be determined by multiplying the output provided by the project activity (e.g. the kWh or electricity fed into the grid) by a standardised emission intensity (e.g. a grid emission factor in t CO₂ per kWh).

The CDM has been successful in engaging developing countries in carbon markets and supplying a significant quantity of offset credits. However, some phases of the CDM project cycle prove to be relatively slow and uncertain for investors, and can be costly. There have also been concerns raised over the additionality of some projects, the environmental integrity and the regional distribution of CDM projects. Standardisation is a means of addressing some of these criticisms. Greater use of standardisation would help to:

- Speed up the CDM project cycle, reduce transaction costs and improve certainty, predictability and transparency for project participants: standardisation avoids the need for each project to have its baseline and additionality demonstration individually approved by the CDM Executive Board and could, in some cases, also avoid the need to determine the most likely baseline scenario through a step-wise procedure for each individual project.
- Improve environmental integrity, through offering a more objective approach to determining additionality and quantifying baseline and project emissions.
- Improve regional distribution of projects: Preparation of the PDDs would be simplified, reducing costs for project developers and increasing certainty for investors. A top-down (rather than project-by-project) approach to developing standardised baselines would help to reduce costs per project and increase access to the CDM in countries where small scale projects dominate. In cases where sector data is not available to the project participants, as is often the case in Least Developed Countries, the use of standardised default factor or parameters could facilitate project development.

According to past experiences standardisation has occurred mainly in the following two ways:

- Use of default emission factors or values: Many methodologies and tools provide project participants the opportunity to use simple default emission factors or values. A typical application is the use of IPCC default values. Most methodologies allow the project developers to choose between default values and more accurate project-specific values.
- Use of emission performance standards: Usually, the emission performance standards are calculated based on the emission performance of other activities or installations in the market which produce the same output. An example is the application of paragraph 48 (c) of the modalities and procedures for the CDM (Marrakesh Accords) where an emission intensity is based on the top-performers built in the most recent five years.

Greater use of emission performance standards will, however, require sufficient data from comparable activities or installations, which will in some cases be challenging to initially obtain. These challenges are discussed below (section 4).

Standardised baselines are already being implemented to some extent under the CDM (see Annex 1, section 6). The EU suggests broadening this, by making increased use of emission performance standards and conservative default values. Moreover, the EU suggests extending standardisation to other areas, covering the identification of the baseline scenario, project emissions and the demonstration of additionality.

Currently, reviews concerning the determination of additionality are one of the most important reasons for delays and additional costs in the registration of CDM projects. Standardised baselines could help simplify the process of establishing additionality: for example, provided a project achieves a specified performance standard, it is deemed additional. The use of standardised approaches to determine additionality could therefore substantially reduce the uncertainty for project developers and the cost of project development. In addition, it would improve equal and fair treatment of projects and make project registration more predictable.

2 Design issues

The development of standardised baselines is a tailor-made exercise in which the following issues have to be taken into account:

- parameters and methods suitable for standardisation;
- appropriate geographical scope or level of aggregation;
- environmental integrity and seeking a balance between over-crediting and under-crediting of projects and updating issues (in order to properly reflect changing circumstances).

2.1 Parameters and methods

Which parameters and methods could be standardised depends first of all on the specific project activity type for which they are developed. For example, a project for new grid-connected power plants could apply a standardised baseline grid emission factor, whereas for a programme involving distribution of energy efficient light bulbs the deemed savings approach could be applied. In the latter case the number of light bulbs would be multiplied by a conservative default value for the electricity savings per light bulb which again would be multiplied by a standardised baseline grid emission factor.

Standardised approaches could be used for the determination of baseline emissions and for additionality testing. For example, the Cement Sustainable Initiative (CSI) recently proposed a methodology for cement plants where different benchmarks are used to determine baseline emissions and to demonstrate additionality. In some instances, however, it might be appropriate to use the same threshold level for the additionality test and the determination of baseline emissions (e.g. AM0070).

Standardised approaches could be used for existing and for new installations. Performance standards, for example, could be also applied to existing installations where a less ambitious level could be used.

For each project activity type, the development of a standardised baseline starts with the question of which parameters are crucial in the determination of baseline emissions, emission reductions and/or additionality. For each of these key parameters, it can be assessed if they can be determined through a standardised method applicable to multiple projects.

2.2 Geographical scope

The level of aggregation can vary for each standardised parameter and may be based on different criteria, such as production processes, product types or geographical areas. The regional scope of emission performance standards should reflect the sector and technologies. In globalised markets in which technologies do not differ significantly between countries, performance standards could be built on a global database (for example large industrial installations like steel, aluminium, cement, etc.). However, in situations where regional differences are important and where the performance of plants varies between countries, or even within countries, a national or regional level could be used (e.g. for electricity generation, demand-side programmes for buildings, transport, etc.).

Standardised baselines will thus take into account regional differences in geography, availability of technologies and product use, where appropriate. This may lead to standardised baselines with different values for different geographical areas, the exact choice depending on country-specific circumstances. Even within one country, the parameters and values used can be different, for instance if local geography influences conditions such as temperature and wind speed if regional markets created differences in fuel costs of input availability or if technological configurations such as disconnected electricity grids require a regional differentiation. However, some technologies are less dependent on local circumstances and, therefore, the geographical area could include more than one country. For globalised industries, such as aluminium, with no significant differences between countries or regions, global default values or benchmarks are already used in current CDM methodologies.

In the case of emission performance standards it is therefore essential to define the appropriate control group that is used to determine the emission performance standard, taking into account various criteria such as the specific technical features, the size and the vintage of the installations.

2.3 Environmental integrity

In order to ensure that the use of standardised baselines does not result in crediting more emission reductions than have actually been realised, the concept of conservativeness has to be applied when determining standardised parameters. Conservativeness and transparency are explicitly required by paragraph 45 (b) of the modalities and procedures for the CDM (Marrakesh Accords) and, for this reason, various approaches to ensure conservativeness, such as the use of conservative adjustment factors or caps, are already applied.

Where a standardised baseline is integrated into a tool or approved methodology or introduced as part of a new methodology, we would expect this methodology to replace all approved methodologies within its area of application. In some cases, project developers would still have the option to submit their own methodologies or use project-specific values, if specific barriers would not allow them to use standardised methods.

It is crucial that standardised baselines are regularly updated to make sure that changing conditions (economic, technological, etc.) are taken into account. A clear process for updating, including the frequency, has to be agreed for each standardised baseline.

3 Existing experience

A number of examples of standardised baselines already exist both within the CDM and more widely e.g. for comparison of energy and/or emission performance of companies or products. Various initiatives have sought to standardise additionality demonstration, and in some cases baseline setting, with the use of performance standards, such as US Environmental Protection Agency's "Performance Standard", Voluntary Carbon Standard and others.

The experience gained in other contexts should be drawn upon when developing further CDM methodologies. Given this body of evidence, it is not necessary to start from scratch but instead learn from experience. This should involve making use of data that is already available, as well

as taking stock of existing CDM methodologies, determining their effectiveness and reforming them if they have proved inefficient.

Standardised baselines are permitted as an approach for determining a project baseline, in accordance with paragraph 48 (c) of the modalities and procedures for the CDM (Marrakesh Accords). As such, the SBSTA discussions around standardised baselines should not delay work on baselines under the Executive Board.

The following sections describe some examples in which type of project activities standardised approaches are already applied under the CDM.

3.1 Default emission factors

In calculating CO₂ emission factors and net calorific values, one frequently applied “Tool to calculate project or leakage CO₂ emissions from fossil fuel consumption” allows project developers to either use IPCC default values adjusted for uncertainty or to apply project-specific values based on measurements or information provided by the fuel supplier.

The “Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site” uses the IPCC first order decay model and the IPCC default values to calculate methane emissions from landfills. Baseline methane emissions are then calculated based on the quantity and type of waste treated under the project.

The frequently applied “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” includes an option to calculate emissions from electricity consumption in a very simple and conservative manner by multiplying the quantity of electricity with a simple global default emission factor for electricity.

The “Tool to calculate the emission factor of an electricity system” uses the emission intensity of existing power plants to calculate an average grid emission factor. In many cases, the Designated National Authorities (DNA) in the host country publish the emission factors for the electricity on a website and project developers can apply these values in their PDDs. The tool also provides default emission factors for different power generation technologies which can facilitate the calculation of the grid emission factor.

The use of default emission factors is common in CDM methodologies and projects. For instance, a few approved methodologies that use standardised grid emission factors (AMS-I.D. and ACM 0002) have each been used for over 1,000 projects each.

3.2 Emission performance standards

Some methodologies use the approach referred to in paragraph 48 (c) of the modalities and procedures for the CDM (Marrakesh Accords), by establishing a performance standard using 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”. This applies, for example, to the methodology AM0059 for the reduction of GHG emissions from primary aluminium smelters. A similar

approach, using the top 15 percent performers, is applied in methodology ACM0013 for new fossil fuel fired power plants.

Some methodologies use other approaches to establish emission performance standards or 'benchmarks'. For example, the methodology AM0059 for GHG emission reductions in the aluminium industry uses data published by the International Aluminium Institute (IAI) to calculate baseline emission intensity.

However, so far emission benchmarks have only been used in the CDM to a limited extent. There are currently around seven approved methodologies that use emission benchmarks for calculating baseline emissions. These are listed in Annex 1 (section 6) along with some key methodologies that employ standard grid emission factors.

The limited development of these methodologies to date is likely to be driven by difficulties in collecting the required data and the 'public good' nature of developing an emissions benchmark: subsequent projects can benefit from a standardised baseline but only the first project bears the data collection cost. As such, existing benchmark-based CDM methodologies have focused on sectors where a large body of data is already available (e.g., power, aluminium, cement sector).

The use of the majority of this type of approved methodologies has so far been relatively low, although this is understandable given that most methodologies were only approved in the last few years. So far, 18 CDM projects have been registered under emission benchmark methodologies, with a further 26 at validation stage. Registered projects are expected to generate around 22.4 Mt CO₂e of Certified Emissions Reductions (CERs) in 2012, with a further 27.5 Mt CO₂e potentially coming from projects at validation. Most of these projects fall under the approved consolidated methodologies ACM 0005 and ACM 0013.

4 Suitability

Although standardised baselines could be used in most sectors, in practice, the specific characteristics of some sectors make them more appropriate for standardised approaches than others. In general, sectors appropriate for benchmarking produce outputs or services that are similar in nature and in their production processes. Sectors best suited for emission benchmarks tend to be highly concentrated with limited geographical factors affecting the level of GHG performance (e.g. grid emission factors), and already have a large amount of available data.

Standardised baselines are very well suited for greenfield projects which produce a homogenous output (e.g. new renewable electricity generation projects). In this case, one can reasonably assume that the products would in the baseline be produced by other existing or new plants operating in the same market. Default emission factors or emissions benchmarks based on the performance of incumbent plants in the market can adequately reflect the GHG emissions that would occur in the baseline scenario. For greenfield plants, the approach in paragraph 48 (c) of the modalities and procedures for the CDM (Marrakesh Accords) can be applied. While this approach is already used in a number of methodologies, it could be applied more broadly under the CDM, e.g. in sectors such as cement, aluminium, steel or appliances. For other sectors where benchmarking is more difficult, alternative approaches (e.g. the use of conservative default parameters) could be used.

As benchmarking exercises within the European Union have shown (for example, in implementation of the Integrated Pollution Prevention and Control (IPPC) and Emissions Trading System (ETS) directives), greater use of emission performance standards will require good quality, reliable data from comparable activities or installations. Failure to fulfil such information requirements will cause benchmarks to inadequately represent plant performance in the different contexts in which they will be applied. It is therefore critical for the international community to be prepared to support national institutions in gathering and verifying such data in a carefully coordinated approach. For project types where data confidentiality is a concern, systems can be designed and managed independently to ensure adequate safeguards are in place. Data collection may take some time. There will therefore be a need to define appropriate target timeframes in order to ensure timely development of standardised approaches.

Standardised baselines are not suited for project types where baseline emissions are highly project-specific or where technologies and plants do not provide comparable products. This applies, for example, to projects which modify or retrofit existing plants. In this case, historical emissions, as per paragraph 48 (a) of the modalities and procedures for the CDM (Marrakesh Accords), are a reasonable proxy for baseline emissions.

The use of standardised baselines should be especially encouraged for projects whose transaction costs may represent a significant investment barrier. Standardised baselines should be developed in order to promote types of projects currently under represented, thus enhancing regional distribution.

5 Essential elements of modalities & procedures

Section 3 and Annex 1 shows that standardised baselines are already used under the CDM to some extent. Indeed, the current modalities and procedures already provide an adequate framework for establishing standardised baselines. In practice, such baselines have only rarely been proposed by project participants but in most cases have been developed top-down by the CDM Executive Board, drawing on work from various institutions. As indicated, there are several barriers for project participants to submit standardised baselines:

- Gathering of necessary data could be expensive and may – for confidentiality reasons – not be feasible for one project participant to collect;
- Once developed and approved, methodologies with standardised baselines are a public good, i.e. they could be used by everyone for free; public goods usually face underinvestment (from an economic efficiency perspective) therefore it may make sense that the development of such methodologies and the data gathering is co-ordinated nationally or by a central institution.

Standardised baselines therefore require a co-ordinated effort which involves different stakeholders.

In order to realise the full potential of standardisation of baselines to address regional distribution and transaction costs, the EU therefore proposes the following principles and process for the development of standardisation initiatives:

- Standardised baselines should be developed as a priority by the Executive Board, through its support structure, eventually by tasking the Methodologies Panel or a special purpose Panel, and in accordance with priorities set by the Board itself in its Methodological work plan; this plan must be reported to the Conference of the Parties as part of the annual report of the Executive Board;
- Any baseline proposed and approved by the Board must observe the overall principles of conservativeness and environmental integrity of the system, as outlined in the current modalities and procedures;
- Standardisation initiatives related to either additionality or baseline determination may also be proposed by DNAs or stakeholders, and should be subject to scrutiny by the Executive Board and its support structure;
- Standardised baselines and additionality benchmarks should be prioritised in underrepresented activities and regions, to be defined by the Executive Board. The Executive Board must detail its rationale for such prioritisation of sectors, basing itself on quantitative analysis of penetration and potential of CDM activities. Applicability and replicability of the proposed baseline should be road tested in underrepresented areas, prior to its deployment in project activities in more "mainstream" countries.
- Existing methodologies, most widely applied and applicable in underrepresented countries, must be revised by the CDM Executive Board, in order to ensure applicability of standardised baselines and additionality benchmarks.
- In accordance with current procedures for the development of methodologies for CDM, opportunity should be provided for early comment on the proposed standardised additionality benchmarks and baselines from the general public, with wide and pro-active engagement of DNAs, in particular from target countries and regions.
- Wherever possible, use should be made of the existing capacity of DNAs in data gathering and production and adaptation to local data of the proposed standardised baseline. Annex I countries and non-Annex I countries with relevant experience should be encouraged to provide capacity building in that respect.

6 Annex 1: List of CDM methodologies that use standardised baselines

The following table provides an overview of approved CDM methodologies which use standardised baseline approaches for calculating baseline emissions:

Number	Title	Focus	Type	Bench- mark	Pro- jects	Notes
AM 0070	Manufacturing of energy efficient domestic refrigerators	Additionality & Baseline	§ 48a	Top 20%	0	Under this methodology a benchmark approach is applied to establish the baseline scenario and demonstrate additionality.
ACM 0005	Consolidated Methodology for Increasing the Blend in Cement Production	Barrier test & Baseline	§ 48a		21	This methodology includes a barrier test to determine whether or not the project qualifies as first-of-its-kind, which requires the project to demonstrate that the market share of the technology used by the project activity is 5% or lower.
AM 0030	PFC emission reductions from anode effect mitigation at primary aluminium smelting facilities	Baseline	§ 48a		4	Data used published by IAI (International Aluminium Institute)
AM 0059	Reduction in GHGs emission from primary aluminium smelters	Baseline	§ 48a or § 48b	Top 20%	1	Data used published by IAI (International Aluminium Institute)
AM 0063	Recovery of CO2 from tail gas in industrial facilities to substitute the use of fossil fuels for	Baseline	§ 48a		1	
AM 0067	Methodology for installation of energy efficient transformers in a power distribution grid	Baseline	§ 48b		0	
ACM 0013	Consolidated baseline and monitoring methodology for new grid connected fossil fuel fired power plants using a less GHG intensive technology	Baseline	§ 48b and § 48c	Top 15%	17	Grid emission factor
AMS-1.D	Grid connected renewable electricity generation	Baseline			1.154	Grid emission factor
ACM 0002	Consolidated methodology for grid-connected electricity generation from renewable sources	Baseline	§ 48a or § 48b		1.081	Grid emission factor
ACM 0010	Consolidated methodology for GHG emission reductions from manure management systems	Baseline	§ 48b		5	This methodology uses a number of default values from IPCC2006 or US-EPA, whichever is lower
Notes:	§ 48a: Existing actual or historical emissions, as applicable § 48b: Emissions from a technology that represents an economically attractive course of action, taking into account barriers to investment § 48c: 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					

Source: <http://cdmpipeline.org>

Amongst these existing CDM ‘benchmark’ methodologies, detailed disaggregation by product type is not common. However, nearly half of the methodologies differentiate by technology or fuel type. The temporal threshold for the choice of peers for comparison is typically set as “most recent five years” but there are deviations such as “the most recent 10 years” (CO2 recovery in AM0063), and “the most recent year” (efficient refrigerators in AM0070).

Most of the methodologies set the geographical boundary as the host country or the grid system. However, the boundary is expanded for commodities traded beyond a national boundary (e.g. aluminium). Furthermore, a few methodologies define a minimum sample size for calculation of the benchmark, and require the boundary to be expanded until the sample size is met. The benchmark stringency is typically set as the average of the top 20% performers, in line with paragraph 48 (c) of the modalities and procedures for the CDM (Marrakech Accords). Benchmarks are normally updated only at the renewal of a crediting period, i.e. every seven years. Only a few methodologies require annual updating. Where this is required, a default value for the benchmark adjustment is provided in most cases.

Out of the CDM methodologies that use standardised baselines only one approved methodology (AM0070) explicitly uses a benchmark for both baseline emission calculation and additionality determination. However, no projects have yet been registered under this methodology, likely due

to the large amount of data required to determine the benchmark. AM0070 uses the same level of stringency (top 20% level) for the both purposes (single benchmarking). On the other hand, the recently submitted CSI cement benchmarking methodology explicitly differentiates the benchmark levels (dual benchmarking): it uses top 20% level for additionality demonstration, and top 45% level for baseline emissions calculation.

PAPER NO. 4: SRI LANKA

Early Submission of Information and Views

This has reference to your letter ODES/ COP15/10 dated 09th February 2010 regarding the early submission and views. I am pleased to submit the following views of the Government of Sri Lanka.

Modalities and procedures for the development of standardized baselines (SBSTA)

Sri Lanka would support matters indicated under the paragraph 23rd, 24th, 25th and 26th of FCCC/KP/CMP/2009/L.10.

PAPER NO. 5: UNITED STATES OF AMERICA

March 22, 2010

SUBMISSION BY THE UNITED STATES OF AMERICA

I. Introduction

The United States, as an observer Party to the Kyoto Protocol, is pleased to share its views and experience relevant to discussion by Parties to the Kyoto Protocol on “modalities and procedures for the development of standardized baselines” for the Clean Development Mechanism. The United States is following with interest the reform and evolution of the CDM, a process that has the potential to promote the CDM's role in the evolving global carbon market. This submission will highlight U.S. experience with the standardized approach and will present views on the benefits of applying such an approach within an offsets program.

A standardized baseline approach, also referred to as a multi-project baseline or performance standard approach, refers to creating consistent performance thresholds that can be applied across multiple offsets projects of the same project type in order to determine additionality and quantify baseline emissions or sequestration. Such standardized baselines are set at a specified geographic scope, which could be sub-national, national or international.

The United States government has been gaining experience with a standardized approach to offsets since the Activities Implemented Jointly pilot phase and initial negotiations on CDM rules. At that time, such work was focused on “proof of concept.” Since that early stage, the United States government has had the opportunity to apply a standardized, or performance standard, approach to the offsets component of the United States Environmental Protection Agency (EPA) Climate Leaders Program, a voluntary corporate greenhouse gas reduction program. Companies that belong to this program may use offset reductions to contribute to meeting their voluntary greenhouse gas reduction goals. EPA has developed the offset protocols that they must apply in order to use offset reductions under this program.

The United States, having gained experience with a standardized baseline approach to offsets, and recognizing that international experience with such an approach is limited, wishes to contribute to increased international understanding of such an approach. We hope this submission will be a useful tool that will enhance the SBSTA discussions on this issue.

II. Benefits of a Standardized Approach for Project-Level Offsets

The standardized approach decreases the subjectivity associated with constructing and evaluating individual project-specific arguments to determine additionality such as barrier and financial tests. The administrative body develops a performance standard by undertaking objective, rigorous data analysis in advance of receiving project submissions of that type. The body establishes a performance threshold to determine additionality and a standard by which to select and set a baseline for a given project type. The performance standard negates the need for both

producing and reviewing site-specific data and potentially subjective hypothetical scenarios, thereby creating a higher degree of certainty that approved projects are additional. A well-designed standardized baseline or performance standard approach enhances the environmental integrity of an offset system, particularly by minimizing the risks of either crediting non-additional projects or rejecting those projects that are truly additional.

A performance standard approach enhances the efficiency of an offsets program by decreasing the overall level of resources required. From the perspective of the program administrator, efficiency is improved because the performance standard approach allows for streamlined review, verification and approval processes, relative to a project-specific approach. Even though there is an additional upfront burden to construct performance standards, both time and cost are minimized in the longer-term because project submissions are more standardized, rather than containing a diverse set of tailored analyses that need to be evaluated. From the perspective of the project proponent, the accounting “rules,” including a pre-approved baseline, are known in advance, substantially reducing uncertainty. With the cost of development of performance standards borne by the program administrator in most cases, this standardized approach should also decrease the cost of project development and submission. Once a performance standard is developed, other projects of the same type may be compared against it. This is not an effort that needs to be repeated by each project developer, which, again, improves efficiency. Finally, there is enhanced transparency of review and decisions by the program administrator, which enhances fairness of the program.

III. The Performance Standard Approach as Applied under EPA Climate Leaders

EPA’s performance standard approach is built around seven elements:

- project type definition
- project boundary guidance (physical, temporal, and GHG components)
- regulatory eligibility requirements (GHG reductions resulting from offset projects must be surplus to regulation.)
- performance threshold for determining additionality
- requirements for selecting and setting baselines
- standardized monitoring options
- detailed accounting methodologies

Under the performance standard approach, each of these elements is standardized for each specific project type. We will discuss two of these elements (additionality determination and baseline setting) in greater detail below, as these are directly relevant to the request for input on standardized baselines.

Determining Additionality

EPA develops a performance threshold for each project type by examining data sets of similar, recently undertaken or planned practices, activities or facilities in a relevant geographic region. Data must be recent (so as to best represent current and future practices) and disaggregated

regionally, temporally, and by size, if appropriate, to determine business-as-usual and superior practices. Experts in each project type, including experts from the national GHG inventory team and from relevant voluntary GHG reduction programs, gather and analyze this data to determine the most representative sample population, the optimal level of aggregation, and finally, develop the performance threshold.

The performance threshold represents a level of performance that is significantly better than average compared with similar recently undertaken practices or activities in a relevant geographic area. This may be determined with respect to emission reductions or removals, or technologies or practices. A project proponent must compare the performance of a given project against the corresponding project-type specific performance threshold to determine if the project is additional. Any project that meets or exceeds the performance threshold is considered “additional” or beyond that which would be expected under a “business-as-usual” scenario.

To ensure that the additionality determination continues to be valid, updates must be made to the performance thresholds for individual project types on a periodic basis. This ensures that continuous performance improvements, such as market trends, technology developments, and land use trends, are reflected in updates to the data set.

The performance threshold may be presented in the form of an emissions rate, a technology standard, or a practice standard. The threshold is based on similar project activities undertaken within a recent historical timeframe. This determination is made by EPA, based on the characteristics of the data examined. See Annex Figure 1 for an illustration of how a performance threshold is set.

Examples of performance thresholds

Emissions rate. The emissions rate performance threshold represents an emissions rate determined to be, through EPA analysis, above business as usual in the relevant sector. Under Climate Leaders, this type of standard is used to determine additionality for commercial boilers, bus fleet upgrades, and end use of biogas methane project types. For commercial boilers, for example, the performance threshold is set at the top 20th percentile and is based on the energy efficiency and resulting CO₂ emissions of commercial boilers installed recently. A national spatial area was used to develop the performance thresholds for commercial boiler retrofit projects, while the temporal range for the thresholds is based on the performance of commercial boilers operating in the United States between 1990 and 2003. Across the United States, there are two fuel-specific thresholds for retrofits; one for gas-fired and one for oil-fired boilers based on the thermal efficiency and subsequent emissions rate. See Figure 2 which illustrates the regional breakdown of fuel use by boilers, with performance thresholds equal to the top 25th, top 20th and top 10th percentiles identified. Figure 3 provides background information on how boiler efficiency relates to emissions.

Practice-based. The practice-based performance threshold is developed through the analysis of practices for relevant activities to determine which practices are business-as-usual and which are beyond business as usual for a typical facility, management practice, or activity. This type of

standard is used to determine additionality for landfill gas collection and combustion, manure management, and afforestation/reforestation project types. For the manure management project type, for example, data on manure management practices across the United States were evaluated, and it was determined that in all regions examined, and across all farm sizes, only a very small minority of farms had anaerobic digesters, and therefore, this practice is considered additional.

Technology-based. The technology rate performance threshold represents the use of a technology determined through EPA analysis to be better than business-as-usual in terms of emissions performance in the relevant sector. Under Climate Leaders, this type of standard is used to determine additionality for the industrial boiler project type. For this project type, a project developer must add at least one emissions-reducing technology listed in the methodology to the boiler system to exceed the performance threshold, thus making the project additional. The technology-based threshold was selected because the efficiencies of industrial boiler applications in the U.S. are dictated by operational and emission requirements making no single emissions performance value applicable for the variety of industrial boilers in use in the U.S.

Selecting and Setting a Baseline

Baselines may be set (a) at a pre-project emission or sequestration level, (b) at the performance threshold level, or (c) another level deemed appropriate for a given project type. If data analysis reveals that a continuation of current practice is business-as-usual, the pre-project emissions level may be used as the baseline. Setting the baseline equal to the performance threshold may be more conservative and may be more appropriate in cases where technologies and practices are likely to change. For example, Climate Leaders uses two different baselines for commercial boilers—one for retrofits, and one for new boilers. For projects involving the retrofit or early replacement of a commercial boiler, the baseline is equal to the average annual emissions of the boiler prior to retrofit in Kg CO₂ equivalent. For projects involving procurement of a new boiler, or the replacement of a boiler at the end of its lifetime, the emissions rate of the performance threshold is used as the baseline. Actual GHG emission reductions from the project are calculated by the project proponent, using project generated data, collected in accordance with EPA monitoring guidelines for the specific project type.

IV. U.S. EPA Lessons Learned

We have highlighted the multiple benefits of a standardized approach to baselines, but there are challenges that must also be highlighted. These are challenges, however, that EPA and other organizations and regulatory agencies here in the United States have already encountered and, for the most part, overcome. Drawing upon these lessons should enhance the application of standardized baselines under the CDM to minimize the challenging aspects of applying such an approach.

Data challenges will arise but can be addressed. Obtaining and analyzing a representative dataset is often the biggest challenge associated with applying a performance standard approach. Often, one consistent, complete dataset for the entire country is not available. Therefore, different datasets may need to be used in combination, but in doing so these must be reconciled

to ensure consistency. In EPA's experience, datasets or multiple datasets for the entire country did not exist for certain project types. In these cases, assessments were necessary to determine if the applicability of a dataset for a particular state/region was representative of current practices in the relevant sector. In the U.S. this was the case with commercial boilers. It may also be necessary to combine different data sets for different aspects of the performance standard. This was the case, for example, with the U.S. EPA afforestation/reforestation methodology, which applied different U.S. Department of Agriculture data sets for land-use conversion data and carbon stock changes associated with those land-use conversions.

Updating of performance standards requires continued commitment to data collection. As stated previously, baselines should be revisited and adjusted, perhaps periodically or annually, depending on the project type and other factors. A particular challenge on this front is when, over time, data is not collected consistently and/or completely. This was a challenge faced by U.S. EPA when analyzing more recent land-use conversion data. In developing countries, the key data collection systems may be in early stages of development and can take into consideration the application in offset markets. Data can be collected in a way that is suitable for estimating greenhouse gas emissions and sinks for the development of standardized baselines.

The performance standard approach is amenable to a diverse set of project types. One main reason for this is that there are different categories of performance standards that can be applied, as described earlier in this submission. The administrator developing the standard has the flexibility to decide which type of performance standard to apply, depending on the unique aspects of a sector, particularly the types of data available. This flexibility allows the approach to work not only in the most homogeneous sectors, where standardized baselines may be more straightforward, but also more heterogeneous sectors where there might be a range of potential counterfactual situations. We have found it is still possible to define a typical baseline scenario for project types in those more heterogeneous sectors, such as land use and forestry.

V. Application in Other Programs in the United States

The use of performance standards has become the preferred approach in both compliance and voluntary offset programs in the U.S. The Regional Greenhouse Gas Initiative (RGGI) is the first mandatory, market-based effort in the United States to reduce greenhouse gas emissions. Projects must meet category-specific benchmarks and performance standards designed by RGGI to ensure that approved offset projects represent activities that significantly exceed standard market practice. The Climate Action Reserve (The Reserve) is a voluntary national offsets program in the U.S, with 228 project account holders and 130 listed projects. The Reserve develops standardized, performance-based project protocols that provide specific guidelines for calculating, reporting and verifying greenhouse gas emissions reductions for offset projects. The Reserve has ten such approved protocols for projects in the U.S. and Mexico.

In addition to existing U.S. programs, recent proposed greenhouse gas cap and trade legislation in the U.S. generally have included requirements for a performance standard approach to offsets. This is true of both the House-passed Waxman-Markey bill, and the more recently proposed Kerry-Boxer bill, which passed the Senate Environment and Public Works Committee. Both require a standardized methodology for determining additionality, and under both programs, the

offsets program administrator would be required to develop standardized methodologies for activity baselines reflecting a conservative estimate of business as usual, and standardized quantification methodologies.

VI. Initial Views on Applying a Performance Standard Approach in Developing Countries

Benefits to developing countries

Using a performance standard approach can assist in the achievement of many goals of an improved global carbon market.

The use of the performance standard is likely to result in a higher volume of projects and improved access by all carbon market participants, particularly LDCs with limited CDM projects at present. This is because most of the work for a given project type can be done by the administering body and other entities as appropriate, requiring fewer in-country resources for the development and submission of any individual project.

The objectivity of the performance standard alleviates much of the uncertainty associated with the current project approval process. This improves transparency and predictability of approval decisions, which would be expected to enhance flow of investment to developing countries.

Developing countries are likely to have more input into CDM processes with a performance standard approach. The collection of data at a higher-level of aggregation than project-scale and setting of baselines in a coordinated manner should allow developing countries to play an enhanced role in data collection and developing performance standards for particular project types in their countries.

Another benefit to developing countries is that the data collected and the related analyses for the development of multi-project baselines should prove useful for other purposes aside from project-level crediting, such as GHG inventory improvements and evaluation of other potential GHG mitigation strategies.

Data acquisition

Although there has been much experience to date in developing and implementing an offsets program using the performance standard approach, this experience is largely confined to the U.S. domestic market. Data acquisition has been a challenge even in the U.S. case, where a domestic entity is acquiring and analyzing domestic data. It can be expected, therefore, that there may be significant challenges associated with data gathering if the performance standard approach is utilized to assess additionality of projects in developing countries. Efforts to improve GHG inventories, already underway in a number of developing countries, will certainly strengthen the ability to develop performance standards for project-level offsets in those countries. Carbon credits provide additional incentive for developing countries to improve greenhouse gas accounting systems, the basis for market readiness. It is likely that global partnerships such as Methane to Markets, the Cement Sustainability Initiative, and others can serve as sources for data relevant to the development of performance standards.

Appropriate entity for developing the performance standards

An additional key consideration for applying a performance standard approach in developing countries is determination of the appropriate entity or entities for developing, reviewing and approving standardized baselines. Performance standards may be sub-national, national, or regional depending on the project type. Within the U.S., the preferred approach has been for a centralized institution to develop the performance standards. In the case of a global program, it may be more feasible to have the centralized body develop clear requirements for developing performance thresholds. Performance thresholds, along with the relevant data sets used, for a given geographic area could then be submitted by external groups or individuals, such as industrial associations, banks, host countries and/or project developers. The centralized body could then review and validate the standard.

Suggested References:

World Business Council for Sustainable Development and World Resources Institute, 2005. Greenhouse Gas Protocol: The GHG Protocol for Project Accounting. http://pdf.wri.org/ghg_project_accounting.pdf

U.S EPA Climate Leaders Offsets Guidance. <http://www.epa.gov/climateleaders/resources/optional-module.html>

Tellus Institute, Stockholm Environment Institute, Stratus Consulting. 1999. Evaluation of Benchmarking as an Approach for Establishing Clean Development Mechanism Baselines. Prepared for U.S. EPA.

Tellus Institute, Stockholm Environment Institute. 2000. Key Issues in Benchmark Baselines for the CDM: Aggregation, Stringency, Cohorts, and Updating. Prepared for U.S. EPA.

Annex I. Figures

Figure 1. Establishing the Performance Threshold

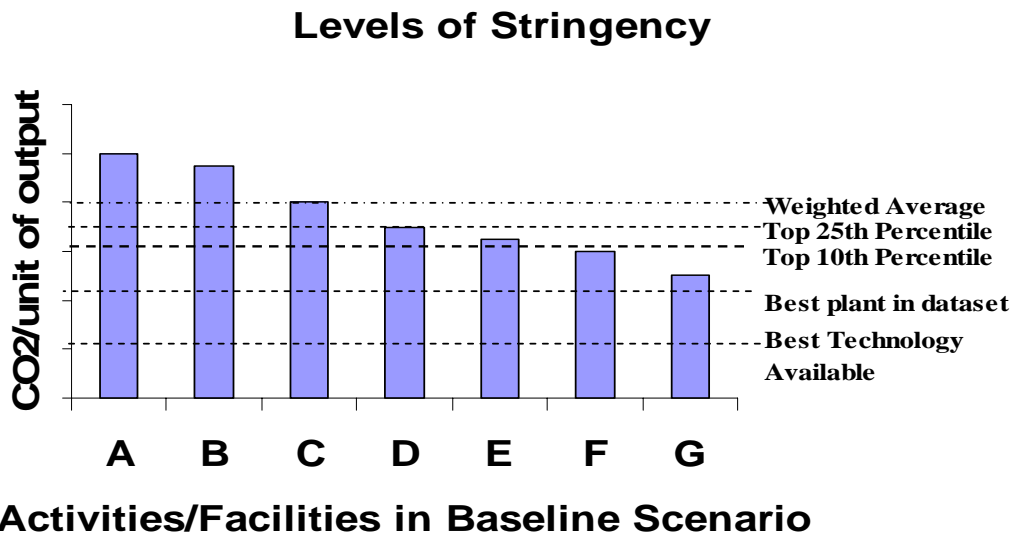


Figure 2. Commercial Boiler Performance Thresholds Based on Emissions Intensity Criteria (1990- 2003 CBECS Data)

	Percentage of regional use in boilers - 1990-2003			
	North-east	Mid-west	South	West
Fuel Oil Boilers	7.9%	1.7%	0.6%	1.2%
Fuel Gas Boilers	43.0%	46.1%	35.6%	43.9%
Electric Boilers	49.1%	52.2%	63.8%	54.8%
Estimated boiler efficiency at 25 th percentile	82%	82%	81%	82%
Estimated boiler efficiency at 20 th percentile	83%	83%	82%	83%
Estimated boiler efficiency at 10 th percentile	85%	85%	84%	85%
Performance threshold at 25th percentile (KgCO₂/MMBtu)	64.7	64.7	65.5	64.7
Performance threshold at 20th percentile (KgCO₂/MMBtu)	63.9	63.9	64.7	63.9
Performance threshold at 10th percentile (KgCO₂/MMBtu)	62.4	62.4	63.2	62.4

Source: Energy Information Administration, 2003 Commercial Buildings Energy Consumption Survey.

Figure 3. Relationship Between Boiler Thermal Efficiency and Emissions

Boiler Thermal Efficiency	Emissions per Heat Output (KgCO₂/MMBtu)
80%	66.3
81%	65.5
82%	64.7
83%	63.9
84%	63.2
85%	62.4
86%	61.7
87%	61.0
88%	60.3
89%	59.6
90%	59.0
91%	58.3
92%	57.7
93%	57.1
94%	56.4
