



## CDM: Proposed new methodology expert form (version 04)

*(To be used by methodology experts providing desk review for a proposed new methodology)*

Name of expert responsible for completing and submitting this form

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Related F-CDM-NM document ID number

NM0120

*Note to those completing this form, as applicable: Please provide recommendations on the proposed new baseline and monitoring methodologies based on an assessment of CDM-NMB and CDM-NMM and of their application in sections A to E of the draft CDM-PDD, desk reviews and public input. Please ensure that the form is entirely filled and that arguments and expert judgements are substantiated.*

### A. Evaluation of the proposed new methodologies by desk reviewers:

#### I. Evaluation of the proposed new baseline methodology:

Title of new baseline methodology:>> Demand-side electricity management for food retailers, supermarkets, hypermarkets, shopping centers and other similar commercial activities

i. Conditions under which this methodology is applicable to other potential projects (e.g. project type, region, data availability):

>> The methodology is applicable to

- (i) Projects where demand side management is undertaken in food retailers, supermarkets, hypermarkets, shopping centers and other similar commercial activities.
- (ii) Projects where it can be demonstrated that demand side management efforts result in reduction of electricity consumption.
- (iii) Regions where data is available to estimate the electricity norm for such commercial activities in terms of sales area.
- (iv) Regions where data is available to estimate the various variable values needed for estimating emission reduction.
- (v) Regions where there are no regulations or restrictions on use of electricity in commercial activities.

ii. Strengths and weaknesses of the methodology:

>> **STRENGTH:**

It is simple in application and not very data intensive.

**WEAKNESS:**

It can lead to a situation where business as usual reductions are claimed as credits.

The electricity consumption reduction due to project activities is not tied to the specific demand side management actions.

iii. Any changes needed to improve the methodology:

a. Minor changes:>>

b. Major changes:>>

(i) The methodology should include some means of ensuring that the specific demand side management measures proposed are demonstrated to be not the baseline scenario measures.

(ii) The methodology should include some means to demonstrate that the reduction in electricity consumption is not associated with reduction in output. Energy efficiency is defined as "lower use of energy per unit of output". This aspect in the present methodology is presently demonstrated through the sales area. But there are possibilities that end use energy demand might reduce without the reduction in sales area.

(iii) The leakage component of methodology needs to improved as it is dealt in a very cursory manner.

## II. Evaluation of the proposed new monitoring methodology:

Title of new monitoring methodology: >> Demand-side electricity management for food retailers, supermarkets, hypermarkets, shopping centers and other similar commercial activities

i. Conditions under which this methodology is applicable to other potential projects (e.g. project type, region, data availability):

>> The methodology is applicable to

- (i) Projects to which the corresponding baseline methodology is applicable (i.e., all the applicability conditions for the baseline methodology are met).
- (ii) Regions where data is available from official or other verifiable sources to estimate the various variable values needed for estimating emission reduction.

ii. Strengths and weaknesses of the methodology:

>> STRENGTHS

(i) The methodology is well designed to use verifiable data for application of the corresponding baseline methodology.

WEAKNESS

- (i) The methodology lacks in proper QA/QC measures for data monitored on the project site.

It is incomplete in terms of not monitoring certain data (as mentioned in data gaps) which is important for the baseline methodology.

iii. Any changes needed to improve the methodology:

a. Minor changes:>>

b. Major changes:>>

- (i) Provide QA/QC procedures for the monitored data.
- (ii) Identify parameters to be monitored for data mentioned in the "data gaps".
- (iii) Reflect the changes in the monitoring methodology for the changes suggested in the baseline methodology.

## B. Details of the evaluation of the proposed new methodology by the desk reviewer:

I. Proposed new baseline methodology (*specify title here*): >> Demand-side electricity management for food retailers, supermarkets, hypermarkets, shopping centers and other similar commercial activities.

(1) Short description of the methodology, including an assessment of which approach from paragraph 48 of the CDM modalities and procedures was used:

a) Describe the methodology:

>>

(a) The baseline scenario is continuation of electricity consumption at historical level, previous to the

implementation of proposed project activity, subject to prove that the proposed project activity is additional.

(b) The project additionality is assessed using “Tool for the demonstration and assessment of additionality”.

(c) Baseline is emission associated with baseline electricity consumption (adjusted for transmission and distribution (TD) losses), estimated as follows:

- Estimate the average value of the quotient between electricity consumption and sales area, using latest three years historical data available at the start of the proposed project activity.
- Multiply the coefficient with (1+ TD losses expressed as fraction).
- Multiply the product with sales area monitored during each year of the project activity.
- Multiply with emission factor (EF) for each source of electricity.
  - Grid electricity – method described in ACM0002.
  - Electricity from specific power plant – estimated as a function of emission factor for fuel used and the efficiency of the power plant. This approach is used because baseline is a hypothetical situation and, therefore, there will be no actual consumption of fuel.

(d) Project emissions are estimated as sum of emissions from (i) electricity consumed within the project boundary; and (ii) any other fuel consumed within the project boundary.

(e) Leakage could result from increase in fuel and electricity outside project boundary due to project activities. Leakage is to be estimated on case to case basis.

*b) State the approach selected:*

>>48(a) Existing or actual emissions, as applicable.

*c) Indicate (in summary form) why the approach selected is the most appropriate. Please provide your expert judgement on the appropriateness of the selected approach to the project category:*

>>The description of demand side efforts that will be covered under the project category has not been adequately described to make a judgement on the appropriateness of the selected approach.

**(2) Basis for determining the baseline scenario:**

*a) State whether the documentation explains how the baseline scenario is to be chosen and identified:*

>> The baseline scenario is stated to be "continuation of electricity consumption (at levels observed) previous to project activity implementation".

*b) State the basic underlying rationale for algorithms/formulae used (e.g. marginal vs. average basis) (see also section 4 below):*

>> The emissions, both, in the project and the baseline scenario, result from electricity consumption and fuel burned within the project boundary. Estimation of electricity consumption is based on average electricity consumption per unit sales area within the project boundary. The emission factor for grid purchased electricity is estimated using method described in ACM0002. The emission factor for electricity from specific generation is estimated as function of emission factor for fuel used and the efficiency of the generation source. The fuel consumption related emissions are based on monitored fuel consumption and corresponding emission factor.

*c) State whether the documentation explains how, through the use of the methodology, it can be demonstrated that a project activity is additional and therefore not the baseline scenario. If so, what are the tools provided by the project participants?*

>> The methodology uses "Tool for demonstration and assessment of additionality" to assess additionality.

*d) State whether the basis for determining the baseline scenario and for assessing additionality is appropriate and adequate:*

>> The basis of determining baseline scenario is not adequately justified. The methodology justifies the baseline scenario as "continuation of electricity consumption previous to project activity implementation" by stating that the only alternative to demand side management projects is the existing situation because "companies don't consider different alternative options while considering demand side management programs". In absence of precise description of kind of demand side management activities that are envisaged such broad generalization might not be appropriate. The consideration of alternatives within each sub-set of demand side management activity depends on prevailing practices as well as available options. Since commercial organizations work on the principle of cost minimization, non-consideration of various alternatives might not be a very realistic assumption.

**(3) Assessment of the description of the proposed methodology and its applicability**

*a) State whether the methodology has been described in an adequate manner:*

>> No. The methodology uses a very aggregative form to represent energy use and doesn't discuss the energy demand sources where demand management is to be implemented. For example, the methodology doesn't highlight that electricity is the only source of energy used to meet the energy demand originating from lighting, heating and cooling needs in the baseline. This becomes clear only from the formulae used for estimating the baseline. The methodology is silent on the fact whether electricity from a specific source is purchased or generated by the owners of the commercial activity. The methodology also doesn't explain how carbon credits arising purely from switch from high carbon electricity to low carbon electricity, without changing the total electricity need, will be avoided.

The methodology doesn't discuss how increase in the sales area under the project scenario would be addressed.

The methodology is silent on the issues whether the demand side management measures include only end use device related measures or other measures such as display layout of different products put up for sale, structural changes in the sales area, etc.

The methodology envisages situation where electricity as source of energy in end use device is replaced by other fuels. But it fails to address the issue how would a distinction be made between purely a fuels switch

related measure motivated by reducing electricity consumption and one that is motivated by the energy efficiency gain.

*b) State whether the proposed methodology is appropriate for the referred proposed project activity and the referred project context (described in Sections A - E of the draft CDM-PDD and submitted along with CDM-NMB):*

>> As described the methodology is applicable to the referred proposed project activity.

As the methodology is silent on how to address change in sales area, from that perspective the appropriateness of application to referred proposed project can't be evaluated. As noticed from data presented in Table 6 of CDM-PDD, the sales area increases post implementation. It is not clear whether this is due to the fact that the existing sales area, which was earlier not under any demand side management, is bought under the demand side management program or newly built sales areas.

Also, in the referred proposed project it is stated that between 1 June 2001 to February 28, 2002 electricity consumption was cut to meet the regulation. It is not clearly stated whether the cut in consumption was by limiting the service provided (i.e. reducing the number of hours the business operated) or through demand side management measures. If it was through demand side measures, then the baseline electricity consumption should be represented by the consumption during the regulation period and the post regulation period previous to start of project. Using earlier data, for period prior to regulation, inflates the baseline electricity consumption. It is also not clear whether the demand side management put in place during the regulations are the once that are being claimed as the proposed CDM project or only efforts additional to that made during the regulation period are proposed as CDM project.

The data from CDM-PDD indicates that LPG consumption remains unchanged over the period 2001 (start of proposed project is indicated as 2004) to end of the credit period for the proposed project. The proposed project states that part of electricity reduction will be achieved by use of LPG in ovens. But this doesn't seem to be reflected from the data. Partially this problem arises because the methodology uses aggregate energy consumption index without the requirement for detailing exact measures taken for demand side management. It apparently seems that LPG consumption in ovens in place of electricity was introduced as a response to the government regulation for reduction in electricity consumption during June 2001 to February 2002 period. If that is the case, is it suggested that since the regulations have been lifted, the owners will revert to use of electricity and, therefore, the continuation of LPG use is dependent on CDM benefits? The methodology doesn't highlight such an aspect, therefore, the appropriateness of application of the methodology to the referred proposed project can not be evaluated.

*c) State whether the application of the methodology could result in a baseline scenario that reasonably represents the anthropogenic emissions by sources of greenhouse gases that would occur in the absence of the proposed project activity.*

>> The methodology could result in inappropriate baseline scenario under the following situations:

- (i) where new sales area is added to the project boundary and the electricity consumption norm of existing sales area is not a true representative for the new sales area.
- (ii) where as long as the project activities are able to demonstrate that post implementation (of the proposed project activities) the GHG emissions decrease, even though the measures used to achieve the reduction might be a common practice. This arises for the reason that the methodology doesn't require detailing of specific demand side management activities, so there is a possibility that even measures that are common could be included under proposed CDM project.

*Please explain:*

>> see explanation above.

#### **(4) Assessment of algorithms/formulae and type of data needed:**

*a) State whether the description of the methodology includes algorithms and generic formulae that can be applied to other potential project activities (if not, the proposed new methodology will be considered as a project-specific methodology):*

>> yes.

*b) Explain the spatial scope of data used to determine the baseline and whether the scope is appropriate:*

>> Project specific data is used for estimating baseline electricity intensity per unit sales area.

Grid specific data from grid operators is used for estimating TD losses.

Grid specific data is used for estimating grid electricity emission factor as defined in the ACM0002.

The spatial scope is appropriate, except for data used for efficiency parameter of specific source of electricity generation. This data will be sourced from technical literature and, therefore, it is hard to assess the spatial scope of the data.

Further, IPCC default value will be used for fuel used in specific electricity generation source. The effort should be for using country specific data unless it is not available.

*c) Explain the vintage of data used (in relation to the duration of the project crediting period) and whether the vintage of data is appropriate, indicating the period covered by the data:*

>> Most recent three years historic data is used for estimating electricity intensity per unit sales area. TD data will be sourced annually from the grid operator during the credit period. The vintage of data used for estimating grid electricity emission factor is as per ACM0002.

The vintage of data is appropriate, except for data used for efficiency parameter of specific source of electricity generation. This data will be sourced from technical literature and, therefore, it is hard to assess the vintage.

#### **(5) Definition of the project boundary related to the baseline methodology:**

*a) State how the project boundary is defined in terms of:*

*i) Gases and sources*

>>CO<sub>2</sub>

*ii) Physical delineation*

>>The physical boundary of facilities where the demand-side management activities are implemented and all power generation sources connected to grid that supply's electricity to the project locations.

*b) Indicate whether this project boundary is appropriate:*

>>The project boundary is appropriate, except for the fact that it is not fixed and dynamically one can keep adding or subtracting commercial facilities within the project boundary over the crediting period.

#### **(6) Key assumptions/parameters (including emission factors and activity levels) and data sources:**

*a) List the implicit and explicit key assumptions. Identify those, if any, which are problematic and explain:*

>>No explicit assumption has been listed in the methodology.

**IMPLICIT ASSUMPTION:**

- (i) The electricity intensity across the different types of "food retailers, supermarkets, hypermarkets, shopping centres and other similar commercial activities" is same and independent of type of products sold from these outlets. This assumption is problematic, because if this assumption doesn't hold then the shift in distribution of types of commercial activities covered by a proposed project alone could result in change in energy consumption.
- (ii) The new commercial facility added to the project (as the energy consumption is indexed to sales area of commercial activity, the sales area is based on project monitored data, methodology will be

applicable to projects where new areas are added to the project over the crediting period), will have the same baseline as that estimated for the existing commercial facilities. This assumption too is problematic, because one could, hypothetically speaking, claim credit for new commercial areas with energy consumption levels that are business as usual.

*b) State whether the key assumptions are arrived at in a transparent manner:*

>>No

*c) Give your expert judgement on whether the assumptions/parameters are adequate:*

>>Assumptions and parameters are not adequate.

*d) Indicate which data sources are used and how the data are obtained (e.g. official statistics, expert judgement):*

>> Baseline

(i) Electricity consumption norm is based on historical electricity consumption and total sales area of the commercial activity.

(ii) Total commercial area data is based on monitored data during the project operation.

(iii) TD loss data is based on operators of the grid or other official sources.

(iv) Grid electricity emission factor is estimated using data from sources as described in ACM0002

(v) Emission factor for specific non-grid generation sources is based on data on efficiency of the generator from technical literature and Oxidation and Fuel emission factor from IPCC sources.

#### Project Emissions

(i) Electricity consumption from grid and non-grid sources, and fuel consumption (other than operating the electricity generator) from monitored data.

(ii) TD losses from grid operator or other official sources.

(iii) Grid electricity emission factor is estimated using data from sources as described in ACM0002

(iv) Emission factor for specific non-grid generation sources is based on data on efficiency of the generator from technical literature and Oxidation and Fuel emission factor from IPCC sources.

(v) Emission factor for fuel used on-site (for other than electricity generation purposes) from IPCC sources.

*e) Give your expert judgement on whether the data used are adequate, consistent, accurate and reliable:*

>>No.

*f) State possible data gaps:*

>> The data used to estimate the project emission from fuel used on-site is not described adequately. The methodology only states that it will be estimated using monitored data and technical literature.

The efficiency data used for estimating source specific electricity related emission will be sourced from technical literature. It is not explained why the data can't be used for the particular plant in question or from the supplier of the equipments.

#### **(7) Assessment of uncertainties:**

*a) State whether the methodology includes an assessment of uncertainties regarding:*

*i) The basis for determining the baseline scenario:*

>>No

*ii) Algorithms/formulae:*

>>No



iii) *Key assumptions:*

>>No

iv) *Data:*

>>No

b) *State whether the uncertainties presented are reasonable:*

>>No.

#### **(8) Leakage:**

a) *State how the baseline methodology addresses any potential leakage due to the project activity.*

>>The methodology states that leakage should be investigated on case by case basis and reported if found significant.

b) *Indicate whether the treatment for leakage is appropriate and adequate:*

>>No.

#### **(9) Transparency and “conservativeness”:**

a) *Indicate whether the baseline methodology was developed in a transparent way:*

>>No.

b) *State whether the baseline methodology is conservative:*

>>No.

#### **(10) Potential strengths and weaknesses of the proposed baseline methodology (please explain):**

>> **STRENGTH:**

It is simple in application and not very data intensive.

**WEAKNESS:**

It can lead to a situation where business as usual reductions are claimed as credits.

The electricity consumption reduction due to project activities is not tied to the specific demand side management actions.

#### **(11) Other considerations, such as a description of how national and/or sectoral policies and circumstances have been taken into account (please explain):**

>> The methodology is developed assuming that there are no national and/or sectoral policies and circumstances that influence the decisions or impose obligations to undertake the proposed project activity. This is considered to be true in most of the cases because, normally, electricity consumption is not restricted nor regulations imposed by any local legislation.

#### **(12) Applicability of the proposed methodology across project types and regions (please indicate):**

>> The methodology is applicable to

- (vi) Projects where demand side management is undertaken in food retailers, supermarkets, hypermarkets, shopping centers and other similar commercial activities.
- (vii) Projects where it can be demonstrated that demand side management efforts result in reduction of electricity consumption.
- (viii) Regions where data is available to estimate the electricity norm for such commercial activities in terms of sales area.
- (ix) Regions where data is available to estimate the various variable values needed for estimating emission reduction.



- (x) Regions where there are no regulations or restrictions on use of electricity in commercial activities.

**(13) Any other comments:**

*a) State whether any other source of information (i.e. other than documentation on this proposed methodology available on the UNFCCC CDM web site) has been used by you in evaluating this methodology. If so, please provide specific references:*

>>

*b) Indicate any further comments:*

>> The CDM-PDD of the project states that the data used in undertaking implementation of methodology for the referred proposed project is "just an example" and the numbers will be revised for the final version of the PDD. Though it is true that the CDM-PDD submitted is an example demonstration of the methodology but in that case "Question 3b" seems a bit redundant. This issue needs to be clarified by the CDM Executive Board.

II. Proposed new monitoring methodology (*specify title here*): >> "Demand-side electricity management for food retailers, supermarkets, hypermarkets, shopping centers and other similar commercial activities"

*In respect of the proposed new monitoring methodology, evaluate each section of CDM-NMM to the draft CDM-PDD. Please provide your comments section by section:*

**(1) Brief description of new methodology:**

*Describe new methodology:*

>> The monitoring methodology is designed for commercial sales facilities where demand side management activities are implemented for reducing the consumption of electricity below that in the baseline scenario. The methodology monitors the following data for estimating baseline, project emissions and leakage:

(i) Baseline: Shopping area of the commercial facilities within the project boundary; TD losses in the grid; data for estimating grid electricity emission factor as mentioned in ACM0002; data for estimating emission factor for specific electricity generation source; and fuel specific carbon emission factor.

(ii) Project: Electricity purchased from grid; electricity from specific electricity generation sources; fuel consumed on site (other than for electricity generation); data for estimating grid electricity emission factor; data for estimating emission factor for specific electricity generation source; and fuel specific emission factor.

(iii) Leakage: No data is monitored for leakage.

**(2) Key assumptions/parameters:**

*a) List the implicit and explicit key assumptions. Identify those, if any, which are problematic and explain:*

>> Explicit Assumptions:

(i) Project activity is implemented in food retailers, supermarkets, hypermarkets, shopping centers and other similar commercial activities.

(ii) Electricity management program results in the reduction of electricity consumption at one site or a group of different sites where the project activity is developed. – The assumption I guess implies that project boundary could include either just one physical site or multiple site with different physical locations.

(iii) Electricity consumption is directly related to the sales area of the commercial facilities included in

the proposed CDM project. The quotient between electricity consumption and sales area is used to characterize the electricity intensity of the project activity. – This is critical to methodology as it simplifies the methodology. But at the same time it also has an underlying assumption that electricity consumption is independent of the kind of products sold and configuration of sales area at such commercial facilities. This assumption is problematic.

#### Implicit assumption

- (i) The best source of obtaining information on efficiency of specific electricity generation source (it apparently is assumed that such generation source might not be within the control of the project proponents and, hence, will be difficult to monitor their fuel consumption) is the technical literature. – This assumption is problematic.
- (ii) IPCC values for fuel specific emission factors are most appropriate for all fuels and all country situations.

*b) State whether the key assumptions are arrived at in a transparent manner:*

>>No.

*c) Give your expert judgement on whether the assumptions/parameters are adequate:*

>>No.

### **(3) Data sources and data quality:**

*a) Indicate which data sources are used and how the data are obtained (e.g. official statistics, expert judgement):*

>> Baseline

- (i) Electricity consumption norm is based on historical electricity consumption and total sales area of commercial activity.
- (ii) Total commercial sales area data is based on monitored data during project implementation.
- (iii) TD loss data is based on operators of the grid or other official sources.
- (iv) Grid electricity emission factor is estimated using data from sources as described in ACM0002.
- (v) Emission factor for specific non-grid generation sources is based on data on efficiency of the generator, obtained from technical literature, and Oxidation and Fuel emission factors, obtained from IPCC sources.

#### Project Emissions

- (i) Electricity consumption from grid and non-grid sources, and fuel consumption (other than operating the electricity generator) from monitored data.
- (ii) TD losses from grid operator or other official sources.
- (iii) Emission factor for grid electricity is estimated using data from sources as described in ACM0002
- (iv) Emission factor for specific non-grid generation sources is based on data on efficiency of the generator, obtained from technical literature, and Oxidation and Fuel emission factors, obtained from IPCC sources.
- (v) Emission factor for fuel used on-site (for other than electricity generation purposes) from IPCC sources.

*b) Give your expert judgement on whether the data used are adequate, consistent, accurate and reliable:*

>>No.

*c) State possible data gaps:*

>> The data used to estimate the project emission from fuel used on-site is not described adequately. The methodology only states that it will be estimated using monitored data and technical literature. No details of what data will be monitored and parameter values will be obtained from literature are mentioned.

The efficiency data used for estimating source specific electricity related emission will be obtained from technical literature. It is not explained why the data can't be obtained from the particular plant in question or from the supplier of the equipments.

The methodology doesn't describe what data is needed for estimating the grid specific emission factor and how that data will be obtained. It should atleast mention that grid specific emission factor data will be as per the description provided in ACM0002 monitoring methodology.

**(4) Assessment of the description of the proposed methodology and its applicability:**

a) State whether the proposed methodology has been described in an adequate manner:

>> No.

b) State whether the proposed methodology is appropriate for the referred proposed project activity and the referred project context (described in Sections A - E of the draft CDM-PDD and submitted along with CDM-NMM):

>> The proposed methodology is developed specifically for the proposed new baseline methodology NM0120. Its application is appropriate, wherever, the corresponding baseline methodology is applicable.

c) State whether this proposed monitoring methodology is compatible with the proposed baseline methodology described in CDM-NMB of the draft CDM-PDD:

>> Yes.

**(5) Leakage (please elaborate, if appropriate):**

>>The corresponding baseline methodology states the leakage should be assessed for each specific case separately and, therefore, the monitoring methodology doesn't include any parameter for monitoring leakage.

**(6) Quality assurance and control procedures (please explain):**

>> No description is provided in the methodology for QA/QC.

**(7) Potential strengths and weaknesses of the proposed monitoring methodology (please explain):**

>> STRENGTHs

(i) The methodology is well designed to use verifiable data for application of the corresponding baseline methodology.

WEAKNESS

(ii) The methodology lacks in proper QA/QC measures for data monitored on the project site.

(iii) It is incomplete in terms of not monitoring certain data (as mentioned in data gaps) which is important for the baseline methodology.

**(8) Applicability of the proposed methodology across project types and regions (please indicate):**

>> The methodology is applicable to

(iii) Projects to which the corresponding baseline methodology is applicable (i.e., all the applicability conditions for the baseline methodology are met).

(iv) Regions where data is available from official or other verifiable sources to estimate the various variable values needed for estimating emission reduction.

**(9) Any other comments:**

a) State whether any other source of information (i.e. other than documentation on this proposed

methodology available on the UNFCCC CDM web site) has been used by you in evaluating this methodology. If so, please provide specific references:

>>

b) Indicate any further comments:

>> The brief description of methodology is exact same in monitoring methodology as in the baseline methodology. The monitoring methodology brief description should explain what is monitored and why and not repeat the description of baseline methodology.

Signature of desk reviewer Enelhis Sharma ..

Date: 25 /07/05

Information to be completed by the secretariat	
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Date when the form was received at UNFCCC secretariat	
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