

Energy Efficiency Improvements - Hou Ma District Heating, Shanxi Province, P.R.C., NM 0096

Comments and reply to questions raised by the CDM Team on 12 April 2005

The raised comments / questions are indicated in italics. The reply is shown for each specific issue.

General remarks:

1. Guidance for determination of baseline scenario is weak. Why be limited only by these alternatives and what is the basis of baseline selection? The alternatives do not include the project activity and an analysis why this would not be the baseline.

The indicated limitations are introduced with the objective of preparing a base-line methodology which is relatively easy to apply and accordingly to avoid combinations of scenarios requiring a very complex set of equations for calculation of fuel consumption, emissions etc. Working with the (theoretical) possible number of technical variants, fuel, energy-saving options and combination of alternatives for heat and hot water supply it has become evident that it will be impossible correctly in detail (e.g. listing equations etc.) to describe how calculations and various values shall be applied.

In case the CDM team advises that the proposed base-line methodology shall be broader and operate with much wider range of base-line scenarios (e.g. including energy-saving options in buildings, renewable fuels (e.g. wood chip, straw incineration), heating of HTW by electricity etc.), the consultant's assessment is that the proposed base-line methodology will become very long and difficult to apply if it must include detailed formulas, default values and equations. The alternative will then be that the proposed base-line methodology is revised only to include quite general (but correct) instructions for the project developer and not in detail list equations, default values etc. A revision of the proposed base-line methodology in this manner will make it applicable for experienced and skilled energy planners and engineers. Such a revision will require sound judgments and experience by the project developer rather than following the more stringent set of equations and default values indicated in the present version of the proposed base-line methodology.

The proposed methodology is of course prepared with due considerations to the specific cases in question for the project participants (Hou Ma and Harbin District Heating project) and is by the project participants considered to be generally applicable for a great number of cities having similar existing situations and possibilities for future development. Further, the methodology is designed to be applicable for energy-efficiency improvements in heat and HTW production.

Through the application of the additionality tool proposed for the project activity (co-generation) it is analysed and evaluated whether the proposed project activity would be the base line, i.e. the proposed project activity is not listed among the base-line scenarios, however this can be changed if so advised.

2. Applicability conditions are too broad and not focused (e.g. HOBs or CHP as well)

The comment is not really understood. Is the instruction by the CDM-Team that the methodology should be focused on only one heat supply technology (e.g. HOBs)?

How to understand this comment?

Specific questions:

1. The methodology does not discuss a method to establish the energy demand / CO₂ emissions in the baseline. Is this method universal or country specific? Is there any statistics proving these figures?

The raised question is possibly not correctly understood by the Consultant. The proposed new methodology includes a detailed procedure (including equations) for calculation of energy demand and CO₂ emissions for each of the listed alternative base-line scenarios and for the project scenario.

If it is the advice of the CDM team that only a general method should be discussed and the detailed equations, default values etc. should be omitted, it will be possible to do this.

The method is universal and not country specific - i.e. applicable under the limitations indicated in the methodology and with application of project specific values (e.g. project specific values for fuel, energy consumption etc.)

It is not clear which values should be proven by statistics.

2. Not explained why oil is ruled out - for project activities in areas where there are stringent environmental constraints and no natural gas availability, oil would be the most likely option.

Reference is made to comments given in the introduction. In principle, oil could be the fuel in both the existing situation, the alternatives and the project scenario combined in different application of variants of oil (heavy fuel oil, light oil etc.).

The consultant's assessment are that coal / natural gas are the predominant fuels applied in heating projects to be presented as CDM projects including other oil and other fuels (e.g. wood chip, solid waste, geo-thermal energy, solar energy etc.) would lead to a too bulky and impractical methodology -see below. However with some modifications, the methodology can be changed to include oil and other fuels, but then detailed equations, default values etc. should be omitted, and only a general approach to the determination of the base-line scenarios described.

3. Steps for calculation of baseline and project emissions (pp 4-5) lack clarity.

It is quite difficult to comment on this statement (and revise the wording in the proposed methodology) as it is not evident for us which issues are unclear to the CDM Team. Pages 4 and 5 comprise a brief listing of the steps described in the methodology with the intention of giving an overview of the steps required. Each step is in much more detail described including equations in the following pages (page 10 through 27, but if these sections are too specific, a more general approach as described above can be included.

4. How calculate baseline emissions if the baseline is the heat and hottap water production by small individual boilers, stoves, and block heat systems and when some of residents may use e.g. electricity, others natural gas, kerosene for hot water.

The methodology is applicable for projects where the heating of hot tap water is made by existing boilers (to be replaced by e.g. the co-generated heat supply).

In case the residents in the existing situation use other means for heating of hot tap water (e.g. electrical heaters or gas heaters), the most likely situation will be that hot tap water will not be included in the project scenario as this will require construction of central hot tap water facilities, extensive internal piping in buildings etc. Accordingly, in this situation the residence will most likely continue getting hot tap water in the project scenario in the same manner as in the existing situation (e.g. no changes in energy consumption and CO₂ emissions).

The proposed methodology (or rather the listed equations) is not applicable in a situation where the heating of hot tap water shall be converted from e.g. electrical heating to heating from a district heating system. As mentioned above, it is possible to revise the proposed methodology to be able to accommodate such project scenarios, however then the principle of including equations covering all variants and possible combinations of variants must be abandoned and a more general instruction to the project developer (narrative description) must be elaborated.

5. According to the applicability conditions the heat consumption (heating and HTW) in baseline and project scenarios is identical. But if the new DH system would include valves in the apartments, how to be convinced that actual energy consumption will not be reduced, especially in countries with relatively low affordability? This issue may appear critical even in the baseline scenario.

The energy consumption in the apartments can be affected by many factors (e.g. installation of thermostatic radiator valves, metering of consumption, tariff reforms, changing windows, improving building insulation, changed operation patterns, improved load control, balancing of hydraulics etc.)

The basic assumption in the present proposed base-line methodology is that the net demand (heating and HTW) are identical in the base line and the project scenarios, and any change in heating demand is assumed to take place in both the baseline and project scenarios. This approach also ensures a parallel handling of differences in outdoor temperature from one year to another.

In case a proposed project includes an activity reducing the net heat demand (e.g. improved building insulation), this activity must by the project developer be handled separately through development of a suitable methodology and PDD (possibly in parallel with application of the present methodology applicable for the heat production and distribution).

In case a specific project is implemented using the present methodology for estimation of the CO₂ emission reductions, and the operator at a later stage implements saving measures at the consumers (e.g. building insulation, thermostatic valves, etc.), the present methodology represents a conservative approach as the monitoring methodology (and calculation of CO₂ emission reduction) is based on monitoring actual heat supplied (in the project scenario) to the district heating network. Saving measures at the consumer level will reduce the volume of heat supplied to the network and accordingly also the calculated CO₂ emission reduction.

We sincerely hope that the above comments and answers fulfil the requirements of the CDM team, but at the same time request an oral consultation with the CDM team, as we find that a continuous written dialog do not give the necessary clarifications.