



**CDM Proposed specific renewable technologies/  
measures recommendation form  
(Version 01.1)**

<b>Submitting DNA:</b>	THAILAND GREENHOUSE GAS MANAGEMENT ORGANIZATION (PUBLIC ORGANIZATION): TGO
<b>Title/version of the EB guideline/procedure this submission relates to:</b>	<p>“GUIDELINES FOR DEMONSTRATING ADDITIONALITY OF MICROSCALE PROJECT ACTIVITIES (Version 03)” /</p> <p>“PROCEDURE FOR SUBMISSION AND CONSIDERATION OF MICROSCALE RENEWABLE ENERGY TECHNOLOGIES FOR AUTOMATIC ADDITIONALITY (Version 01.0)”</p>
<b>Contact Information:</b> <i>(name of person or office, e-mail addresses and phone contacts)</i>	<p>MR.CHAIWAT MUNCHAROEN Deputy Executive Director</p> <p><a href="mailto:chaiwat.m@tgo.or.th">chaiwat.m@tgo.or.th</a></p> <p>+66 (0) 2 141 9805</p>
<b>Summary of the proposal:</b>	
<p>Thailand Greenhouse Gas Management Organization (Public Organization): TGO on behalf of the Thailand’s Designated National Authority for the Clean Development Mechanism (Thai’s DNA), has prepared the reference data to recommend the specific renewable energy technologies in Thailand, in accordance with the “GUIDELINES FOR DEMONSTRATING ADDITIONALITY OF MICROSCALE PROJECT ACTIVITIES (Version 03)”</p> <p>The reference data was supported by the electricity generation statistic agencies such as Energy Policy and Planning Office (EPPO), Electricity Generating Authority of Thailand (EGAT) and Provincial Electricity Authority (PEA). The contributions of specific renewable energy technologies (RET) in the total installed grid connected power generation capacity in Thailand as shown in Table 1. And the recommended specific renewable energy technologies (RET) as shown in Table 2.</p> <p>The recommended specific renewable energy technologies are as follows</p> <ol style="list-style-type: none"> <li>1. Hydropower</li> <li>2. Onshore Wind Power</li> <li>3. Biogas</li> <li>4. Biomass</li> <li>5. Geothermal</li> </ol> <p><b>A. Additional clarifications requested 27-Jul-12:</b></p> <ol style="list-style-type: none"> <li>1. With reference to Table 1 of the submission form, further clarification is required on how the data in columns A and B of the table from the cited sources (EGAT, EPPO, PEA) are derived. You may wish to provide separate excel files (in English) that support the reported data and also provide the exact links of the sources the data/information are derived. Where applicable and appropriate, kindly provide additional documentation supporting the submission (e.g. relevant data, documentation, statistics, studies, etc.),</li> </ol> <p><b>Response from DNA submitted 01-Aug-12:</b></p> <p>We collected the data that use for reference in Table 1 from Energy Policy and Planning Office (EPPO) and Electricity Generating Authority of Thailand (EGAT). For EPPO, we collected the data from the website* and only in Thai.</p> <p>EGAT’s data is not published in website and only in Thai. However, EGAT provided the required data for fill in the Table 1 of F-CDM-PRT-ver01 “CDM: Proposed specific renewable technologies/measures submission form (version 01.0)”</p>	

The Table 1 consists of electricity data from EGAT, Independent Power Producer (IPP), Small Power Producer (SPP) and Very Small Power Producer (VSPP). The data of EGAT, IPP and SPP are supported and provided by EGAT. And the data of VSPP is reported by EPPO. Therefore, Thai-DNA provided the comprehensive summary data in spreadsheet (MS.Excel) for refer to Table 1 of the submission form.

\* <http://www.eppo.go.th/power/data/index.html>

2. Please confirm that the data reported in the Table 1 also covers projects in the CDM pipeline (registered/at validation) that were already in operation in the year 2011.

In the Table 1, the CDM projects in Thailand that already generated and supplied electricity to the grid in the year 2011 are included

### **B. Additional Clarification requested on 21-Sept-12**

3. This is with reference to your submission on the proposal for automatic additionality of renewable energy technologies (RET) for microscale projects in Thailand. In accordance with section V and paragraph 19 of the "Procedure for submission and Consideration of microscale renewable energy technologies for automatic additionality," <[http://cdm.unfccc.int/Reference/Procedures/methSSC\\_proc04.pdf](http://cdm.unfccc.int/Reference/Procedures/methSSC_proc04.pdf)>, you are requested to provide additional information requested below to facilitate the consideration of your submission.

#### **Difference in total installed capacity:**

With reference to Table 1 of the submission form, the total installed grid connected power generation capacity (Column (B)) as of December 2011 in the country is 34,273.76 MW. However, according to page 3 in "Thailand Power Development Plan (PDP 2010: Revision 3, EPPO, Ministry of Energy, Thailand June 2012)" retrieved from <<http://www.egat.co.th/en/>>, the total installed capacity in the country as of December 2011 is reported to be 32,395 MW. Further, with respect to pages 18 and 113 of EGAT's Annual report-2011, <<http://www.egat.co.th/images/stories/annual/reports/2554/index.html>>, the total installed capacity in the country in 2011 is reported to be 31,446.72 MW. It is also noted from Table 4.2/page 17 of the "Thailand Power Development Plan" mentioned above that the total installed capacity of renewable energy technologies in year 2011 is 6340.2 MW while Table 1 of the submission yields 5195.65 MW.

Please clarify and confirm, if necessary providing further documentation supporting the submission, that all the reported data (including total installed capacity of renewable energy technologies) under Table 1 are consistent with the cited sources (EGAT and EPPO).

#### **Consideration of installed capacity in neighbouring countries:**

It is noted from page 113 of EGAT's 2011 annual report that the total installed capacity reported for the country also includes installed capacity of power purchases from neighbouring countries. Please note paragraph 2 (d) (ii) of "Guidelines for demonstrating additionality of microscale project activities" <[http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC\\_guid22.pdf](http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid22.pdf)>, that states "The ratio of installed capacity of the specific grid connected renewable energy technology in the total installed grid connected power generation capacity in the host country shall be equal to or less than 3 per cent"<sup>1</sup> We thus are of the opinion that Column B of Table 1 of the submission excludes installed grid connected power generation capacity associated with power purchases from neighbouring countries,

You are requested to provide the information requested above as soon as possible but not later than 20 October 2012.

### **Response from DNA submitted 22-Oct-12**

According to the requested information of SCC Team for the submission on the proposal for automatic additionality of renewable energy technologies (RET) for microscale projects in Thailand from Thai-DNA (TGO). We clarified the requested information as follows:

#### **Difference in total installed capacity:**

For the recommended RET submission report, the data used for considering the recommended RET for microscale project were supported by EGAT (The Electricity Generating Authority of Thailand) and EPPO (Energy Policy and Planning Office). EGAT's data consist of EGAT power plants, IPP power plants

<sup>1</sup> For example, if the ratio of total installed capacity of all grid-connected hydropower plants with the capacity equal to or smaller than 5 MW and the national grid-connected installed electricity generation capacity is less than 3 per cent in a host country then microscale hydropower is eligible for DNA recommendation in that host country.

(Independent Power Producer) and SPP power Plant (Small Power Producer). For EPPO's data consist of VSPP power plants (Very Small Power Producer).

We use the bottom up data (power plant name, electricity generation technology and installed capacity of each technology) that were supported by EGAT and EPPO to categorize on technology base (the data is only in Thai) to consider the recommended RET. The EGAT's annual report data is the Power Purchasing Agreement capacity (PPA capacity must less than installed capacity) that is the reasons why the data of EGAT's annual report in year 2011 are different from the recommended RET submission report.

For PDP 2010 rev.3 report of EPPO, Ministry of Energy is power development plan report that was published in year 2010. The data in the report is not actual operation figures and are only plan's figures. Therefore, we cannot use the PDP 2010 rev.3 data to consider the recommended RET for the submission report.

#### Consideration of installed capacity in neighbouring countries:

For the recommended RET submission report did not consider the data of installed capacity in neighboring countries (Lao PDR. and Malaysia).

Remark:

We revised the data as follows:

1. Revised Solar-PV data in column B of Table 1 from 152.82 MW to 160.37 MW
2. Revised Total data in column B of Table 1 from 34,273.76 MW to 34,275.31 MW

Please note that the following electricity generation technologies of installed capacity up to 15 MW are already included in the positive list of grid-connected renewable electricity generation technologies that are automatically defined as additional: (a) Solar technologies (photovoltaic and solar thermal electricity generation); (b) Offshore wind technologies; and (c) Marine technologies (wave, tidal). Therefore, these technologies need not be recommended under the scope of these guidelines (please see "Guidelines for demonstrating additionality of microscale project activities" at [http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC\\_guid22.pdf](http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid22.pdf)).

#### Recommendation to EB:

The Board at its sixty-third meeting specified three criteria to be satisfied by the DNA recommendations in order that automatic additionality is conferred to microscale renewable energy projects in the host country. The submission is assessed below against these criteria:

- (a) Criteria 1: DNA submissions shall include the specific grid connected renewable electricity generation technologies that are being recommended and provide the required data (e.g. wind power, biomass power, geothermal power, hydropower);

The submission has provided segregated data per technology and is in accordance with the above requirement.

- (b) Criteria 2: The most recent data available on the percentage of contributions of specific renewable energy technologies shall be provided to demonstrate compliance with the 3 per cent threshold. No data older than three years from the date of the submission shall be used.

The submission has provided the most recent data available, from 2011. It is considered that the above requirement is met, based on the information in the submission.

- (c) Criteria 3: The ratio of the installed capacity of the specific grid-connected renewable energy technology in the total installed grid-connected power generation capacity in the host country shall be equal to or less than 3 per cent. "Specific renewable energy technologies/measures" refers to grid-connected renewable energy technologies of installed capacity equal to or smaller than 5 MW. Total installed capacity of ALL grid-connected technologies in the country in the reference year was **34,275.31 MW**.

a. **Hydro:** The total installed capacity of hydro plants of less than 5 MW was reported to be **18.88 MW** resulting in a ratio of **0.06%** in the reference year. This calculated ratio is under three per cent and thus, it is considered that the requirement for hydro technologies (i.e. under three per cent) has been met.

b. **Renewable Biomass:** the aggregate plant capacity of all renewable biomass technologies equal to or less than 5MW was reported to be **128.24 MW** resulting in a ratio of **0.37%** in the reference year. The SSC WG thus considered that the requirement for renewable biomass

technologies (i.e. under three per cent) has been met;

c. **Wind (on-shore):** the aggregate plant capacity of all grid connected total wind turbine installations in the country was reported to be **3.07 MW** resulting in a ratio of **0.01%** in the reference year. It is considered that the requirement for wind technologies (i.e. under three per cent) has been met;

d. **Geothermal:** the total installed capacity of grid connected geothermal power plants of less than 5 MW was reported to be **0.30 MW** resulting in ratio of **0.001%** in the reference year. This calculated ratio is under the threshold of three per cent and thus, it is considered that the requirement for geothermal technologies (i.e. under three per cent) has been met;

The reported data and calculations provided by DNA of Thailand have also been verified by reviewing publicly available report such as “Thailand Power Development Plan (PDP 2010: Revision 3, EPPO, Ministry of Energy, Thailand June 2012)” < <http://www.egat.co.th/en/>>, and “Annual report-2011” of Electricity Generating Authority of Thailand, <<http://www.egat.co.th/images/stories/annual/reports/2554/index.html>>,

(d) It is noted that a call for public input was open from **6 August 2012 to 19 August 2012** as per the “Procedure for submission and consideration of microscale renewable energy technologies for automatic additionality” and no comments were received.

#### Recommendation to the Board

The following grid connected microscale renewable energy technologies of a capacity equal to or less than 5 MW, recommended by the DNA of Thailand following the “Procedure for submission and consideration of microscale renewable energy technologies for automatic additionality” and the “Guidelines for demonstrating additionality of microscale project activities” (version 04), may be considered by the Board as eligible for conferring automatic additionality in the host country:

- Hydro;
- Onshore Wind;
- Geothermal;
- Renewable Biomass (Biogas, Wood/Wood Wastes/Other Solid Wastes)

The following electricity generation technologies with an installed capacity up to 15 MW are already included in the positive list of grid-connected renewable electricity generation technologies that are automatically defined as additional<sup>2</sup> :

(a) Solar technologies (photovoltaic and solar thermal electricity generation); (b) Off-shore wind technologies; (c) Marine technologies (wave, tidal); and (d) Building and household rooftop wind turbines up to 100 kW.

Therefore, these technologies do not need to be recommended under the scope of these guidelines.

#### SECTION TO BE FILLED IN BY THE UNFCCC SECRETARIAT

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<sup>2</sup> See “Guidelines on the demonstration of additionality of small-scale project activities” (available at: <<http://cdm.unfccc.int/Reference/Guidclarif/index.html#meth>>).

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**History of the document**

<b>Version</b>	<b>Date</b>	<b>Nature of revision(s)</b>
01.1	12 April 2012	Editorial changes to include new logo and other improvements.
01.0	13 January 2012	Initial publication.
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