



## Assessment Report for CDM proposed standardized baseline (Version 02.0)

*(To be used by the UNFCCC secretariat in assessing the quality of a proposed standardized baseline only when requested by eligible DNAs.)*

<b>Title of proposed standardized baseline:</b>	Grid Emission Factors for Saint Kitts and Nevis
<b>Reference of proposed standardized baseline:</b>	PSB0057
<b>Name(s) of the Party or Parties to which the proposed standardized baseline applies:</b>	Saint Kitts and Nevis
<b>Name(s) of the proponent(s) of the proposed standardized baseline:</b>	Ministry of Environment and Cooperatives
<b>History of the submission &amp; assessment:</b>	<p>1) 23/07/2021: first submission was received</p> <p>06/08/2021: initial assessment was finalized</p> <p>20/10/2021: The draft standardized baseline (DSB) was sent to the DNA, which agreed to recommend the DSB to the Board for approval</p>
<p><b>Conclusion:</b></p> <p>(a) The quality assurance and quality control system complied with the provisions and data quality objectives of the valid “Guidelines for quality assurance and quality control of data in the establishment of standardized baselines”</p> <p>(b) The approach used by this proposed standardized baseline complied with one of the approaches referred to in the valid “Procedure for development, revision, clarification and update of standardized baselines”:</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> N/A</p> <p><input checked="" type="checkbox"/> One of the four approved approaches:</p> <p><input type="checkbox"/> The “Guidelines for the establishment of sector specific standardized baselines”;</p> <p><input type="checkbox"/> A methodological approach contained in an approved baseline and monitoring methodology;</p> <p><input checked="" type="checkbox"/> A methodological approach contained in an approved methodological tool;</p> <p><input type="checkbox"/> The “Guideline: Establishment of standardized baselines for afforestation and reforestation project activities under the CDM”.</p>
<b>Date when the assessment report is completed:</b>	25/10/2021

**SECTION A. Summary of Proposed Standardized Baseline**

**A.1. Scope and application of the proposed standardized baseline**

1. The proposed standardized baseline (PSB) is developed for
  - (a)  Additionality demonstration;
  - (b)  Baseline identification;
  - (c)  Baseline emission estimation
  
2. The sector to which this PSB applies is the energy industries sector, which includes electricity generation/ consumption in Saint Kitts and Nevis. The grid emission factor is determined separately for the mainland Saint Kitts and for the mainland Nevis.
  
3. The PSB applies to the following measures:
  - (a)  Fuel and feedstock switch;
  - (b)  Switch of technology with or without change of energy source (including energy efficiency improvement);
  - (c)  Methane destruction;
  - (d)  Methane avoidance
  
4. Projects shall use standardized baseline together with the approved methodological tool “e TOOL07 : Tool to calculate the emission factor for an electricity system” version 7.0 (hereinafter referred to as “the grid tool”).

**A.2. Description of the proposed standardized baseline**

5. Key data parameters and data sources:

<i>Key data parameters</i>	<i>Data sources</i>
Electricity generation in the electric grid of mainland Saint Kitts	The process is controlled by the electric utility SKELEC. Data is collected hourly by system operators based on readings from generator and feeder electricity meters.
Fuel consumed by the power plants connected to the electric grid of mainland Saint Kitts	Information is recorded by plant operators tabulated and published in internal monthly fuel consumption, energy generation statistics and power plant key performance indicator report which are submitted to the General Manager and Board of Directors.
Electricity generation in the electric grid of mainland Nevis	The process is controlled by the electric utility NEVLEC. Data is collected hourly by system operators based on readings from generator and feeder electricity meters. The electricity from the wind power plant is recorded monthly and verified by the IPP and NEVLEC.
Fuel consumed by the power plants connected to the electric grid of mainland	Information is recorded by plant operators tabulated and published in internal monthly

<i>Key data parameters</i>	<i>Data sources</i>
Nevis	fuel consumption, energy generation statistics and power plant key performance indicator report which are submitted to the General Manager and Board of Directors.
Fuel properties (NCV, CO <sub>2</sub> emission factor)	Information gathered using the 2006 IPCC Guideline documents

6. The scope and coverage of the data:
  - (a) The proposed PSB0057 identifies, as part of the relevant electricity systems, the following power plants:
    - (i) 2 fossil-fuel fired power plants (one connected to the electric grid of mainland Saint Kitts and another connected to the electric grid of mainland Nevis);
    - (ii) 1 solar power plant (connected to the electric grid of mainland Saint Kitts);
    - (iii) 1 wind power plant (connected to the electric grid of mainland Nevis);
  - (b) The data include key information of each facility (name, region, output type, production, fuel type/consumption and technology);
  - (c) The data represent all regions in the country;
  - (d) The data represent three years (2018, 2019 & 2020).
7. The DNA uses its own data template, that captures the main data required by the grid tool, to calculate the combined margin emission factor.
8. The PSB applies the following assumptions (and/or conservative approaches) in order to process the data:
  - (a) As allowed by paragraph 90 of the grid tool, the combined margin emission factor is determined based on the operating margin emission factor since Saint Kitts and Nevis is a Small Island Developing State (SIDS).

## **SECTION B. Summary of Assessment**

### **B.1. Assessment process**

9. The purpose of assessment conducted by the secretariat is: i) to ensure that the QA/QC system implemented by the DNA complies with the provisions and data quality objectives of the “Guidelines for quality assurance and quality control of data used in the establishment of standardized baselines” (hereinafter referred to as QA/QC guidelines); ii) to ensure that the PSB complies with the approach from the grid tool.
10. The assessment consisted of the following:
  - (a) Review of the documents submitted,
  - (b) Identification of issues (assessment findings) and draft of the assessment “findings and resolution” note,
  - (c) Communication of assessment findings with DNA and request for their resolution and response,

- (d) Direct communication with DNA,
  - (e) Review of the additional documents and/or responses provided by DNA,
  - (f) Closing the findings,
  - (g) Conclusion of the assessment report.
11. A desk review was performed on the following data/information submitted as part of the PSB.
- (a) First submission dated 23/07/2021, which was successful in the initial assessment, included:
    - (i) PSB form (F-CDM-PSB), version 1.0 dated 20/07/2021
    - (ii) A letter of intent from the DNA of Saint Kitts and Nevis to the CDM Executive Board dated 23/07/2021;
    - (iii) A spreadsheet containing the data and the calculation of the combined margin emission factor for the electric grids of mainland Saint Kitts and mainland Nevis;
    - (iv) A signed QC report dated 23/07/2021
  - (b) No findings that needed additional clarification by the DNA were identified.

**B.2. Assessment opinion:**

12. In accordance with the QA/QC guidelines, the secretariat concluded that the all following requirements were met by this PSB:
- (a) QC system (resource/procedure) was implemented to check the data quality before/during/or after data collection.
  - (b) QC activities were clearly documented (in the QC report).
  - (c) Consultation process was clearly documented. According to the consultation report, stakeholders (such as representatives from the electricity utilities SKELEC and NEVLEC, Ministry of Public Infrastructure, Post, Urban Development and Transport and the Department of Environment) were invited to provide inputs and comments. The consultation process took place on 24/06/2021 virtually.
  - (d) All relevant documents and data were available for assessment.
  - (e) The data key sources were from the utilities, which collected credible data in accordance with their internal procedures. The following quality check of the data was conducted:
    - (i) Net electricity generated: Information is cross-checked daily by power plant's operations and production management staff, and parasitic losses are quantified and subtracted from gross generation figures. For NEVLEC, the electricity utility and wind IPP verify the wind generation information as provided by a main meter and secondary meter at the end of each month to agree on the amount of electricity generated and supplied to the national grid by the IPP.
    - (ii) Fuel Consumed: Fuel consumption data are cross-checked by plant operations and production management team. In addition, fuel consumption

information is cross-checked by the National Climate Change Office as part of the QA/QC measures employed as part of the Greenhouse Gas Inventory process.

- (f) The data scope was comprehensive enough to produce “true and fair” representative SB in the particular sector.
  - (g) The key data and information are consistently presented. The units of the electricity generated and fuel consumed are in MWh and imperial gallons, respectively.
  - (h) The data vintage of 3 years (2018-2020) was met as per the provisions of the “Standard for data coverage and validity of standardized baselines”.
  - (i) The assumptions and conservative approaches for data processing and calculations were justified.
  - (j) There were no confidential data but the data file would be presented in an anonymous form.
13. The details of issues (assessment findings) identified by the secretariat and the responses provided by the DNA are provided in Appendix-1 to this document.
14. The secretariat concluded that the PSB complied with the approach of the grid tool. A detailed assessment of the compliance of the PSB with the requirements from the grid tool are provided in Appendix 2 of this document.

**Appendix 1. Findings and resolutions**

CL No.	Request for Clarification (CL)	Reference to general provisions of guidelines on quality assurance and quality control of data used for sector-specific standardized baselines	Responses and corrective actions of DNA	Conclusion (open/closed)
1				
2				

## Appendix 2. Assessment of the steps from the grid tool

STEP FROM THE GRID TOOL	ASSESSMENT
Step 1: Identify the relevant electricity systems	<p>Saint Kitts and Nevis is an insular nation, composed by two islands: the island of Saint Kitts and the island of Nevis. Each island has its own electric grid, which are neither interconnected among themselves nor connected to an electric grid from another country.</p> <p>Therefore, the electric systems are (i) the electric grid of Saint Kitts, and (ii) the electric grid of Nevis.</p>
Step 2: Choose whether to include off-grid power plants in the project electricity system (optional)	<p><u>Electric grid of Saint Kitts</u> The DNA selected Option I ( "Only grid power plants are included in the calculation")</p> <p><u>Electric grid of Nevis</u> The DNA selected Option I ( "Only grid power plants are included in the calculation")</p>
Step 3: Select a method to determine the operating margin (OM)	<p><u>Electric grid of Saint Kitts</u> The electric grid of Saint Kitts is composed by the following 2 power plants:</p> <ul style="list-style-type: none"> <li>• Needsmust Power Station – consumes diesel;</li> <li>• SKELEC Solar Plant</li> </ul> <p>The solar power plants entered in operation in 2013, and the electricity generated over the period 2016-2020 represents an average of 0.20%, meaning the share of low-cost/must-run (LCMR) resources constituted less than 50% of the total grid generation. Therefore, the Simple-OM method was selected.</p> <p><u>Electric grid of Nevis</u></p>

	<p>This electric grid of Nevis is composed by the following 2 power plants:</p> <ul style="list-style-type: none"> <li>• Prospect Power Plant – consumes diesel;</li> <li>• Windwatt – wind power plant</li> </ul> <p>The electricity generated by Windwatt over the period 2016-2020 represents an average of 3.80%, meaning the share of low-cost/must-run (LCMR) resources constituted less than 50% of the total grid generation. Therefore, the Simple-OM method was selected.</p>
<p>Step 4: Calculate the operating margin emission factor according to the selected method</p>	<p><u>Electric grid of Saint Kitts</u>  The calculation of the OM was performed through Option A (Based on the net electricity generation and a CO<sub>2</sub> emission factor of each power unit) and the <math>EF_{EL,m,y}</math> was determined based on option A1 (data on fuel consumed and electricity generated by each power plant is available).</p> <p>The list of power plants and the data of electricity generated and fuel consumed by each power plant were provided by SKELEC. The NCV of the fuel consumed and the CO<sub>2</sub> emission factor of the fuel were sourced from the IPCC.</p> <p>The OM calculated for the period 2018-2020 is equal to 0.67 tCO<sub>2</sub>/MWh.</p> <p><u>Electric grid of Nevis</u>  The calculation of the OM was performed through Option A (Based on the net electricity generation and a CO<sub>2</sub> emission factor of each power unit) and the <math>EF_{EL,m,y}</math> was determined based on option A1 (data on fuel consumed and electricity generated by each power plant is available).</p> <p>The details of the power plant including the data of electricity generated and fuel consumed were provided by NEVLEC. The NCV of the fuel consumed and the CO<sub>2</sub> emission factor of the fuel were sourced from the IPCC.</p> <p>The OM calculated for the period 2018-2020 is equal to 0.73 tCO<sub>2</sub>/MWh.</p>
<p>Step 5: Calculate the build margin (BM) emission factor</p>	<p>For both electric grid of Saint Kitts and electric grid of Nevis, the combined margin was determined based on the simplified approach of paragraph 90 of the grid tool, i.e. applying a weight of 1 to the operating margin and 0 to the build margin since Saint Kitts and Nevis is a small island developing</p>



	state. Therefore, there is no need to determine the build margin.
Step 6: Calculate the combined margin emissions factor	<p><u>Electric grid of Saint Kitts</u> The simplified combined margin emission factor was determined by applying a weight of 1 to the OM and 0 to the BM. The result is equal to 0.67 tCO<sub>2</sub>/MWh.</p> <p><u>Electric grid of Nevis</u> The simplified combined margin emission factor was determined by applying a weight of 1 to the OM and 0 to the BM. The result is equal to 0.73 tCO<sub>2</sub>/MWh.</p>

- - -

### Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
01.0	27 May 2013	Initial publication
02.0	01 June 2015	Modified in order to take into account the Board's decision and improve clarity and consistency

Decision Class: Regulatory  
Document Type: Form, (for Secretariat use only)  
Business Function: Methodology  
Keywords: Assessment, Standardized baselines, Methodologies