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.)*

Title of proposed standardized baseline:	Grid emission factor for the Dominican Republic
Reference of proposed standardized baseline:	PSB0010
Name(s) of the Party or Parties to which the proposed standardized baseline applies:	The Dominican Republic
Name(s) of the proponent(s) of the proposed standardized baseline:	National Council for Climate Change and CDM (CNCCMDL), The Dominican Republic together with the Regional Collaboration Centre St. George
History of the submission & assessment:	1) 20/02/2014: First submission was received • 17/03/2014: Initial assessment was finalized and the proposed standardized baseline (PSB) was uploaded on website. • 08/04/2014: The assessment was finalized for data quality aspects and quality assurance/quality control (QA/QC) findings were raised in accordance with requirements of "Guidelines for quality assurance and quality control of data used in the establishment of standardized baselines" (version 2.0) (QA/QC guideline). 2) 09/06/2014: Second submission was received • 26/06/2014: The assessment was finalized for data quality aspects and the submission was considered to be compliant with QA/QC guideline, and therefore all QA/QC findings were closed. • 14/08/2014: The recommendation requiring further inputs from DNA was finalized and sent to DNA. 3) 16/03/2015: Third submission was received • 08/12/2014: The recommendation requiring further inputs from DNA was finalized and sent to DNA. 4) 15/05/2015: Fourth submission was received • 02/06/2015: It was agreed to recommend the draft standardized baseline (DSB) to the Board for approval, after receiving agreement from DNA.

Conclusion:	
(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"	☒ Yes ☐ No ☐ N/A
(b) The approach used by this proposed standardized baseline (SB) complied with one of the approaches referred to in the valid "Procedure for development, revision, clarification and update of standardized baselines":	☒ One of the four approved approaches: ☐ The "Guidelines for the establishment of sector specific standardized baselines"; ☐ A methodological approach contained in an approved baseline and monitoring methodology; ☒ A methodological approach contained in an approved methodological tool "Tool to calculate the emission factor for an electricity system" (version 04.0.0); ☐ The "Guideline: Establishment of standardized baselines for afforestation and reforestation project activities under the CDM".
Date when the assessment report is completed:	26/06/2015

SECTION A. Summary of Proposed Standardized Baseline

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

1. The PSB is developed for:

   (a) ☐ Additionality demonstration;

   (b) ☐ Baseline identification;

   (c) ☒ Baseline emission estimation.

2. This PSB applies to energy industries sector, which includes electricity generation/consumption.

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 the standardized baseline together with the approved methodologies which refer the "Tool to calculate the emission factor for an electricity system" for grid emission factor.

A.2. Description of the proposed standardized baseline

5. Key data parameters and data sources:

Key data parameters *(e.g. total production of output, kiln technology, fuel & consumption etc.)*	Data sources *(e.g. individual facilities, government documents, literature etc.)*
Total annual electricity production	The National Grid Coordinating Entity of the Dominican Republic (OC-SENI)
Net calorific Values (NCV) of fuel	The default IPCC values
Fuel emission factors	The IPCC default values (at the lower limit of uncertainty at a 95 per cent confidence interval)
Total annual fuel consumption	The National Grid Coordinating Entity of the Dominican Republic (OC-SENI)

6. The scope and coverage of the data:

   (a) The OC-SENI maintains complete and up-to-date information and operation data of individual power plants, including name, region, power generation, fuel type/consumption;

   (b) The relevant electricity system is the National Interconnected Electric System of Dominican Republic (SENI), which covers the entire country;

   (c) Data vintage required is three successive years of data for each power plant (2011, 2012 and 2013):

      (i) For Operating Margin (OM) calculation, as low cost/must run plants constitute 11 to 14 per cent of total electricity generation, which is less than 50 per cent of the Dominican Republic grid generation during the five most recent years (2009 – 2013), the Simple OM method is selected;

      (ii) The Build Margin (BM) is calculated using the data for power plants that comprises 32.5 % of generation.

7. The DNA uses a data template in accordance with the approved tool.

SECTION B. Summary of Assessment

B.1. Assessment process

8. 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); and (ii) to ensure that the PSB complies with “Tool to calculate the emission factor for an electricity system” (version 04.0.0).

9. 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) Review of the additional documents and/or responses provided by DNA;

(e) Closing the findings;

(f) Conclusion of the assessment report.

10. A desk review was performed on the following data/information submitted as part of the PSB:

(a) First submission dated 20/02/2014 which was successful in the initial assessment included:

(i) Proposed standardized baseline form (F-CDM-PSB) dated 20/02/2014;

(ii) Report “Grid emission factor for the Dominican Republic power sector”;

(iii) Table to calculate grid emission factor;

(iv) QC report;

(v) Data delivery Protocol;

(b) Assessment findings were communicated to the DNA on 08/04/2014, in response to which the DNA submitted the revised documents and additional relevant documents;

(c) Second submission dated 09/06/2014 included:

(i) Revised CO_2 emissions factor for the Dominican Republic power sector;

(ii) Table to calculate grid emission factor dated 05/06/2014;

(iii) Revised QC report;

(iv) Responses to the initial findings;

(d) Third submission and fourth submissions dated 16/03/2015 and15/05/2015 respectively included:

(i) Revised and updated “CO_2 emissions factor for the Dominican Republic power sector”;

(ii) Revised and updated proposed standardized baseline form (CDM-PDB-FORM);

(iii) Revised MS Excel calculation sheet;

(e) Review of these additional submissions clarified all issues raised at the recommendation stage.

B.2. Assessment opinion

11. The secretariat concluded that all the following requirements of QA/QC guidelines were met by this PSB:

(a) QC system (resource/procedure) was implemented to check the data quality before/during/or after data collection:

(i) Data about power plant’s fuel consumption is obtained by the OC-SENI directly from power producers. As well, OC-SENI uses the thermal efficiency of each unit and their heat ratio to cross-check the fuel consumption;

(ii) All data collected as part of monitoring will be archived electronically and will be maintained for at least 5 years by the DNA;

(iii) The National Grid Coordinating Entity of the Dominican Republic (OC-SENI) is a government agency which coordinates the operation of the generation, transmission and distribution companies in the Dominican Republic;

(iv) OC-SENI keeps accurate records of:

a. Each plant / unit to the grid connected generation;

b. Plants included in the build margin and the operating margin;

(v) The data will be presented in such a way that allows for the reproduction of the calculation of the emission factor of build and operating margins of the grid;

(vi) OC-SENI has 24/7 monitoring system. Generation information is transmitted to OC-SENI in real time via radio frequency. On the basis of transmitted information, OC-SENI prepares annual reports. In the monthly report OC-SENI uses distribution data. In the weekly report, power generators report fuel type and heat rate to OC-SENI via email;

(vii) There is a standard format for generator companies and distributors to report to OC-SENI. Time is given by report type, so that the generator makes corrections to their reports, but the annual report is the most accurate because this is based on billing and payment made;

(viii) OC-SENI publishes its reports per year since 2000. 2012 has just been published and incorporated in the calculation;

(ix) Therefore, it can be concluded that a QC system was implemented in accordance with 'Guidelines for quality assurance and quality control of data used in the establishment of standardized baselines';

(b) QC activities were clearly documented in the submitted QC report;

(c) Consultation process was clearly documented:

(i) Stakeholder consultation approach was taken by the DNA to assess the quality of the data management system;

(ii) Representatives from various entities such as energy agency, council, OC-SENI, private sector and power producers were invited for consultation workshops;

(d) All relevant documents and data were available for assessment;

(e) The data key sources were government authorities, which collected credible data in accordance with their national standards and procedures;

(f) The data scope was comprehensive enough to produce "true and fair" representation of SB in the power sector of the Dominican Republic;

(g) The key data and information are consistently presented;

(h) The data coverage (3 years) and data currentness requirements were complied with as per the provisions of the “Standard for data coverage and validity of standardized baselines”;

(i) There were no confidential data but the data file would be presented in an anonymous form.

12. 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.

13. The calculation of emission factor of the grid presented in PSB is in accordance with the applicability and the provisions of “Tool to calculate the emission factor for an electricity system” (version 04.0.0). Therefore the emission factors (OM, BM and CM) derived in the PSB is assessed to be accurate.

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	The reference to the data source of "Figure 5 – Contribution of Sources / Technologies Supping the SENI" on page 17 refers to the "Source: OC Annual Report of SENI – 2011 (www.oc.org.do)" seems erroneous since data for 2012 are also included. The correct reference should be OC Annual Report of SENI – 2012 table 40 on page 102	Traceability	This clarification has been adopted and fixed within the report (figure 5).	Closed
2	In page 21 of the document titled "Grid Emission Factor for the Dominican Republic Power Sector", it is stated that for power plants Rio San Juan, Los Origenes and Inca KM22, the default value for average efficiency for open cycle unit before year 2000 is used for estimating the emission factor. However, in the calculations provided in excel sheet, a value of 39.5% is applied, which corresponds to open cycle unit implemented after year 2000. The inconsistency should be clarified and the choice of the default value for the power plants should be justified	Accuracy	'Before' is replaced by 'after' within the report as the units in question are commissioned after year 2000 and data about units for BM: -Rio San Juan (2008, oil, diesel engine (open cycle), effic. = 39.5%) -Los Origenes (2012, gas natural, gas turbine (open cycle), effic. = 39.5%) -Inca (km22) (2012, oil based unit, diesel engine (open cycle) effic. = 39.5%)	Closed
3	For power plant Falcondo and Estella del Norte, data for 2012 are missing. The power plants are not included in the calculations of OM for the respective years where data are missing. The justifications for excluding the power plant from calculations should be provided and explanation for the lack of data should be included. The general approach for handling missing data needs to be elaborated taking into account relevant provisions of QA/QC guidelines	Objectivity	According to SENI report from 2011, Falcondo is not injecting electricity to SENI since march 2011 and Estrella del Norte was sold to other no-electricity company (in November). An explanation note for each plant has been added to Table 6, as a footnote	Closed

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)
4	It should be clarified whether table 6 represents the net thermal energy generation or net electricity generation	Accuracy	Table 6 refers to thermal power plants supplying to SENI (not plants supplying thermal energy). This issue been fixed renaming Table 6 as "Net Electricity Generation in the SENI from Fossil Fuels-Based Units (in MWh)"	Closed
5	Power plant named Falcondo cannot be found in the list with the installed capacity in the country (Table 4 page 20 of the OC Annual Report of SENI – 2012) but it appears in the excel sheet with data for 2010. The source of information and data for the power plant should be provided	Accuracy	In general, all information of each unit / plant is taken from the respective OC Annual Report. 2010 data from Falcondo is available on Table 7 on page 43. It is already explained within the document	Closed
6	Power plant named Falcon 1 is included in the excel sheet calculations for 2011. However, this plant is not included in the table 6, page 21-22 of the document titled "Grid Emission Factor for the Dominican Republic Power Sector". The data provided for plant Falcon 1 cannot be traced back to the reference data sources included in the submission. Further clarity needs to be provided about the status of the power plant and respective data sources	Accuracy and Traceability	Falcondo is the collective name of 3 units (Falcon 1, Falcon 2, and Falcon 3). In 2011 just Falcon 1 was injecting electricity to the SENI (please see CL4 and CL5 above). As well, Table 3 of the report clearly specifies that Falcondo is not included	Closed
7	The report entitled "Reporte mensual de consumo de combustible del ano 2012" lists separately the following units: ESTRELLA DEL MAR 2 CGN, ESTRELLA DEL MAR 2 SGN, ESTRELLA DEL MAR 2 CFO, ESTRELLA DEL MAR 2 SFO, but the excel sheet with calculations provides only one value for the fuel consumption. It needs to be elaborated how the value in the excel sheet was derived	Traceability	Per guidance of the tool "Where several fuel types are used in the power unit, use the fuel type with the lowest CO_2 emission factor". In all mentioned cases, a fuel equivalency was calculated based in the amount of each fuel by their calorific value and emissions factors. Using as reference the fuel with lowest emission factor	Closed

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)
8	Values for net calorific value, emission factor and density of the fuels used are different in the excel sheet and submission documentation – e.g. table 7 and table 8 of the document entitled Grid emission factor for the Dominican Republic Power Sector. If any conversion is applied it should be included in the tables or the same dimensions should be used consistently in the documents	Traceability	This clarification has been adopted and fixed within the report (Table 7 and 8) adding the correspondent conversion factors for such parameters	Closed
9	It is not clear which type of fuel is the fuel oil No2 and fuel oil No6. The respective types of the fuels need to be indicated in order to justify the selection of the default values for NCV and EF applied	Traceability	Fuel Oil # 2 is typically refereed as “Gas Oil” or Light Fuel Oil (LFO) or “Bunker B”, while Fuel Oil # 6 is commonly referred as “Fuel Oil”, Heavy Fuel Oil (HFO) or “Bunker C”	Closed
10	The spread sheet contains 30 sheets, some of which may not be relevant to calculation of proposed standardized baseline values (for example, sheets for off-grid power plants, sheets for calculating simple adjusted OM, sheets for calculating average OM, etc.). Please include only those sheets that are used for final proposed grid emission factors	Relevance	This clarification has been adopted and fixed within the spread sheet. Only those sheets that are used for final proposed grid emission factors are included. While doing so, some hypothetical numbers on off grid calculation sheet (as it was in the original template) were found influencing the result. These were not data from the Dominican Republic and as stated in the report off grid plants are not included in the calculation, therefore are removed. Consequently the result (only OM and CM, not BM) has changed. These new numbers are included in the report in track change mode	Closed
11	In Table 6 of page 21-22, fuel type of the San Felipe power plant is described as “Fuel Oil No.2 y 6”. Does this mean that two types of fuels are used in combined cycle? If so, please ensure that different fuel types are considered in the calculation of simple OM	Objectivity	The power plant is operated with both types of fuel oil. Such fossil fuels have been considered in the calculation	Closed

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)
12	In Table 6 of page 21-22, fuel type of the Estrella del Mar 2 power plant is described as “Gas Natural y 6”, while the technology used in this power plant is Diesel Engines. Please clarify. Are both Natural gas and Fuel No. 6 used in this power plant? The table 10, page 24-25 also states the same information for this power plant	Objectivity	Both fuels (gas natural and fuel oil #6) are used in this power plant. The plant is a diesel engine with capacity to use natural gas	Closed
13	In Table 10, page 24-25, fuel type of the San Lorenzo power plant is described as “Gas Natural y 6”, while the technology used in this power plant is Steam Turbines. Please clarify. Are both Natural gas and Fuel No. 6 used in this power plant?	Objectivity	Both fuels (gas natural and fuel oil #6) are used in this power plant. The plant is a diesel engine with capacity to use natural gas	Closed
14	In Table 6, page 20-21, San Lorenzo power plant is not included in the list, while the same plant is included in table 10, page 24-25	Consistency	This clarification has been adopted and fixed within the report (table 6)	Closed
15	The submission includes Data delivery Protocol between Coordinator Body of the National Electrical System and the DNA, but reference data sources provided and Quality Control Protocol indicate secondary data sources which are publicly available. Furthermore, the Data Delivery Protocol states that all companies of the electricity sector are required to provide data, which creates ambiguity who is the actual data provider. It is not clear whether primary data collection was undertaken or data collected by government authorities was used in the submission	Transparency and credibility	This clarification has been adopted and fixed by withdrawing the Data Delivery Protocol (DDP). Since secondary data sources which are publicly available were used in the submission, DDP is not relevant for this submission	Closed
16	The Quality Control Protocol provides information on monitoring and cross-check of electricity generation, but it does not explain clearly the monitoring system in place for measurement and cross-check of the data for fuel consumption. This needs to be further elaborated in the submission	Quality Control	Measurement and cross-check of the data for fuel consumption is further elaborated in the QC report	Closed

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)
17	The 2nd paragraph of QC report states "all data collected as part of monitoring will be archived electronically and will be maintained for at least 3 years by the DNA. However, paragraph 38 of QA/QC guidelines stipulates that "DNAs should retain all the data/information for a period of five years after the submission of the standardized baselines"	Quality Control	This clarification has been adopted and fixed within the QC report by adopting a 5 year archival period	Closed
18	Quality assurance system is not elaborated in the submission, which needs to be addressed by providing additional information on the approach for assessing the quality of the data management system	Quality assurance	Assessment of data management system by the DNA is further elaborated in the QC report	Closed
19	Reference to off grid plants, raised during direct call on 15/04/2014	-	This clarification has been adopted and fixed within the report by removing sections 4, 9.2 and 9.3	Closed

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Document information

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