

QUALITY CONTROL (QC) REPORT

Sector	Energy generation/consumption sector															
Name of DNA	Mr. Luis de Shong Permanent Secretary Ministry of Health, Wellness and the Environment															
Primary Person Responsible for QC Procedures	Dr. Vaughn Lewis Manager, Engineering St. Vincent Electricity Services Limited															
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Implementation Dates of QC Procedures	From the date of adoption of standardized baseline															
Please describe how your QC procedures were implemented																
<p>All sources for data were given in the grid emission factor calculation sheet, version 01.0 submitted with CDM-PSB form which clearly outlined data type, unit, description, source and frequency.</p> <p>Table: Key data parameters</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><i>Data</i></th><th style="text-align: left;"><i>Source</i></th><th style="text-align: left;"><i>Method of Cross checking</i></th></tr> </thead> <tbody> <tr> <td>Total annual generation</td><td>VINLEC Reports</td><td>Against Financial Statement report 2010 and 2011</td></tr> <tr> <td>Total fuel consumption</td><td>VINLEC Reports</td><td>Against Financial Statement report 2010 and 2011</td></tr> <tr> <td>NCV</td><td>IPCC 2006</td><td>-</td></tr> <tr> <td>Fuel emission factor</td><td>IPCC 2006</td><td>-</td></tr> </tbody> </table> <p>All data collected as part of monitoring will be archived electronically and will be maintained for at least 5 years by the DNA. All these data should be monitored, unless otherwise stated in the methodologies that are used by specific projects. Some parameters need to be monitored continuously, or need to be monitored periodically. The data will be archived and maintained in such a way that allow for the reproduction of the calculation of the emission factor of the grid.</p> <p>St. Vincent Electricity Services Ltd. (VINLEC)¹ is the sole provider of electricity in St. Vincent, Bequia, Canouan, Union Island and Mayreau where the Company operates its power plants. VINLEC was incorporated in 1961.</p> <p>VINLEC keeps accurate records of each plant / unit to the grid connected generation:</p> <ul style="list-style-type: none"> - Information to clearly identify the plant / unit; - The start date (commercial); - The technology and the type of fuel used; - The net amount of electricity generated in the relevant years; - The consumption of each fuel type in the relevant years; 		<i>Data</i>	<i>Source</i>	<i>Method of Cross checking</i>	Total annual generation	VINLEC Reports	Against Financial Statement report 2010 and 2011	Total fuel consumption	VINLEC Reports	Against Financial Statement report 2010 and 2011	NCV	IPCC 2006	-	Fuel emission factor	IPCC 2006	-
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¹<http://www.vinlec.com/index.asp?articleid=62&zoneid=40>

The data will be presented in such a way that allow for the reproduction of the calculation of the emission factor of the grid.

The information on electricity generation and fuel consumption was obtained from VINLEC and communicated to the DNA to calculate the emission factor, to comply with the QA/QC requirements. Initial data transfer occurred in November 2013 and final/complete data transfer took place in March 2014.

The generation statistics preparation of VINLEC follows the sequence below:

- Most generation data is collected manually by station operators, using log sheets. The Lowmans Bay power station data collection is automated.
- This information is then transferred to excel files to produce station reports.
- Each station report is checked by the Section Head responsible for the station. The section head will prepare a report using excel, for the stations that he is responsible for, and send the report to the Distribution Engineer.
- The Distribution Engineer will review the reports from the three Section Heads and check for anomalies. The Distribution Engineer will also received sales figures from the Customer Services Department. The Distribution Engineer will then compile one report of all generation statistics and send to the Senior Planning Engineer for review.
- Once this review is completed, the Generation statistics are published on a monthly basis using an Excel file.

VINLEC publishes its annual reports per year since 1961. Financial Report 2011 has been published. The work for 2012 report has been completed and will be published next. The report has been slightly delayed until one matter is resolved.

Please specify how the credibility of the data sources was checked.

All data sources were cross referenced. Statistics provided officially by VINLEC, the sole electricity provider, that records the operation of the power plants connected to the grid has been used.

VINLEC has daily, weekly and monthly reporting systems to track performance of the power plants/units 24/7. Generator data is logged daily and stored in appropriate databases. VINLEC records customers' consumption on a monthly bases and data is used for billing. These are two important sources of data used in the preparation on monthly and annual reports.

The data used in the calculation were verifiable by third party as they are available at VINLEC office. Financial reports containing aggregate electricity generation, fuel consumption and sales data are publicly available after one year of the end of reporting period. The data is audited annually by independent Auditors. Currently VINLEC website is under re-construction. Once the website is ready latest reports will be available.

DNA considers that the data is comprehensive and reliable as it is well documented in the Financial reports of VINLEC.

Please specify how the accuracy of the data was checked.

Data quality problems, such as relevance, completeness/comprehensiveness,

consistency, credibility, correctness, accuracy etc. are more likely to happen with primary data sources. In this calculation data from primary source of data (from DNA/submitter point of view) has been cross checked from already available Financial reports published by VINLEC.

Relevance:

The key data used for the grid emission factor calculation is relevant. Both electricity generation and fuel consumption data are collected from VINLEC. NCV and fuel emission factor are sourced from IPCC 2006 Guidelines.

Completeness/Comprehensiveness:

DNA assures the completeness of the data as data available is sufficient for the calculation of the grid emission factor. Generation data for 2010, 2011 and 2012 was accessed.

Consistency:

A consistency check has been done by the DNA by comparing 2010-2012 data with publically available data and did not find significant changes or unexpected trends.

Credibility:

VINLEC formally publishes the data in Financial reports since 2003 which are available at <http://www.vinlec.com/category.aspx?zone=Publications>. DNA has carried out a cross checking activity for the aggregate electricity generation and fuel consumption data by comparing the data collected from VINLEC in excel format and Financial reports of 2010 and 2011 and found the collected data to be credible. There are slight variations in the figures in the Financial Statements (2010 and 2011) and the figures that were provided in excel sheet (raw data) but nothing that will significantly impact the result.

Please specify how the consistency was achieved and how the data vintage provision was met.

The most recent three year (2010 – 2012) data at the time of calculation were used. The latest Financial report available is for 2011. The figures for 2012 report have been completed but the report has been slightly delayed until one matter is resolved.

Please specify how the completeness was achieved.

Calculations follow the methodological tool “Tool to Calculate the Emission Factor for an Electricity System,” Version 04.0, CDM EB 75, Annex 15 and data available fulfil sufficiently and adequately.

The publicly available source (<http://www.vinlec.com/category.aspx?zone=Publications>) and official VINLEC sources include all relevant data and information in aggregate to produce “true and fair” representative standardized baselines. Since VINLEC publishing the Financial reports conducts a year of necessary checks and verification, no missing data issue found in the published/available information.

Please specify how the transparency was achieved.

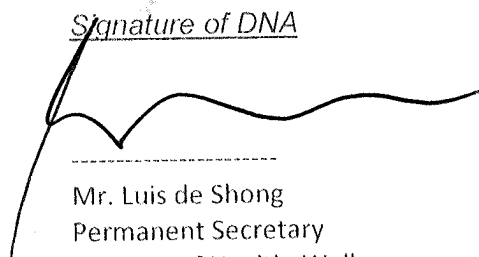
There was sufficient available information to calculate this factor, in an efficient, conservative and transparent manner. VINLEC (<http://www.vinlec.com/article1.asp?articleid=102&zoneid=23>) that keeps statistics on the operation of the power plants connected to the grid ensures transparency.

All data and documents collected are open to third party in a transparent manner and cross referenced in the calculation sheet and calculation report.
Please specify major issues and uncertainties identified during the QC procedures.
Not applicable since data used in the calculation are cross checked from publicly available Financial reports and official sources of the utility company.
Please specify major corrective actions taken during the QC procedures.
N/A
Please justify the conservativeness of the approaches taken during the QC procedures.
Off grid power plants are not accounted for this calculation. As of date there is no CDM project activities registered in St. Vincent and the Grenadines.
Please summarize key findings and present a plan to improve the data quality in the future.
<p>The data and parameters defined in the monitoring protocol, allows keeping the calculation with sufficient rigor and quality.</p> <p>The following is plan to improve data quality in the future:</p> <ul style="list-style-type: none"> • Grid data is located in various excel files, which VINLEC loosely refers to as databases. Presently VINLEC is in the process of having all generator data entered from the log sheets directly into a corporate database via a web interface. The station report will be generated from the database. Eventually all generation statistics would be generated from the corporate database. • Prepare a separate study to estimate emissions from off-grid power as the units not connected to the national grid, can significantly increase the calculated emission factor.

Date to finalize this report

03 October 2014

Signature of DNA



Mr. Luis de Shong
Permanent Secretary
Ministry of Health, Wellness
and the Environment