# Assessment Report for CDM proposed standardized baseline (Version 01.0)

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

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| **Title of proposed standardized baseline:** | Grid emission factor for the Uzbekistan national grid |
| **Reference of proposed standardized baseline:** | PSB-0005 |
| **Sector:** | Electricity generation/consumption sector |
| **Name of DNA:** | Uzbekistan |
| **Dates Reviewed:** | First submission was received on January 31, 2013<br>First assessment was finalized on June 04, 2013 |

**Summary of Proposed Standardized Baseline:**

**Scope and application of the proposed standardized baseline (SB):**

The proposed SB is submitted for a single Host Country, Uzbekistan, and is developed for the purpose of:

- Baseline emission estimation.

The sector to which this proposed standardized baseline applies is the energy generation/consumption sector.

Description of the proposed standardized baseline:

The key data parameters related to this proposed standardized baselines are:

Total annual electricity production;

Net calorific Values of fuel;

Fuel emission factors; and

Total annual fuel consumption

The grid emission factor for Uzbekistan is determined using the "Tool to calculate the emission factor for an electricity system" (version 03.0.0). For the calculation of carbon dioxide emissions at power plants data on net calorific values, power generation and fuel consumption were provided by the SJSC "UzbekEnergo". For power plants where fuel consumption is not available, emission factor was estimated using default plant efficiencies as per Annex I of the tool. As no local carbon dioxide emission factors for different fuel types are available the IPCC 2006 default values at the lower limit of uncertainty at a 95 per cent confidence interval were applied.

The relevant project electricity system is the Uzbekistan national grid.

As low cost/must run plants constitute 14,35 per cent of total electricity generation , which is less than 50 per cent of the Uzbekistan grid generation in the average of the five most recent years (2007 – 2011), the Simple OM method is selected.

The build margin is calculated using the data for eight power plants which total energy generation in 2011 was 12,353,100 MWh, or 26.24 per cent of the total generation in Uzbekistan. The list of power plant includes plants older than 10 years but does not include CDM projects.

Data vintage required is three successive years of plant data for each power plant.

Complete and up-to-date information and data on the operation of the Uzbekistan power grid, including power generation and fuel consumption by individual plants is maintained by the SJSC “UzbekEnergo”.

Assessment methodology:

The assessment consisted of the following:

Initial desk review and findings – first, second and third rounds of submissions;

Review of the fourth round of submission based on initial findings;

Issue of the draft assessment report including clarifications;

Resolution of clarifications;

Issue of the final assessment report.

Review of documents:

A desk review was performed on the below data/information submitted as part of the proposed standardized baseline.

First submission dated 25 December2012:

Proposed standardized baseline (F-CDM-PSB) dated 12 December 2012 (version 01);

CO2 Emission Factor Calculation for the Uzbekistan National Grid (2011) version 02.0 dated 12 December 2012;

Uzbekistan grid emission factor calculations version 03.0 dated 12 December 2012;

List of registered projects from the Republic of Uzbekistan as of 31 December 2010.

Second submission dated 31January2013:

Proposed standardized baseline (F-CDM-PSB) dated 31 January 2013 (version 01);

CO2 Emission Factor Calculation for the Uzbekistan National Grid (2011) version 03.0 dated 28 January 2013;

Grid emission factor version 01.1 dated 28 January 2013 pdf and excel files.

Third submission dated 01March2013:

Proposed standardized baseline (F-CDM-PSB) dated 28 Februay 2013 (version 01);

CO2 Emission Factor Calculation for the Uzbekistan National Grid (2011) version 03.1 dated 28 February 2013;

Grid emission factor version 01.1 dated 28 January 2013 pdf and excel files.

The initial findings and observations were communicated to the DNA on 04 June 2013, in response to which the DNA submitted additional documentation and clarification on 21/06/2013.

Assessment findings and resolution:

Findings related to data collection, process and compilation to establish the proposed standardized baselines are identified in Appendix-1.

| Summary of Assessment: | |
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| **Requirements** | **Explanation** |
| **The data quality was checked before/during/or after data collection:** | Data quality has been checked during the data collection, aggregation and processing. |
| (a) QC system (resource/procedure) was implemented. | All primary raw data are provided by the individual power plants using established data delivery protocols. UzbekEnergo performs aggregation of data and conducts review of the data sets for consistency and accuracy in accordance with internally established QC/QA system. The data for fuel consumption and electricity generation are cross-checked with invoices. The data received from UzbekEnergo are screened and technically reviewed by experts from the Uzbekistan DNA.<br><br>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 was clearly documented (e.g. QC report). | No QC report has been produced/submitted with this SB, however the QC system was transparently explained in the documentation submitted on 21/06/2013 (Procedures for data gathering, Quality Control and Quality Assurance for the Standardized Baseline Development "Grid emission factor for the Uzbekistan national Grid"). |
| **Were all required documents and data available for assessment?** | All the data were easily available and accessible for assessment. |
| **The proposed standardized baselines were established through consultation processes:** | The primary data used for the SB were established through consultation process as explained below. |
| (a) The sector or data providers were engaged and communicated enough to provide valid inputs/data. | All power plants submit data to UzbekEnergo in pre-set form of data delivery protocols. |
| (b) Stakeholders were invited to provide inputs and comments where applicable. | Stakeholders' inputs were gathered. |
| (c) The public consultation report was clearly documented if applicable. | Some of the data used for the standardized baseline are not public but expert and stakeholder feedback was provided on the data gathering process and calculation of grid emission factor |
| **The data quality objectives and the general provisions of the QA/QC Guidelines were met. If the QC report is available, this session can be skipped unless further explanation is needed (when conservative approaches were taken, further explanation is required):** | The data quality objectives and QA/QC guidelines were met as explained below: |
| (a) Relevant data were used to the establishment of sector-specific standardized baselines. | The key data collected are electricity generation, fuel consumption per type of fuel, NCV of each fuel for all power plants in the country. |

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| | (1)Electricity generation was measured using calibrated and certified meters located at each plant. The meters installed have a minimum accuracy class 0.5 and were calibrated at least every four years in accordance with relevant national standard.<br><br>(2) Fuel consumption data were measured either with flow meters ( in the case of natural gas) or through measurements using scales (coal and heavy fuel oil). All meters are certified as per relevant national standards. The annual consumption is established by taking inventory at the beginning and end of each year (in case of coal and heavy oil) and the fuel purchase data through the year.<br><br>(3) The NCV for the fuel used in each power plant were measured by specialized certified laboratories (e.g. State Enterprise “Center for Provision of Metrological Services” in Tashkent) under the Uzbekistan National Agency for standards, metrology and certification “UzStandart”. The most recent available data for 2011 were used for deriving the standardized baseline.<br><br>Based on the above justification from SB developers this can be concluded that the relevant data is used in SB. |

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| (b) The data scope was comprehensive enough to produce “true and fair” representative standardized baselines in the particular sector. | The comprehensiveness of the data scope to produce “true and fair” representative standardized baseline by applying a clear procedure (explained in steps below) with the aim of only capturing data and information which would be representative and credible with regard to emissions associated with the electricity generation.<br><br>**Step 1: Selection of the scope of data to be collected**<br><br>The data were requested from all existing grid-connected plants in Uzbekistan. For consistency the data received were checked by DNA against the reports of all existing power plants. There were no cases of omissions and non reporting.<br><br>**Step 2: Collection of data**<br><br>The data were collected according to a specified data format valid for all power plants. The data format predefined the type of data, the units in which the data should be reported and the data vintage.<br><br>The raw data were screened internally and aggregated on monthly, every three months and annual basis by UzbekEnergo. The annual report preparation involved also review of entire data set for consistency and accuracy.<br><br>**Step 3: Review of data**<br><br>The aggregated data received from UzbekEnergo were reviewed by Uzbekistan DNA and its technical experts. The data were compared against data from previous years and checked for any inconsistencies.<br><br>**Step 4: Handling of missing data**<br><br>For power plants where fuel consumption is not available, emission factor was estimated using default plant efficiencies as per Annex I of the “Tool to calculate the emission factor for an electricity system” (version 03.0.0), which is considered to be conservative.<br><br>Considering the above explanation from SB developers it can be concluded that the data used in SB is complete. |
| (c) The key data and information are consistently presented. | All data were collected and aggregated into the same format to make the datasets compatible with other related data and to allow comparison.<br><br>The data for electricity generation which was metered was cross-checked against invoices for payment of electricity delivered to the grid.<br><br>The data for fuel consumption which was measured by flow meters or scales was compared with quantities as per the fuel purchase.<br><br>The data for NCV established through laboratory analyses are comparable with the IPCC default values for the same fuels. |

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| | Based on the explanation from SB developers it can be concluded that the procedure is followed to check the consistency of the data used in SB. |
| (d) The credibility of the data sources was ensured. | The data gathering involves primary data sources – power plants in the country. The data collected through measurement were also cross-checked through other means.<br>The data were checked by UzbekEnergo, which is a national entity that processes full, complete, accurate and traceable information on the operation of the energy sector.<br>The data were reviewed By Uzbekistan DNA and its technical experts.<br>Based on the above explanation from SB developers it can be concluded that the data used in SB is credible. |
| **(e)** The most recent available data were utilized. If applicable, the pre-determined data vintage was met. | Data vintage cover the period of 2009 – 2011 which can be considered current and therefore the dataset meets the quality objective of currentness. The standardized baseline is to be updated every three years which will ensure the currentness of the future updates.<br>Based on the above justification from SB developers this can be concluded that the most recent available data is used in SB. |
| (f) Duplications and errors were avoided or corrected. | The UzbekEnergo collected and processed raw data in accordance with internal QC/QA procedures which address the treatment of duplication and errors.<br>The Uzbekistan DNA also reviewed data sets and if any inconsistencies were identified these were corrected in consultations with UzbekEnergo.<br>With the above explanation from SB developers it can be concluded that the accuracy of the data is justified. |
| (g) If any, assumptions or interpretations for data processing/ calculations were justifiable. | Based on the information and justification provided by SB developers it can be concluded that the assumptions or interpretations for data processing/ calculations used in SB are justifiable. |

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| (h) The security of datasets including confidentiality was well maintained in accordance with pre-established procedures if requested. | The sources of the data used for the calculations identified in the excel sheet were arrived from a database maintained by UzbekEnergo, even as the underlying database is not publicly available due to confidentiality of these datasets.<br><br>Based on this information submitted by SB developers it can be concluded that the security of database is maintained. |
| **The assessment is concluded successfully, based on the overall evaluation.** | The data used for development of SB is meeting the data quality objectives and general provisions of 'Guidelines for quality assurance and quality control of data used in the establishment of standardized baselines'. |
| **Date the assessment is sent to the focal point:** | |

# Appendix-1: Findings and resolution

| CL No. | 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 |
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| 1 | As per paragraph 12 of the "Guidelines for QA/QC of data used in the establishment of standardized baseline", the DNAs should develop a QA/QC system that outlines QA/QC activities, processes, schedule and responsibilities. Therefore the DNA should provide information on the QA/QC system that was implemented to assure itself of the quality of data and information included in the proposed standardized baseline with respect to this submission. It is not expected to keep documented QA/QC system, however, the principles established to implement the general provisions and data quality objectives of "Guidelines for QA/QC of data used in the establishment of standardized baseline" should be known and followed.<br>In the context of a QA/QC system following are the findings on sample basis and DNA is expected to check whether similar findings exist in other part of the system, before responding in an exhaustive manner:<br>1.1. The data established for fuel consumption and power generation from individual TPP in the spreadsheet "Grid Emission Factor (Uzbekistan)" needs to be supported by information related to the gathering of raw data. The manner in which this data and information were collected, processed and compiled into the spreadsheet should be elaborated. This can be supplemented with a protocol and/or procedures that were implemented by the DNA (see example in Appendix 2 "Quality Control (QC) Report (sampler)" of the "Guidelines for QA/QC of data used in the establishment of standardized baseline").<br>1.2. The DNA would require to submit additional evidences for the following data/information provided through the spreadsheet "Grid | General provisions and data quality objectives of "Guidelines for QA/QC of data used in the establishment of standardized baseline" | 1.1 The manner of data gathering as well as the applicable QC/QA procedures is described in the attached file "1.1 Procedures for Data Gathering, QA and QC.pdf". Additionally, annexes (confidential) are supplied for illustrative purposes showing examples of calibration certificates, letters exchanged between the DNA through Ministry of Economy of Uzbekistan and UzbekEnergo. The DNA further confirms that the QA/QC issues are addressed through the entire system.<br><br>1.2 (a) The NCVs for the fuel used in each power plant are determined by specialized certified laboratories (e.g. State | Based on additional information provided it can be concluded that the general provisions and data quality objectives of "Guidelines for QA/QC of data used in the establishment of standardized baseline" are met. |

| CL No. | 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 |
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| | Emission Factor (Uzbekistan)":<br>(a) source of the Net calorific Values (even as the NCV are obtained from data presented by PJSC Uzbekenergo, the source of these values for PJSC Uzbekenergo needs to be established. For example these could be in the form of laboratory analyses, peer reviewed literature data or other appropriate reference(s)); and<br>(b) type of generation technologies of grid power plants, Novo-Angren TPP and Mubarek CHP in build margin calculations, where default efficiency values have been applied. | | Enterprise "Center for Provision of Metrological Services" in Tashkent) under the Uzbekistan National Agency for standards, metrology and certification "UzStandart". The details are described in the file "1.1 Procedures for Data Gathering, QA and QC.pdf". Examples of the laboratory certificates and the standards are provided in Annex 4, Annex 5 and Annex 7.<br>(b) We would like to clarify that the Novo-Angren TPP is an electricity-only generating plant using steam turbine technology, while the Mubarek CHP is combined heat and power plant, open cycle type. Information is provided in the attached file "1.2 (b) Technology in Novo_Angren TPP and Mubarek CHP.pdf". | |

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## Document information

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