



[REPORT TASK I.2.3-I.2.4] ASSESSMENT OF AVAILABILITY AND QUALITY OF THE DATA AND GAP ANALYSIS

EXECUTIVE SUMMARY

An essential part of this NAMA project is to design a national-wide and sectoral system for the measurement, reporting and verification (MRV) of the actions to mitigate Greenhouse Gas (GHG) emissions in the cement sector in Viet Nam.

In this context, this report aims to assess the data availability and its quality at both national and installation levels in order to identify a suitable dataset and requirement of data, and subsequently provide guidance for developing data collection systems in Viet Nam to serve the purposes of the project. This study also focuses on data gaps between the data needs of the project and the existing data as well as barriers for data collection in order to give recommendations to improve the data collection in both terms of quantity and quality.

The report provides an overview on the existing policies, regulations on and common practices in data reporting and management in the cement industry in Viet Nam. It describes the current GHG reporting systems in Viet Nam relevant to the cement sector under the two National Communications on (Greenhouse Gas) GHG emissions (NC) in 2003 and 2010; The current data monitoring and recording

practice at cement plants from the desk reviews and findings from the site visits of the project's team in August 2014. The report recommends that signing a mutual confidentiality agreement between each cement plant and the data manager who will regulate on how information will be managed and used to avoid unnecessary disclosures is vital to facilitate data providing by cement companies.

The structure of data on energy and GHG emissions at a cement plant is organised in accordance with the cement production. The requirement for each parameter collected is described in accordance with Cement Sustainability Initiative (CSI) CO₂ and Energy Protocol/Version 3.1 by (World Business Council for Sustainable Development) WBCSD and the common practice at cement plants. The report presents the approach for data collection that includes three major steps, namely gathering existing data; gathering new data; and combining data for use. The desk review, interviews with experts and site visits are the main approach for the first step. The survey methodology via questionnaire form is proposed for gathering new data. The report emphasizes that the most challenge to conduct this survey is that it totally depends

on the volunteering commitment of a plant in providing data. So far, no regulation and sanctions are in place on data collecting and reporting in this sector.

To fit best to the country's circumstances, the report structures the operating cement plants to be surveyed into three major groups including Joint - venture companies; Vietnam Cement Industry Corporation (VICEM) companies and Private companies. The key characteristics of each group are summarized in order to propose the suitable approach to each group to have the best feedbacks from them.

The assessment of the data availability and applicability at the national level focuses on types and actual status of data available, and assessment on its availability against the data demanded in the context of the project. The three types of data and its major sources are figured including:

- Sectoral production and performance data from the National Master Plan and its two updates, the surveys organized by the Ministry of Construction (MOC), Viet Nam National Cement Association (VNCA) periodically published reports, VICEM internal reports and other sectoral reports.
- GHG emissions reports from Ministry of Natural Resources and Environment (MONRE) to fulfil the obligations under the United Nations Framework Convention on Climate Change (UNFCCC), i.e. NCs and Biennial Update Reports (BURs) and data may be available internally at VICEM.
- Sectoral energy consumption and potential saving: data collected by Ministry of Industry and Trade (MOIT) from periodically submission of cement companies on energy consumption and data may be available internally at VICEM.

The applicability of each source in the context of this project is evaluated.

At a facility level, the assessment of data available via desk review and site visits shows that the current monitoring system and recording practice at the cement plants allow them to gather data of different aspects including operational performance (e.g. capacity, clinker and cement output), energy consumption (e.g. fuel consumption, electricity consumption), and additive-related information. There are currently 55 operating cement plants (installations) with 75 production lines in total in Viet Nam, of which 16 plants with 24 production lines have provided their recorded data under the recent Joint Crediting Mechanism (JCM) survey of the MOC in early 2014.

The report presents the assessment results of the current data availability of 16 plants in terms of Operational performance; Energy consumption; and Additive-related data. The key findings are:

- The data collected from 16 cement plants represents 44% of designed capacity of total 55 cement plants. Therefore, the survey under this project should target all the operating cement plants and more efforts are needed to gather detailed data from the plants that have no information so far.
- The data of energy consumption is also available at the cement plants. However, specific parameters monitored and frequency of monitoring and recording are varying by different installations.
- The data available of 16 plants shows that the most popular additives are pozzolana, slag from blast furnace, and fly ash from power stations. These are found in majority of cement products produced by 16 plants.

The site visits under this project reveal that the data of gas emissions (especially CO₂ emissions) is not frequently monitored and recorded, although all plants provide general information on gas emissions to serve the periodically environmental report that is submitted to the MONRE/DONRE.

The assessment of quality and traceability of data from each of the three major sources mentioned above confirms that the only database available so far that is aggregated from installations is that of 16 plants under the JCM survey.

This database represents for 13 plants are in the North and North Central (account for 29% of total designed capacity of total 55 cement plants) and 3 plants in the South with the total designed capacity of 8% of the total.

In terms of data compatibility, it is expected that the survey under this project will bring the most comprehensive energy and CO₂ data set collected from cement installations in Viet Nam, so that the compatibility analysis will be conducted when the survey under this project is finalized.

An in-depth analysis on the gap between existing data and new data once again at both national and facility levels to identify which of the data needs of the project can be met by existing data and which will have to be collected through new surveys. At the national level, there is no comprehensive national database available that is publicly accessible and regularly updated and can be used for the purpose of the project, except data reported in the National GHG Inventories and NCs. At a facility level, the primary data from cement plants is not sufficient to conduct a thorough gap analysis for each parameter. Instead, a gap analysis of minimum data required for the key parameters is conducted. The gap is assessed against the elements of accuracy, completeness, consistency and comparability. Then the consequential uncertainties that are attached to the gap are identified. Barriers constituting data gaps and solutions to

overcome the barriers are also discussed and proposed in this chapter.

The conclusion drawn from this chapter is that there are gaps existing between the dataset required for the project and the existing dataset at both levels - national and facility ones in terms of accuracy, completeness and consistency. These gaps are very likely to impose a high uncertainty on the outcomes calculated/aggregated based on the current dataset.

To eliminate these gaps is an essential task for the project in the coming months of this project. In order to be able to set up a trend of emission under this project in the next task, the solutions have been presented including but not limited to:

- Increasing the top management awareness of this NAMA project;
- Providing relevant guidance and comprehensive methodology for data collection as well as incentives to data suppliers;
- Conducting capacity building with focusing on technical assistance in collecting and managing data;
- Continuous support from the MOC in promoting the contacts and data sharing with other ministries and associations as well as in signing the confidentiality agreement; and
- Seeking further data from other sources.

In a longer term, these solutions can also be considered and relevant for the implementation of the MRV in the cement sector and be part of the NAMA as delivered activity e.g. capacity building on data requirement and collection. Especially, they can guide how information can be collected, provided and managed in this sector.

The report concludes that the national database in the sector is not available yet

because of fragmented data collection and management at different ministries and authorities. Meanwhile, the primary dataset at the facility level covers only 33% (17 installations) of the total number of 55 operating installations, accounting for 44% of the designed capacity of the total of 55, and more than 40% of total national cement production output. The current dataset is not yet sufficient to conduct the next studies of the project, especially the one on the establishment of the GHG emission trends. Hence, the data survey that will be sent to all operating cement plants under this project should be one of the main priorities in the coming months.

This study figures out a number of barriers for data collection at a facility level ranging from technical issues, capacity and/or knowledge, commitment of the plants to the data accessibility that constituted such data gaps. The recommendations on the solutions to overcome such barriers are included:

- Developing a Viet Nam cement industry energy and CO₂ MRV system and database that is compatible with the international industry best practice;
- Raising cement industry top management awareness of a Viet Nam energy and CO₂ information system, among others by communicating the business and regulatory incentives, benefits and risks of participating to such a system;
- Showing compelling examples from the international cement industry;
- Using this system to harmonize the data inquiries from different ministries, eliminating multiple data requests from different ministries;
- Starting with a coalition of willing cement companies and expanding step-by-step;

- Proposing and giving guidance on how to calculate, extract data and best estimation from the existing dataset available.
- Setting up an appropriate data management body who will guarantee the confidentiality of the data provided and manage as well as control the data collection, database and data usage in the sector in a long run.
- The activities and methodologies for data collection and measurement have to be reviewed regularly to enable a progressive and efficient improvement in the inventory.
- Conducting capacity building activities for management and technical experts of the cement plants.
- Providing international technical assistance on best practices in data management.
- Introducing a confidential agreement with data suppliers to support consistent and continuing information flows.
- Conducting more meetings/interviews with potential data providers to evaluate the status of data availability, its relevance to this project and conditions to get the data.
- Considering data procurement via different channels can be considered to collect existing data e.g. database of VNCA or VICEM.

They are solutions to eliminate the gaps in order to be able to set up a trend of emission under this project in the next task. Nonetheless, these solutions can also be considered and relevant for the implementation of the MRV in the cement sector and guide how information can be collected and provided in a longer term.

Finally, the long term solutions to improvements at national level regarding data sharing among line ministries and authorities are proposed, including:

- Publishing national database with regularly updates.
- Further collaboration among ministries to establish an effective network between different ministries and authorities in which relevant

dataset can be accessible by and shared with others.

In the National GHG Inventories, Tier 2 method should be applied for higher level of accuracy in the calculations of GHG emission in the cement sector.

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