

Terms of Reference

Assessment on the development of the minimum energy performance (MEP) for the cold chain sector and the minimum energy performance for commercial refrigeration products (MEPP)

1. Background

Access to refrigeration plays a significant role in inclusive economic development by means of a cold chain that links agricultural products of smallholder farmers in rural areas to a wider market, increase their incomes and raise their quality of life. Cold chains ensure the distribution of vaccines. It also prevents spoilage and food losses, and ensures the availability of buffer stocks in times of crisis or disasters.

In terms of environmental impact, cold chain systems and technologies are deemed a substantial and growing contributor to climate change due to hydrofluorocarbons (HFC) use and high energy consumption. HFCs are considered as “super GHGs” that are up to 4000 times more potent than carbon dioxide. Without the Kigali Amendment, HFC emissions would add the equivalent of an additional 78 to 90 gigatons of carbon dioxide in the atmosphere for all cooling sectors by 2050. This could set back the goal set by the Paris Agreement which seeks to limit warming to 1.5 degrees by mid-century.

The Philippines’ share of greenhouse gas (GHG) emission is a small fraction comprising 0.33% of the overall total, however, it bears the brunt of climate change impacts as an island nation with high vulnerability. For this reason, the government is poised to implement policies that addresses GHG reduction targets while ensuring energy security and sustainable development.

RA 11285, also known as the Energy Efficiency and Conservation Act of 2019, provides for the development of minimum energy performance for energy consuming products as well as key sectors in the country which are envisioned to encourage energy savings while contributing to the country’s nationally determined contribution (NDC) targets. RA 11285 provides for setting energy efficiency targets for establishments with high energy consumption classified as Designated Establishments 1 and 2. It also provides for minimum energy performance standards for transport and appliances, as well the key sectors in the country. Under this law, energy efficiency projects may avail incentives, such as tax and duty free importation and income tax holiday.

2. Understanding the Consulting Services for the Development of the Minimum Energy Performance (MEP) for the Cold Chain Sector

a) Project Background and Objectives

The Global Partnership for Improving the Food Cold Chain in the Philippines (FCC) project aims to identify, develop and stimulate the application of low-carbon, energy efficient refrigeration innovation technologies and business practices in the Philippines, for use throughout the food cold chain whilst increasing food safety and security. It is implemented by the United Nations Industrial Development Organization (UNIDO), shecco, Department of Environment and Natural Resources (DENR) and Technical Education and Skills Development Authority (TESDA), with funding from the Global Environment Fund (GEF). It has three components:

- (i) policy and regulatory assessment on the use of low carbon and energy efficient technology within the food CC
- (ii) awareness and capacity building on the use of energy efficient, climate friendly and safe alternatives in the food CC
- (iii) technology transfer and establish partnerships among key stakeholders.

The Project collaborates with the Department of Energy - Energy Utilization and Management Bureau (DOE-EUMB) to promote energy efficiency in the cold chain industry through its support for the development of the minimum energy performance (MEP) for cold storage facilities and minimum energy performance for commercial refrigeration products (MEPP).

b) Proposed Activities and Scope of Work

Proposed Activities. The implementation of project activities shall be for a period of five (5) months from contract signing. The activities will cover primary and secondary data gathering, technical working group meetings and validation workshops. The consultant is expected to coordinate with UNIDO, the Department of Energy (DOE) and the National Cold Chain Committee on the primary and secondary data requirements and other activities within the scope of this terms of reference. Collaboration, ownership, and knowledge development are inherent features of the project and relative to this, the consultant is expected to work closely with the technical working group to ensure that they are involved, and to facilitate transfer of knowledge to the concerned agency and its staff by engaging counterparts in concerned project activities through various modalities (e.g. mentoring, coaching, etc.) such that lessons are institutionalized. Upon engagement and prior to undertaking any activity, the consultant is expected to submit an Inception Report describing in detail its proposed Methodology, Work Plan and Schedule, among others.

Scope of Work: The assessment will cover two (2) components: 1) Cost-benefit analysis on the development of the minimum energy performance (MEP) for the cold chain sector; and, 2) Institutional and political assessment on the development of the minimum energy performance policy for the cold chain sector and the minimum energy performance for commercial refrigeration products (MEPP). Component 1 will be conducted by an external consultant, while Component 2 will be conducted by the FCC project team through UNIDO. The tasks of the Consultant and the project team will be done in a parallel timeframe and they are expected to work together in terms of coordination, data gathering and scheduling of activities. At the minimum, the Consultant and the FCC project team are expected to deliver the following.

- 1) Cost-benefit analysis on the development of the minimum energy performance (MEP) for the cold chain sector.
 - Energy and refrigerant baseline scenario analysis of the cold chain sector
 - Gather data, varying from the comprehensive to the inferred/anecdotal, on current energy consumption levels and refrigerant use of industrial (e.g. cold storages), commercial (e.g. reach-in coolers, refrigerated cabinet displays, chillers) and transport refrigeration (e.g. refrigerated vans, refrigerated containers) systems in Philippine setting
 - Gather global data and international benchmarks of cold chain (industrial, commercial and transport) technologies with higher energy efficiency and lower GHG emissions
 - Energy efficiency and low-GWP pathways for the cold chain sector

- Identify energy efficiency and low-global warming potential (GWP) design options for industrial, commercial and transport refrigeration and their expected incremental costs and energy savings
- Develop models that can be used to project energy impacts associated with varying efficiency scenarios in industrial, commercial and transport refrigeration
- Determine the total national costs and benefits including both financial benefits, energy savings and environmental benefits (e.g. greenhouse gas reduction in energy and refrigerant use).
- Recommendations for the TWG on the minimum energy performance (MEP) for: 1) industrial refrigeration (e.g. cold storages); 2) commercial refrigeration (e.g. reach-in coolers, refrigerated cabinet displays, chillers); and, 3) transport refrigeration (e.g. refrigerated vans, refrigerated containers)

2) Institutional and political assessment on the development of policy instruments for the minimum energy performance (MEP) for the cold chain sector and the minimum energy performance for commercial refrigeration products (MEPP).

- Institutional capacity assessment
 - Review the institutions that will implement the policy instruments for the MEP for cold storage facilities and the MEPP (e.g reviewing relevant aspects of their rules, procedures, capacity resources, interagency relations, issues and challenges in previous program implementation)
 - Review the ongoing support to strengthen implementing institutions
 - Document capacity gaps identified based on a diagnostic and capacity assessment and recommend capacity building and training for implementing institutions
- Political economy analysis
 - Map the actors involved in policy implementation
 - Analyze political economy in terms of implementing MEP for the cold chain sector and the MEPP.
- Recommendations for the TWG on ways forward with the policy development

3. Activities and deliverables

The table below presents the general design of the scoping study with an indicative timeline of 20 weeks (5 months).

Key Activities/ Steps	Methodology	Expected Outputs	Timelines
1. Cost and benefit analysis on the development of the minimum energy performance policy (MEPP) for the cold chain sector			
1.1 Preparation of inception report and data collection tools (e.g. survey forms, interview guides, etc.)	- desk research - virtual meeting	Inception report	Week 1-2
1.2. Presentation and validation of the inception report, methodology and data collection tools with the TWG	- online/face-to-face TWG meetings		Week 3

Key Activities/ Steps	Methodology	Expected Outputs	Timelines
1.3. Data gathering	- desk research - emails - phone/video calls - face-to-face meetings - online surveys		Week 4-10
1.4. Preparation of the draft assessment report containing: 1) Energy baseline scenario analysis of the cold chain sector; 2) Energy efficiency and low-GWP pathways for the cold chain sector; 3) Total national costs and benefits; and, 4) Recommendations for the TWG on the minimum energy performance (MEP) for industrial, commercial refrigeration and transport refrigeration	- desk research	Draft assessment report	Week 10-14
1.5 Coaching and mentoring session on CBA	- online/face-to-face TWG meetings	Documentation	Week 12-14
1.6. Presentation and validation of the assessment report with the TWG	- online/face-to-face TWG meetings		Week 15
1.7. Revisions based on TWG comments and submission of the final draft assessment report	- email	Final draft assessment report	Week 20
2. Institutional and political assessment on the development of the minimum energy performance policy (MEPP) for the cold chain sector and the minimum energy performance (MEPS) for commercial refrigeration products report			
2.1 Preparation of inception report and data collection tools	- face to face/ virtual meeting		Week 1-2
2.2 Presentation and validation of the inception report and methodology with the TWG	- emails - virtual meeting - phone calls		Week 3
2.3. Data gathering	- desk research - emails - phone/video calls		Week 4-10

Key Activities/ Steps	Methodology	Expected Outputs	Timelines
	- face-to-face meetings - online surveys		
2.3 Preparation of the draft institutional and political assessment report	- desk research	Draft assessment report	Week 10-14
1.5. Presentation and validation of the assessment report with the TWG	- online/face-to-face TWG meetings		Week 15
1.6. Revisions based on TWG comments and submission of the final draft assessment report	- email	Draft assessment report	Week 20

4. Deliverables and Timing of Submission

ACTIVITY	DUE DATE	DELIVERABLE
Workplan preparation	April 15, 2022	Work plan detailing methodology, list of respondents and schedule of data gathering
Development of inception report	April 15, 2022	Inception report
Preparation of the draft cost and benefit analysis on the development of the minimum energy performance policy (MEP) for the cold chain sector	July 8, 2022	Draft report
Coaching session on CBA	July 8, 2022	Documentation
Preparation of the draft institutional and political assessment on the development of the minimum energy performance policy (MEPP) for the cold chain sector and the minimum energy performance (MEPS) for commercial refrigeration products report	July 8, 2022	Draft report
Final report	July 30, 2022	Final report with annexes including raw data and documentation of coaching session

5. Acceptance Criteria of Deliverables

1. Work plan and data gathering tools are manageable and realistic with a reasonable timeline for activities.

2. The reports satisfy contents stated above and written with technical rigor using up-to-date information and quality data.
3. The data fulfill the need to inform policy decisions pertaining to implementing energy efficiency standards in the cold chain industry.

6. Schedule of Payment

	DELIVERABLES	% Budget	AMOUNT (PhP)	DUE DATE
1	Workplan	10%	70,000	April 15, 2022
2	Inception report	10%	70,000	April 30, 2022
3	Draft cost and benefit analysis on the development of the minimum energy performance policy (MEPP) for the cold chain sector	30%	210,000	July 8, 2022
4	Final report, including summary of data collected.	50%	350,000	July 30, 2022
	TOTAL		PHP 700,000	

*The budget will only cover deliverables under Component 1.

7. Required Competencies

Education:

University degree in economics, engineering, environmental science, development studies, or any related field.

Technical and Functional Experience:

- Minimum 8 years of experience in economics, energy research, environmental science or related field.
- Minimum 3 years of experience in the conduct of research and/or policy analysis.
- Work experience with national government, civil society, international organizations will be an advantage.
- Proven knowledge on cost-benefit analysis required and its application to policies related to low carbon development is highly desirable.
- Experience in policy development processes with DOE-EUMB, DTI-BPS, DENR-EMB is highly desirable.

8. Content of the proposal

The proposal should include CV of the proponent, a description of the approach and methodology for implementing tasks/activities of this ToR, work-plan, time schedule and budget.

Please submit proposals to garibay_gb@yahoo.com and mvaldez.gpfcc@gmail.com not later than March 15, 2022.