



Project Implementation Report

(1 July 2021 – 30 June 2022)

Project Title:	<i>Global Partnership for improving the food cold chain in the Philippines</i>
GEF ID:	<i>9921</i>
UNIDO ID:	<i>170126</i>
GEF Replenishment Cycle:	<i>GEF-6</i>
Country(ies):	<i>Philippines</i>
Region:	<i>SA - Southeast Asia</i>
GEF Focal Area:	<i>Climate Change Mitigation (CCM)</i>
Integrated Approach Pilot (IAP) Programs¹:	<i>NA</i>
Stand-alone / Child Project:	<i>NA</i>
Implementing Department/Division:	<i>ENV / MPD</i>
Co-Implementing Agency:	<i>NA</i>
Executing Agency(ies):	<i>Department of Environment and Natural Resources-Environmental Management Bureau (DENR-EMB), TESDA, shecco, PFAN</i>
Project Type:	<i>Medium-Sized Project (MSP)</i>
Project Duration:	<i>36</i>
Extension(s):	<i>1</i>
GEF Project Financing:	<i>USD 2,000,000</i>
Agency Fee:	<i>USD 190,000</i>
Co-financing Amount:	<i>USD 25,509,500</i>
Date of CEO Endorsement/Approval:	<i>5/1/2019</i>
UNIDO Approval Date:	<i>10/11/2019</i>
Actual Implementation Start:	<i>10/11/2019</i>
Cumulative disbursement as of 30 June 2022:	<i>USD 904,330</i>
Mid-term Review (MTR) Date:	<i>NA</i>
Original Project Completion Date:	<i>10/10/2022</i>
Project Completion Date as reported in FY21:	<i>10/10/2022</i>
Current SAP Completion Date:	<i>10/10/2022</i>
Expected Project Completion Date:	<i>12/31/2023</i> <i>Extension has been requested and will be elaborated further under</i>

¹ Only for GEF-6 projects, if applicable

	<i>section III.2</i>
Expected Terminal Evaluation (TE) Date:	6/30/2023
Expected Financial Closure Date:	6/30/2024
UNIDO Project Manager²:	<i>Adnan Atwa</i>

I. Brief description of project and status overview

Project Objective		
<i>The overall objective of the project is to identify, develop and stimulate the application of low-carbon, energy efficient refrigeration innovation technologies and business practices for use throughout the food cold chain whilst increasing food safety and security.</i>		
<i>Project Core Indicators</i>	<i>Expected at Endorsement/Approval stage</i>	
<i>6</i>	<i>Greenhouse Gas Emissions Mitigated (metric tons of CO2e)</i>	<i>Direct emission reduction: Direct emissions reduction of 5,722 tonnes of CO2 equivalent, with 319 MWh of Total energy saved Indirect emission reduction: GEF bottom-up methodology – Indirect emissions reduction of 143,048 tonnes of CO2 equivalent through all the activities GEF top-down methodology –through all the activities: 479,815 tonnes of CO2 equivalent with GEF causality factor)</i>
<i>11</i>	<i>Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment</i>	<i>At least 200 key stakeholders are educated on energy-efficient and climate-friendly cold chain technologies and practices: 100 women/100 men. Education & training for at least 50 local engineers, system suppliers and end-users on the availability and use of global innovative CC technology provided: 20 women/30 men</i>

Baseline
<i>Fresh and safe food is critical to the Philippines. It is home to 100 million people and is the seventh most populated nation in Asia and the twelfth most populated in the world. While the Philippines may be regarded as a newly industrialized country that is transitioning from an agricultural economy to one based more on services and manufacturing, an adequate cold chain is critical to feed such a large population and sustain its export/import potential. The cold chain industry in the Philippines, which currently has a holding capacity of approximately 300,000 metric tons, is at a delicate equilibrium between capacity and demand. At this point, there is strong potential for the industry to grow, given that consumption levels are currently low and that economic development will enhance purchasing power.</i>
<i>Refrigeration impacts the global warming through the emission of refrigerants that account for around 20% of total CO2-equivalent emissions from refrigeration and impacts through energy consumption of around 80% of CO2-equivalent emissions. Simply put, an impact reduction on CO2-equivalent emissions from refrigeration is therefore possible by firstly improving energy efficiency of the systems and the overall cold chain and secondly by adopting refrigerants with 0 or low climate impact, such as natural refrigerants. The project combines both, the reduction of refrigerants emissions, as well as the reduction of energy use throughout the cold chain.</i>
<i>Worldwide it is estimated that 40% of all foods require refrigeration, and that 15% of the electricity consumed throughout the world is used for refrigeration. With the rising concern over climate change, global warming as well as</i>

² Person responsible for report content

the insecurity in development and fluctuations in energy costs there is increasing pressure to make significant reductions in carbon emissions and energy use. Furthermore, the inappropriate management of the cold chain in the food industry is widespread, especially in developing countries, due to severe issues related mainly to technical, knowledge and investment challenges. These issues can lead to serious problems such as waste of electricity to feed the cold chain, release of powerful greenhouse gases into the atmosphere and post-harvest losses. Post-harvest losses are estimated to currently account for 30% of total production. Recent projections show an increase in the inefficiency of the overall food systems, causing an increase in post-harvest losses. The production of food involves a significant carbon investment that is squandered if the food is unutilized.

Therefore, there is big potential for investing in cold chain facilities as the Philippines' urban centers are lacking professional infrastructure for storing and transporting seafood and agricultural produce. And as in other developing countries in South-east Asia, especially high spoilage rates continue to pose significant challenges for food logistics.

Please refer to the explanatory note at the end of the document and select corresponding ratings for the current reporting period, i.e. FY22. Please also provide a short justification for the selected ratings for FY22.

In view of the GEF Secretariat's intent to start following the ability of projects to adopt the concept of adaptive management³, Agencies are expected to closely monitor changes that occur from year to year and demonstrate that they are not simply implementing plans but modifying them in response to developments and circumstances or understanding. In order to facilitate with this assessment, please introduce the ratings as reported in the previous reporting cycle, i.e. FY21, in the last column.

Overall Ratings⁴	FY22	FY21
Global Environmental Objectives (GEOs) / Development Objectives (DOs) Rating	<i>Satisfactory (S)</i>	<i>Satisfactory (S)</i>
<i>No change in selection, as there were no changes in GEOs or DOs.</i>		
Implementation Progress (IP) Rating	<i>Satisfactory (S)</i>	<i>Satisfactory (S)</i>
<i>No change in selection for the FY22 reporting versus the FY21 reporting. Given the circumstances, implementation progress stayed at the same rating.</i>		
Overall Risk Rating	<i>Low Risk (L)</i>	<i>Low Risk (L)</i>
<i>Rating stayed the same FY22 versus FY21.</i>		

II. Targeted results and progress to-date

³ Adaptive management in the context of an intentional approach to decision-making and adjustments in response to new available information, evidence gathered from monitoring, evaluation or research, and experience acquired from implementation, to ensure that the goals of the activity are being reached efficiently

⁴ Please refer to the explanatory note at the end of the document and assure that the indicated ratings correspond to the narrative of the report

Please describe the progress made in achieving the outputs against key performance indicator's targets in the project's **M&E Plan/Log-Frame at the time of CEO Endorsement/Approval**. Please expand the table as needed.

Please fill in the below table or make a reference to any supporting documents that may be submitted as annexes to this report.

Project Strategy	KPIs/Indicators	Baseline	Target level	Progress in FY22
Component 1 – Policy and Regulatory Assessment				
Outcome 1.1: Regulatory, legal and voluntary measures are adopted to support the use of low carbon and energy efficient technology within the Cold Chain (CC).				
Output 1.1.1: National standards for flammable refrigerants and revision of energy efficiency and/or minimum efficiency requirements to fill existing gaps drafted/updated and proposed for endorsement to relevant stakeholders	Number of regulations/standards (new or amended) in favour of low global-warming technologies promulgated.	Zero guidelines on flammable refrigerants and energy efficiency for industrial/commercial food cold chain	1 National standard for flammable refrigerants and 1 national standard for energy efficiency and/or minimum efficiency requirements on the food cold chain sector	<p>Under this component, an inter-agency technical working group was established to work on cold chain standards and policies.</p> <p>A policy research report entitled "Creating an Enabling Policy Environment for Sustainable and Climate-friendly Cold Chains in the Philippines through Refrigerant and Energy Efficiency Standards" has been validated by the TWG and published online. Key recommendations of the report include the adoption of the IEC 60335-2-89 v3 on commercial refrigeration, which increases the charge limit of flammable refrigerants, and the development of minimum energy performance policies for the cold chain sector.</p> <p>As of June 2022, the former has been adopted by the Bureau of Philippine Standards as a Philippine National Standard (PNS IEC 60335-2-89:2022), while the latter is being developed by an inter-agency partnership among the Department of Energy – Energy Utilization Management Bureau (DOE-EUM), Board of Investments – National Cold Chain Committee (NC3) and DENR through a Memorandum of Understanding signed on April 8, 2022.</p> <p>The TWG approved to conduct a study on the assessment on the development of the minimum energy performance (MEP) for the cold chain sector which will inform the development of the policy instruments. A national consultant has been engaged for the technical assessment. The expected outputs are minimum energy performance policy for the cold chain sector and minimum energy performance standard for commercial refrigeration to promote energy savings while contributing to the country's nationally determined contribution (NDC) targets.</p>
Output 1.1.2: Collect technological as well as socio-economic data in order to project short, medium and long term cold-chain needs in the Philippines, including expected growth in energy demand and overall climate impact. Projections on cold-chain development will also take into consideration expected impacts on GEEW	Availability of project short, medium and long term cold-chain needs report.	Zero data in order to project short, medium and long term cold-chain needs in the Philippines	1 Report on short, medium and long term cold-chain needs in the Philippines including expected growth in energy demand and overall climate impact	<p>Partnership has been secured with the National Cold Chain Committee and its IT partner, InsightSCS on the development of a Cold Chain Integrated Supply Chain Solution for Evidence-based Policy Making and Investment Programming. (Deliver 2.0) A memorandum of understanding was signed on February 28, 2022.</p> <p>DeliverE 2.0 is a tool that would generate insights on cold chain supply and demand, as well as energy and refrigerant use, and gender mapping in the cold chain sector, which will be used for crafting policy instruments such as investment promotions,</p>

				and energy and refrigerant policies and regulation. InsightSCS has been engaged for the nationwide primary data collection of cold storage warehouses which will populate the said platform. The counterpart of the project is the data collection, while the software is the counterpart of the NC3 and InsightSCS.
Component 2 – Awareness and Capacity Building				
Outcome 2.1: Awareness, knowledge and capacity on the use of energy-efficient, climate-friendly and safe alternatives in the food CC industry improved and demand increased.				
Output 2.1.1. Methodology to monitor and analyze efficiency and carbon impact of each part of the CC, and the CC as a whole, developed; international benchmarks and evaluation to identify high potential areas for improving the CC in the country conducted, operationally tested and standardized	Standardized methodology to assess EE throughout the cold chain is developed and applied.	Zero methodology to monitor and analyze efficiency and carbon impact of each part of the CC and the CC as a whole at project start	At least 1 standardized methodology option available	<p>CCI-Hub has secured the agreement by Royal Duty Free Shops (RDFS) to participate as the project's official model case study on the implementation of energy efficient, climate friendly and safe refrigeration technologies in the Philippines' food retail sector.</p> <p>Ten (10) energy monitoring meters were installed for the R290 (propane) water-loop refrigeration system and plug-in equipment for the Royal Duty Free Shops pilot project study. Staff from Royal Duty Free Shops were trained to read and record energy use data everyday to be logged into a tracking sheet created and monitored by Cold Front Technologies Asia.</p> <p>CCI-Hub has created a digital file to begin collecting and analysing the energy performance data by comparing current and previous energy use figures, ambient temperature data, international benchmarks and other factors. Daily energy consumption per showcase (in certain cases multiple showcases are linked to a single meter) has been calculated including minimums, maximums and averages in order to identify any anomalies in the data set. After identifying and correcting for certain anomalies and inconsistencies in the data set, estimates of average energy intensity per square meter of sales area of the store per year were generated. Given the previous Cold Chain Innovation Hub research on international benchmarks for energy efficiency, conclusion was drawn.</p> <p>To support the development of the Methodology, the Report on Evaluating the Philippines' Food Cold Chain, Energy Efficiency and Environmental Impact report, published last year under the Project, was used as reference.</p>
2.1.2. Optimized system operation recommendations based on data collected disseminated	Recommendation on system operation optimization/energy saving potentials developed	Zero recommendations on system operation optimization/energy saving potentials at the project start	1 set recommendation developed	The Stakeholders' Conference on the Recommendation on Refrigeration System Operation and Optimization for the Philippines Commercial Food Retail Sector was held on May 5-6, 2022. Day 1 lecture was conducted at Technical Education and Skills Development Authority (TESDA) - National TVET Trainers Academy, Marikina City; while Day 2 was the field trip at Royal Duty Free, Subic, Zambales. The activity centered around the key industry recommendations based on the research conducted and case study analysis on Royal Duty-Free Shops. The recommendation was presented live to 28 TESDA trainers from different regions of the country and online to 17 stakeholders to promote the use of

				energy-efficient, climate-friendly and safe alternatives in commercial refrigeration
2.1.3. Recommendations for voluntary commitment to direct and indirect emission reductions drafted and proposed for endorsement to relevant stakeholders (especially private sector)	Recommendations on energy saving potentials are available for stakeholders (technology suppliers, beneficiaries, investors and government).	Zero Recommendations on energy saving potentials at project start	1 set recommendation available for stakeholders	<p>Planning with TESDA has been conducted identifying the following action points to be undertaken in the coming months:</p> <ol style="list-style-type: none"> 1. Recommendations on energy savings will be developed based on the trainings conducted and Competency-Based Learning Material (CBLM) developed on energy savings; 2. Develop Competency standards in Industrial refrigeration relative to the use of low global warming potential refrigerants such as ammonia and CO₂; 3. Recommend to stakeholders to implement the mandatory TESDA certification of in-house technicians and service providers; 4. Course offering of green skills and knowledge (e.g. good practices in installation and servicing) throughout all the accredited TVET Institution (TVIs); 5. Develop recommendation guidelines to all inter-government agencies on the use of low GWP AC units and patronize service providers with TESDA certified technicians
2.1.4. 200 key stakeholders are educated on energy-efficient and climate-friendly cold chain technologies and practices (100 women/100 men).	No. of key stakeholders are educated on energy-efficient and climate-friendly cold chain technologies and practices (disaggregated by gender)	Few CC stakeholders educated on energy-efficient and climate-friendly CC technologies and practices	At least 200 key stakeholders (100 women/100 men).	To date, 12 online webinars and technical trainings as well as 1 face-to-face workshop conducted, educating 1,426 stakeholders on energy-efficient and climate-friendly cold chain, in which round 30% of the participants were women.
2.1.5. Education & high level training for 50 local engineers, system suppliers and end-users on the availability and use of global innovative CC technology provided. Participation of at least 20 women will be promoted.	No. of engineers/system designers/end users trained (disaggregated by gender)	Zero local engineers, system suppliers and end-users trained and educated in global innovative CC technology	High level training for 50 local engineers, system suppliers and end-users provided.	High-level training of TESDA trainers and technicians on natural refrigerants particularly ammonia, R290, and CO ₂ will be conducted starting 3 rd quarter of 2022
Component 3 – Technology Transfer				
Outcome 3.1.: New technologies made available in the country and partnerships between key stakeholders established				
Output 3.1.1. “Cold Chain Innovation Hub (CCI-Hub)” as ecosystem of technical resources, technology promotion, knowledge sharing and stakeholder collaboration set up	Cold Chain Innovation Hub as technology show-case and training facility set-up and available for national stakeholders.	Zero Cold Chain Innovation Hub at the project start	1 physical hub and 1 virtual platform established and operational	<p>CCI-Hub virtual platform is continuously hosting webinars/technical trainings, producing knowledge materials, and providing venue for networking for industry stakeholders.</p> <p>The refurbishment of the CCI-Hub building at TESDA Taguig is 100% completed. The launching was conducted on June 29, 2022, with the full support of UNIDO Country Office, TESDA, and DENR. It was also attended by refrigeration-related organizations and companies such as CCAP, RACTAP, WOVRA, ASHRAE, Kilojoules, GIZ, Delsa, MagicAire, Danfoss, Mayekawa, GEA, Epta, Coldfront, Unimagma, and Koppel, and others. The event was attended by 120 participants. The Facebook live of the launching of the CCI-Hub had 11,000 views</p>

				and 270 comments from all over the country. It was one of the most watched videos at the TESDA FB page which signifies huge interest on CCI Hub's offerings.
3.1.2. Global network of stakeholders, such as national and international technology suppliers, financial institutions, government, etc. built under the CCI-Hub	No. of stakeholders contributed to CCI-Hub	Zero global network of stakeholders, such as national and international technology suppliers, financial institutions, government, etc. focusing on green technologies in the Philippines	At least 10 technology manufacturers contributed to the CCI-Hub.	<p>CCI-Hub has secured a total of 24 contribution agreements with local and international technology suppliers, several new partnerships are expected.</p> <p>The following donated technologies will be featured in the technology showcase in the CCI-Hub:</p> <ol style="list-style-type: none"> 1.) AHT - R290 Waterloop System for Commercial Food Retail 2.) Carrier Transicold - 20-foot NaturaLINE® Refrigerated Container Unit 3.) Centro Nippon Fruehauf Cooltech - Refrigerated Truck Bodies 4.) Cold Front Technologies Asia - Natural Refrigerant Technology Technical Expertise, Labor and Logistics 5.) Danish Technological Institute - CO2 and solar powered refrigeration system training and knowledge 6.) embraco - R290 Plug n' Cool System for Commercial Food Retail 7.) Epta - Hydrocarbon Freezer and Chiller Display Cases for Commercial Food Retail 8.) Future green now - CO2 training, technical support and independent case studies 9.) Guntner – R290 waterloop pump station and CO2 air coolers 10.) Hussmann/Panasonic - Transcritical CO2 Condensing Units and Merchandisers for Commercial Food Retail 11.) Nihon Netsugen Systems – CO2 training rig 12.) Panasonic - Transcritical CO2 condensing units for commercial food retail 13.) productbloks - Natural Refrigerant Technology Applied in Transport Refrigeration Systems 14.) TEKO – CO2 training, technical support and independent case studies 15.) Toyota Tsusho Nexty Electronics - Transport Refrigeration Cold Chain Monitoring System 16.) Vestfrost Solutions - R600a Solar Driven Refrigerator 17.) Magic-Aire Industries, Inc- Tools and instruments in refrigeration and air conditioning 18.) Parker Hannifin Corporation – Zoomlock Max press-to-connect refrigerant fitting kit 19.) REFCO Manufacturing – Selection of tools and machines 20.) Uniweld Products – Selection of tools 21.) VALUE – Industrial dual stage ammonia vacuum pump 22.) Fieldpiece – 4way manifold 23.) CPS Products – TR600 recovery machines and tank 24.) Kilojoule – Consultancy and training on safe use of ammonia
3.1.3. Technology showcase established: best in class systems and components from around the globe presented virtually as well as technology product examples exhibited on site and used for education and	Technology showcase at CCI-Hub used for best class system and component education and training	Zero technology showcase on green technologies in the country	1 physical technology showcase and 1 virtual reality demonstration and training platform created	Setting-up of the technology showcase started with the initial arrival of the equipment. Commissioning of the Technology Showcase is expected on September 2022.

training provided through industry partnership				
Outcome 3.2.: Financing scheme to develop bankable investment projects put into practice				
Output 3.2.1. Business case demonstration projects based on the results of component 2 completed and economic feasibility verified	Business case demonstration project on energy-efficient and climate-friendly cold chain technologies piloted	Zero business case demonstration project on energy-efficient and climate-friendly cold chain technologies at the project start	At least 2 DEMO cases piloted	<p>The facilitation of agreement with the executing partner for the DEMO Project is still on-going. For DEMO project equipment, there is an ongoing initial discussion with industry stakeholders on 7 possible demo projects covering several cold chain sectors. For the 3rd quarter of 2022, the following are to be done: 1.) Develop project documents; 2.) Form the project partner teams for each project; 3.) Identify suitable end users; and 4.) Prepare documentation including budget for approval of Project Steering Committee (PSC) / financial institution</p> <p>The financial institution (FI) that had to be selected as executing partner for this component could not be selected yet. Following the approved project document, an open Request for Proposals had been published in Q3 2021. A national consultant was hired to support interested national FIs in the process for application. Despite those efforts, only one FI sent a proposal, that was unfortunately not technically suitable. However, many clarification meetings were conducted with the FI, UNIDO Procurement team and UNIDO technical team, to receive a complete proposal. This could not be achieved, and other solutions have to be considered. For Q3 2022 it is planned to initiate a minor amendment for change of executing partner to an already agreed executing partner of the project (shecco) in order to complete the component as planned and to not further delay implementation. A decision on that from the PSC is under preparation in Q3 2022.</p>
3.2.2. Options for investments, loans and finance schemes assessed and proposed for implementation with national institutions/entities	Financial supports for adopting/implementing energy-efficient and climate-friendly cold chain technologies available	Zero financial support for adopting/implementing energy-efficient and climate-friendly cold chain technologies at project start	At least 2 finance schemes available	This activity will take place in Q1-Q3 2023.
3.2.3. Capacity building and support for financial institutions and potential beneficiaries/suppliers delivered, investment-ready projects prepared and approved by financial institutions	Investment-ready project proposals approved by the financial institutions	Zero support to prepare business/project proposal for funding	At least 2 business/project proposals prepared and submitted to financial institutions	This activity will take place in Q1-Q3 2023.

III. Project Risk Management

1. Please indicate the overall project-level risks and the related risk management measures: (i) as identified in the CEO Endorsement document, and (ii) progress to-date. Please expand the table as needed.

Describe in tabular form the risks observed and priority mitigation activities undertaken during the reporting period in line with the project document. Note that risks, risk level and mitigations measures should be consistent with the ones identified in the CEO Endorsement/Approval document. Please also consider the project's ability to adopt the adaptive management approach in remediating any of the risks that had been sub-optimally rated (H. S) in the previous reporting cycle.

	(i) Risks at CEO stage	(i) Risk level FY 21	(i) Risk level FY 22	(i) Mitigation measures	(ii) Progress to-date	New defined risk ⁵
1	Lack of trust and/or interest between the national and international technology providers, which is crucial for the success of the project. They might be not convinced of the benefits of implementing new methodologies, new technologies and new types of refrigerants.	medium	medium	Awareness raising campaigns will be promoted in order to disseminate benefits (financial, energy, environmental, safety, etc.) of new technologies and best practices will be a key component of the Innovation Hub. Case studies to prove the business case and deliver energy saving figures, technology components available at the Hub (virtually and in reality) to be able to see and touch them and representatives from the foreign companies on site as well to create trust. Energy and technology audits to prove the business case.	<p>The educational and awareness campaigns being done through the CCI-Hub gained high interest from global suppliers and experts. This led to networking and building relationship between the national and international technology providers.</p> <p>Local stakeholders/users are becoming well-informed on the available technologies that will benefit their business. Several inquiries were made through the CCI-Hub.</p> <p>The implementation of the DEMO Project is foreseen to increase the demand for energy-efficient, climate-friendly and safe alternatives in food CC.</p>	<input type="checkbox"/>
2	Availability of technical resources for the proper application of new technologies, since some of the new technologies have not been applied in developing countries.	medium	medium	Technological solutions will be carefully selected to ensure they can be sustained and replicated in the future. Moreover, a continuous dialogue with international suppliers will be sustained by the Innovation Hub. To deliver the required capacity building, UNIDO will employ the services of highly skilled experts.	<p>Several companies/experts formally pledged their contribution to the CCI-Hub, in the form of training services and equipment. Eight machines and several tools have already been delivered at the CCI-Hub.</p> <p>Trainings provided by international partners and experts have already been planned. The first batch will be conducted by the TESDA trainers, then this will be re-echoed to the technicians in all regions of the country.</p>	<input type="checkbox"/>
3	Climate changes, including costal storms, flooding, heat waves and other weather extremes, will influence the sustainability of the intervention.	low	low	Location the Innovation Hub should be in a safe location. Climate conditions and temperature changes should be taken into consideration. During the PPG-phase, an environmental and social management plan has been prepared to screen and avoid all related risks.	The CCI-Hub building in TESDA is a sturdy structure located in a safe location. Its design supports good ventilation and day-lighting, resulting to comfort, usability, and energy efficiency.	<input type="checkbox"/>
4	Change in priorities leading to reduced	low	low	Close communication with the government will ensure open channels of information flow, so	The Project was able to establish good working relations with DENR and TESDA, and was able	<input type="checkbox"/>

⁵ New risk added in reporting period. Check only if applicable.

	support to the project, implementation delays and reductions in the effectiveness of delivery of the capacity building programs.			the project team will have early warning and will be able to address concerns of the government early (if there were to be any).	to partner with government agencies concerned with the delivery of policy instruments on energy efficiency, standards development and cold chain development. Partnership with the Department of Energy and Board of Investments have been secured through signing of Memorandum of Understanding.	
5						<input type="checkbox"/>

2. If the project received a [sub-optimal risk rating \(H, S\)](#) in the previous reporting period, please state the [actions taken](#) since then to mitigate the relevant risks and improve the related risk rating. Please also elaborate on reasons that may have impeded any of the sub-optimal risk ratings from improving in the current reporting cycle; please indicate actions planned for the next reporting cycle to remediate this.

NA

3. Please indicate any implication of the **COVID-19** pandemic on the progress of the project.

The COVID-19 restrictions in 2020 and 2021 have created challenges and caused delays in the progress of the project. The activities shifted to virtual platforms such as the active use of the project website, the regular uploading of videos on the established YouTube channel and training platforms, as well as, focusing on research work, conducting online event series, including a virtual trade show and technical workshops.

Fortunately, as of 2022, hybrid implementation of project activities have been allowed, particularly, meetings, trainings, workshops, networking events, data gathering, and research. This not only accelerates catching up with the activities, it also makes the training of trainers and technicians more effective.

Nevertheless, the global pandemic had implications on the project's ability to finish by the expected completion date and a request for extension is in process (see details below).

4. Please clarify if the project is facing delays and is expected to request an **extension**.

Yes, the project is facing delays and a request for extension has been initiated.

Reason for the request and root cause for the delay: The main reason for the implementation delays were the ongoing covid-19 restrictions in the country until beginning of 2022, which did not allow face-to-face gatherings for a long period or if allowed, only in small groups. Besides restrictions for meetings and events, this also impacted the communication between stakeholders. Furthermore, the pandemic impacted priorities of governmental counter parts as well as private sector partners. All of this slowed down the implementation of activities despite adaptive measures that were developed and applied to deal with those unforeseen challenges.

Overall, the COVID-19 pandemic has had a major impact on several major components of the project. These include physical travel restrictions, delays in the creation of the physical space for the Cold Chain Innovation Hub (CCI-Hub) and the cancellation of in-person events.

During the 3rd Project Steering Committee (PSC) in Q1 2022, the project partners concluded that the activities cannot be fully executed until October 2022 as initially planned. However, despite the delays in project execution, everybody is committed to implementing the activities. Therefore, the PSC requested the approval for the no-cost extension of the project by the GEF Coordinator by the end of 2023 with no further delays. The Department of Environment and Natural Resources (DENR) through the Environmental Management Bureau (EMB), who is the lead executing partner also sent separately an official request for

*extension to UNIDO. The extension will have no impact on the GEF project financing and the overall budget of 2mio USD will remain the same.
Following the GEF guidelines and procedures, the extension qualifies as minor amendment because it does not have significant impact on the project objectives or scope, or increase of the GEF project financing.*

5. Please provide the **main findings and recommendations of completed MTR**, and elaborate on any actions taken towards the recommendations included in the report.

NA

IV. Environmental and Social Safeguards (ESS)

1. As part of the requirements for **projects from GEF-6 onwards**, and based on the screening as per the UNIDO Environmental and Social Safeguards Policies and Procedures (ESSPP), which category is the project?

- Category A project
- Category B project
- Category C project

(By selecting Category C, I confirm that the E&S risks of the project have not escalated to Category A or B).

Notes on new risks:

- If new risks have been identified during implementation due to changes in, i.e. project design or context, these should also be listed in (ii) below.*
- If these new/additional risks are related to Operational Safeguards #2, 3, 5, 6, or 8, please consult with UNIDO GEF Coordination to discuss next steps.*
- Please refer to the UNIDO Environmental and Social Safeguards Policies and Procedures (ESSPP) on how to report on E&S issues.*

Please expand the table as needed.

All identified risks in ESMP at the time of CEO Endorsement are related to the DEMO projects, which will only start in the next reporting period. Here below a part of the list of risks taken from the ESMP page 24 & 34.

	E&S risk	Mitigation measures undertaken during the reporting period	Monitoring methods and procedures used in the reporting period
(i) Risks identified in ESMP at time of CEO Endorsement	Ozone depletion due to use of refrigerants Greenhouse gas emission Potential health hazards of the refrigerants Possible leakage of refrigerant in the atmosphere	Only applicable when demo projects have started.	Only applicable when demo projects have started.
(ii) Risks identified in ESMP at time of CEO Endorsement	Accidental lock-in of employees in the cold storage facility Health hazards	Only applicable when demo projects have started.	Only applicable when demo projects have started.

	<p>from prolonged exposure to cold temperatures</p> <p>Exposure to refrigerants due to accidental release during operation, maintenance and/or repair.</p> <p>Possible explosion due to accidental release of refrigerants during operation, maintenance and/or repair.</p>		
<p>(ii) New risks identified during project implementation (if not applicable, please insert 'NA' in each box)</p>	NA	NA	NA

V. Stakeholder Engagement

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes** regarding engagement of stakeholders in the project (based on the Stakeholder Engagement Plan or equivalent document submitted at CEO Endorsement/Approval).

The inter-agency technical working group (IATWG) formed through DENR Special Order 2020-328 was consulted on the policy research report which outlined recommendations for a climate-friendly and energy efficient cold chain. The IATWG included the Board of Investments as the co-chairperson of the National Cold Chain Committee. The IATWG is regularly consulted on the development of policy instruments such as safety standards and minimum energy performance for the cold chain. This includes key industry players and stakeholders represented by the Cold Chain Association of the Philippines (CCAP).

The 3rd Project Steering Committee (PSC) meeting was held and participated by all agency members, particularly UNIDO, DENR-EMB, TESDA, and shecco. Among the discussion were the 2021 accomplishments and 2022 workplan. The Project extension until December 2023 was also agreed.

In terms of private sector engagement, aside from (CCAP), Refrigeration and Air Conditioning Technicians Association of the Philippines (RACTAP) and Women on Ventilation, Refrigeration, and Air Conditioning (WOVRAC) have been supporting the Project. They actively participated in Project activities such as meetings, forums, research, webinars and technical trainings. A network composed of experts, suppliers and users have been established. A number of international experts and suppliers already contributed to the virtual knowledge platform by a technical training. Similarly, several companies/experts formally pledged their contribution to the CCI physical hub, in the form of expertise and equipment.

Development partner GIZ also partnered with the Project for the delivery of capacity building activities. GIZ provided the Fit for Green Cooling Modules and the experts. This will be utilized in the training of TESDA trainers and in the development of TESDA training modules and learning materials.

The project has secured already a total of 24 partnership and contribution agreements with local and international technology suppliers. The contributions include for example donations of tools, components and technology systems that will be featured in the technology showcase in the CCI-Hub (see listing under II progress-to-date). The contributions also include training and knowledge transfer.

2. Please provide any feedback submitted by national counterparts, GEF OFF, co-financiers, and other partners/stakeholders of the project (e.g. private sector, CSOs, NGOs, etc.).

Some of the Project activities where feedbacks gathered from local partners and stakeholders:

- During the virtual MOU signing ceremony, the Bureau of Philippine Standards and Cold Chain Association of the Philippines expressed their support for the Project as it will enable the industry to be more competent and globally competitive through standards development and capacity building of technicians.*
- In the first face-to-face meet-up of the CCI-Hub with local industries and organizations, they committed to unite to bring new safe green technologies in the Philippines and provide support/services in the realization of the vision of CCI-Hub to be the Southeast Asia's center of excellence for technology showcase and training*
- During the launching ceremony of the CCI-Hub, in his speech, TESDA Director General Isidro S. Lapeña highlighted the role of the Hub in providing livelihood for Filipinos by training and upgrading their skills in priority sectors which include commercial and industrial refrigeration. UNIDO Country Representative Teddy G. Monroy underscored the role of innovation in the cold chain sector to address the challenges in food and energy security due to global events such as the war in Ukraine, the Covid 19 pandemic and climate change. DENR-FASPS Director Al O. Orolfo noted that while cold chains are vital for the economy, it must develop in a sustainable and climate-friendly way aligned with the country's commitment to the Montreal Protocol and the Paris Agreement.*

3. Please provide any **relevant stakeholder consultation** documents.

- 2nd IATWG Meeting highlights*
- Collaboration on the MEP development meeting highlights*
- Assessment on the development of MEP for cold chain inception report validation meeting highlights*
- CCI-Hub meet-up with the cold chain industry activity report*
- MoM of the 3rd PSC*
- Request for extension*

VI. Gender Mainstreaming

1. Using the previous reporting period as a basis, please report on the **progress achieved on implementing gender-responsive measures** and **using gender-sensitive indicators**, as documented at CEO Endorsement/Approval (in the project results framework, gender action plan or equivalent),.

- Inclusion of gender indicators on the data collection tool for DeliverE 2.0 which will inform gender mapping in the cold chain sector.*
- Support the organizing of Women on Ventilation, Refrigeration, and Air Conditioning (WOVRAC) thru 1.) providing inputs in the formulation of their vision, mission, and objectives; 2.) involving them in the activities of CCI-Hub for networking and gathering of more members; and 3.) inviting them in the capacity development activities*
- Collection of sex-disaggregated data for technical work shops and stakeholder coordination meetings, consideration of gender balance in staff recruitment.*

VII. Knowledge Management

1. Using the previous reporting period as a basis, please elaborate on any **knowledge management activities / products**, as documented at CEO Endorsement / Approval.

Knowledge activities held for the previous year include the following webinars and trainings: 1) Policy Forum: Opportunities and Barriers in Building Sustainable and Climate-friendly Cold Chains; 2) Ozone Protection, Climate Action and SDGs Webinar; 3) CCI Hub Contributors Sessions; 4) Advanced Technologies for Commercial Food Retail; and, 5) Stakeholders' Conference on the Recommendation on Refrigeration System Operation and Optimization for the Philippines Commercial Food Retail Sector.

Knowledge products released this year include videos of the above mentioned webinars, "Policy Report for the Philippines' Cold Chain Sector, and the "Recommendation Report for the Philippines' Commercial Food Retail Sector" which can be accessed via the CCI Hub website.

The integrated CCI Hub is a key factor to ensure a solid exit strategy, facilitate the flow of information and knowledge to international and national stakeholders and beneficiaries, as well as to consolidate experiences from the Philippines during and after the project to share these experiences and expertise with all existing and potential stakeholders.

With the launching of the physical hub at TESDA, the sustainability of the capacity building will be further guaranteed as the new technologies to be introduced by the Project will be made into regular curriculum of TESDA. In addition, and especially important in times of pandemics, the virtual home: CCI-Hub.org has been continuously producing knowledge materials/products. This platform, in combination with the physical Hub, will play a crucial role as go-to place and core of all activities around information and knowledge sharing, capacity building, training and dissemination of results from all project activities.

The online platform both the website and YouTube channel are constantly updated and expanded.

2. Please list any **relevant knowledge management mechanisms / tools** that the project has generated.

- *Project website: <https://cci-hub.org/>*
- *<https://cci-hub.org/newsletter/>*
- *<https://cci-hub.org/webinars/>*
- *<https://cci-hub.org/events/>*
- *<https://cci-hub.org/blog/>*
- *https://www.youtube.com/channel/UCYmc5WUzNEvw_WfvZj5JrrQ*
- *<https://www.facebook.com/Cold-Chain-Innovation-Hub-CCI-Hub-106403608785440>*
- *https://cci-hub.org/wp-content/uploads/2022/03/CCI-Hub-Cold-Chain-Policy-Paper_final-compressed.pdf*
- *<https://cci-hub.org/research-report-on-evaluating-the-philippines-food-cold-chain/>*

VIII. Implementation progress

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes achieved/observed** with regards to project implementation.

Please see detailed description on progress, challenges and outcomes of implementation activities by topic in previous sections.

2. Please briefly elaborate on any **minor amendments**⁶ to the approved project that may have been introduced during the implementation period or indicate as not applicable (NA).

Please tick each category for which a change has occurred and provide a description of the change in the related textbox. You may attach supporting documentation, as appropriate.

<input type="checkbox"/>	Results Framework	
<input type="checkbox"/>	Components and Cost	
<input type="checkbox"/>	Institutional and Implementation Arrangements	
<input type="checkbox"/>	Financial Management	
<input checked="" type="checkbox"/>	Implementation Schedule	<i>Extension requested until Dec 2023 due to delays mainly caused by the global pandemic. See details under previous sections (e.g. question 4) and attached "request letter for extension"</i>
<input type="checkbox"/>	Executing Entity	
<input type="checkbox"/>	Executing Entity Category	
<input type="checkbox"/>	Minor Project Objective Change	
<input type="checkbox"/>	Safeguards	
<input type="checkbox"/>	Risk Analysis	
<input type="checkbox"/>	Increase of GEF Project Financing Up to 5%	
<input type="checkbox"/>	Co-Financing	
<input type="checkbox"/>	Location of Project Activities	
<input type="checkbox"/>	Others	

3. Please provide progress related to the **financial implementation** of the project.

For detailed information see Project Delivery Report attached.

IX. Work Plan and Budget

1. Please provide **an updated project work plan and budget** for the remaining duration of the project, as per last approved project extension. Please expand/modify the table as needed.

Submitted as an annex to the report.

	Year 1	Year 2	Year 3

⁶ As described in Annex 9 of the *GEF Project and Program Cycle Policy Guidelines*, **minor amendments** are changes to the project design or implementation that do not have significant impact on the project objectives or scope, or an increase of the GEF project financing up to 5%.

Outputs by Project Component	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	GEF Grant Budget Available (US\$)
Component 1 –													
Outcome 1:													
Output 1.1:													
Output 1.2:													
Component 2 –													
Outcome 2:													
Output 2.1:													
Output 2.2:													

X. Synergies

1. Synergies achieved:

- *Collaboration with Philippines Stage II HCFC Phase-out Management Plan and the HFC Enabling Activities for Philippines established. Activities under the Philippines Stage II HCFC Phase-out Management Plan and HFC Enabling Activities for Philippines complements Component 2 on how the project will equip stakeholders on energy-efficient and climate-friendly cold chain technologies and practices. Two of the areas of collaboration are: 1.) Training of TESDA trainers and private technicians on natural refrigerant, R290 for commercial refrigeration; and 2.) Development of R290 training modules and learning materials*
- *The project also seeks to supplement the Cool Contributions fighting Climate Change or C4 II project, which focuses on household and commercial refrigeration and air-conditioning, by addressing the needs of the industrial refrigeration sector. Present partnership is on the training of TESDA trainers and private technicians on natural refrigerant, ammonia for industrial refrigeration.*
- *The project was able to partner with the inter-agency National Cold Chain Committee (NC3) which was established to implement the Philippine Cold Chain Industry Roadmap. One of the key strategies of NC3 is to come up with a projection of cold chain supply and demand which is being pursued through the development of the DeliverE 2.0 tool. Through the project, the said tool will also take into account the energy, refrigerant and gender dimensions of the cold chain and use its insights for policy formulation.*
- *The Assessment on the Development of the Minimum Energy Performance (MEP) for the Cold Chain takes into account the framework for the National Cooling Plan which was identified under a United Nations Environment Program (UNEP) project. This is a step to harmonize the MEP policy instruments with other climate action plans, as well as the Nationally Determined Contributions (NDC).*
- *Another area being explored is the alignment of the methodology for monitoring, reporting and verification of energy efficiency performance as mandated by the Energy Efficiency and Conservation Law, which is under Component 1 on policy and regulatory assessment.*

3. Stories to be shared (Optional)

No stories to be shared yet.

EXPLANATORY NOTE

1. **Timing & duration:** Each report covers a twelve-month period, i.e. 1 July 2021 – 30 June 2022.
2. **Responsibility:** The responsibility for preparing the report lies with the project manager in consultation with the Division Chief and Director.
3. **Evaluation:** For the report to be used effectively as a tool for annual self-evaluation, project counterparts need to be fully involved. The (main) counterpart can provide any additional information considered essential, including a simple rating of project progress.
4. **Results-based management:** The annual project/programme progress reports are required by the RBM programme component focal points to obtain information on outcomes observed.

Global Environmental Objectives (GEOs) / Development Objectives (DOs) ratings	
Highly Satisfactory (HS)	Project is expected to achieve or exceed <u>all</u> its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as “good practice”.
Satisfactory (S)	Project is expected to <u>achieve most</u> of its <u>major</u> global environmental objectives, and yields satisfactory global environmental benefits, with only minor shortcomings.
Moderately Satisfactory (MS)	Project is expected to <u>achieve most</u> of its major <u>relevant</u> objectives but with either significant shortcomings or modes overall relevance. Project is expected not to achieve some of its major global environmental objectives or yield some of the expected global environmental benefits.
Moderately Unsatisfactory (MU)	Project is expected to achieve <u>some</u> of its major global environmental objectives with major shortcomings or is expected to <u>achieve only some</u> of its major global environmental objectives.
Unsatisfactory (U)	Project is expected <u>not</u> to achieve <u>most</u> of its major global environmental objectives or to yield any satisfactory global environmental benefits.
Highly Unsatisfactory (HU)	The project has failed to achieve, and is not expected to achieve, <u>any</u> of its major global environmental objectives with no worthwhile benefits.

Implementation Progress (IP)	
Highly Satisfactory (HS)	Implementation of <u>all</u> components is in substantial compliance with the original/formally revised implementation plan for the project. The project can be presented as “good practice”.
Satisfactory (S)	Implementation of <u>most</u> components is in substantial compliance with the original/formally revised plan except for only few that are subject to remedial action.
Moderately Satisfactory (MS)	Implementation of <u>some</u> components is in substantial compliance with the original/formally revised plan with some components requiring remedial action.
Moderately Unsatisfactory (MU)	Implementation of <u>some</u> components is <u>not</u> in substantial compliance with the original/formally revised plan with most components requiring remedial action.
Unsatisfactory (U)	Implementation of <u>most</u> components is <u>not</u> in substantial compliance with the original/formally revised plan.
Highly Unsatisfactory (HU)	Implementation of <u>none</u> of the components is in substantial compliance with the original/formally revised plan.

Risk ratings	
Risk ratings will assess the overall risk of factors internal or external to the project which may affect implementation or prospects for achieving project objectives. Risk of projects should be rated on the following scale:	
High Risk (H)	There is a probability of greater than 75% that assumptions may fail to hold or materialize, and/or the project may face high risks.
Substantial Risk (S)	There is a probability of between 51% and 75% that assumptions may fail to hold or materialize, and/or the project may face substantial risks.
Moderate Risk (M)	There is a probability of between 26% and 50% that assumptions may fail to hold or materialize, and/or the project may face only moderate risk.
Low Risk (L)	There is a probability of up to 25% that assumptions may fail to hold or materialize, and/or the project may face only low risks.