

## Global Partnership for Improving the Food Cold Chain in the Philippines

<b>Meeting</b>	DeliverE 2.0 and MEPS for Cold Chain Conference
<b>Date/Time</b>	20 April 2023, 9:00 AM – 1:00 PM
<b>Venue</b>	Makati Diamond Residences, 118 Legazpi Street, Legazpi Village, Makati
<b>Participants</b>	(See attached attendance sheet)

### I. Rationale

FCC Project supported the development of DeliverE 2.0, a supply chain database management tool that links food producers and importers to cold chain service providers, through a nationwide data collection of cold storage facilities that will populate the said platform. Results of this initiative provided necessary inputs for policies, including the development of the minimum energy performance for cold storage warehouses which was undertaken in fulfillment of the provisions stated in the Energy Efficiency and Conservation Law and implemented by the Department of Energy – Energy Utilization Management Bureau.

This activity was held to mark these two important milestones in creating an enabling policy environment for sustainable and energy efficient cold chains, and increase the public's awareness on its use and implications, as well as to promote measures and other initiatives that will lead to climate-friendly and energy efficient cold chains in the country.

<b>Topic/Agenda</b>	<b>Highlights</b>
Opening Ceremony	<ul style="list-style-type: none"><li>The program opened with a message from Atty. Marjorie Ramos-Samaniego. She said that the Board of Investments (BOI), as the Co-Chair of the National Cold Chain Committee (NC3), is honored to be part of this Cold Chain Industry Conference to launch the DeliverE 2.0, which incorporates the cold chain industry database. She congratulated UNIDO-Philippines for successfully organizing the event which is a testament that working collaboratively produces tangible and impactful output. The Cold Chain Industry Database Project, which the BOI endeavored alongside with its development partners, the DENR-Environmental Management Bureau, UNIDO-Philippines and InsightSCS, is the first project since the implementation of the Philippine Cold Chain Industry Roadmap started and BOI is excited, together with industry stakeholders, to see how the platform can be leveraged towards increasing demand and utilization of existing cold storage warehouses and facilitating new investments in less served and unserved location to build up local cold storage capacities. One of the findings of the Philippine Cold Chain Industry Roadmap is the insufficiency of the country's cold storage capacity. For agri-food industry alone, only 60% of our locally-produced agriculture and fishery products requiring cold chain actually pass through cold chain, contributing to high post-harvest losses and forgone opportunities for higher value-adding. Hence, there is a need to build local cold storage capacity however, at the onset of the roadmap's implementation, there was lack of information and data on the industry. The Cold Chain Industry Database under the Deliver 2.0 project is crucial for cold chain investments promotions, intelligent policy planning and informed business location. The database is capable to spatially plot existing cold</li></ul>

	<p>storage warehouses and generate information as to locations with high cold storage demand.. This opens up opportunities in enabling the National Cold Chain Committee to contribute to the Administration's thrust towards achieving food security through strengthening the food value chain. She thanked the partners and expressed that BOI is looking forward to the next collaboration</p> <ul style="list-style-type: none"> <li>• UNIDO FCC Project Manager Adnan Atwa gave a message. At the global level, UNIDO works on sustainable supply chains, ending hunger and climate action. UNIDO ensures that supporting inclusive, sustainable, and innovation-led industrialization; fostering green and resilient industrial communities; and, cultivating effective partnerships for inclusive and sustainable industrial development are always present in the delivery of our projects and it has been a great privilege to be working with government and private sector partners in pursuit of these goals. FCC Project was able to support the Board of Investment - National Cold Chain Committee, as it guides the industry in rebuilding the economy from the effects of Covid-19 pandemic towards a “new better normal”, and the Department of Energy – Energy Utilization and Management Bureau (DOE-EUMB) in implementing the Energy Efficiency and Conservation Law which is expected to result in energy savings and reduction of greenhouse gas (GHG) emissions aligned with the country's Nationally Determined Contribution (NDC) to the Paris Agreement. He noted that the event marks two important milestones for the cold chain industry – 1) the launching of the DeliverE 2.0, a database management tool that links cold chain operators with customers and generates policy insights; and, 2) the results of the collaboration on the development of the minimum energy performance for cold storage warehouses, which was undertaken in fulfillment of the provisions stated in the Energy Efficiency and Conservation Law and implemented by the Department of Energy – Energy Utilization Management Bureau. These two outputs under the FCC Policy Component is a product of an inter-agency and multi-stakeholder dialogue seeking to maximize opportunities that will promote energy efficiency and green technologies. He concluded by saying that the outputs would not be possible without the unwavering support of government partners.</li> <li>• DENR Environmental Management Bureau Assistant Director Esperanza Sajul said that as the implementing partner of the FCC project, it is a privilege for the EMB to facilitate building partnerships that paved the way for an inter-agency and multi-stakeholder initiative seeking to advance sustainable, energy efficient and climate-friendly cold chains in the country. The cold chain industry is vital for ensuring inclusive economic development and partner in safeguarding our environment by ensuring that its operations and future directions will decouple from greenhouse gas emissions and other environmental issues. She mentioned that EMB lauds the development of DeliverE 2.0, and connected this as a necessary input for policy development such as the minimum energy performance for cold storage warehouses that will</li> </ul>
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	<p>synergize climate action and ozone protection, and in support of the RA 11285 or the Energy Efficiency and Conservation Law implemented by the Department of Energy – Energy Utilization and Management Bureau, and also to fulfill the country's pledge to the Kigali Amendment which was ratified in June 2022. She concluded by noting that collaborations such as these are needed to take bold steps to address multi-faceted problems that we face today and thanked the partners.</p>
<p>Context Setting: Global Partnership for Improving the Food Cold Chain in the Philippines Project</p>	<ul style="list-style-type: none"> <li>• FCC Project Lead Engr. Gilda Garibay presented an overview of the Global Partnership for Improving the Food Cold Chain in the Philippines Project</li> <li>• The goal of FCC project is to identify, develop and stimulate the development 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.</li> <li>• FCC project has three components: 1) Component 1. Policy and Regulatory Assessment; 2) Awareness and Capacity Building; and; 3) Technology Transfer</li> <li>• For component 1, the project was able to facilitate the updating of the PNS-IEC 60335-2-89 which increases the charge limit of natural refrigerants. It was also able to forge partnerships for the development of minimum energy performance standards for the cold chain sector. It also supported the development of DeliverE 2.0 through data collection of cold storage warehouses in the country</li> <li>• The Cold Chain Innovation (CCI)-Hub hosted by TESDA In their central office is the flagship of the project. It presents cold chain refrigeration technologies and innovation using natural refrigerants that are not present anywhere in the region. These equipment are used for training purposes of the industry. Development of curriculum on natural refrigerants is being done with TESDA to institutionalize training efforts. The project will also provide co-financing for entities that are willing to test the new technology through the DEMO projects.</li> <li>• Under component 3, the project will provide technical support for entities who would like to avail financing of natural refrigerant technologies.</li> </ul>
<p>Update on key F-Gas policy measures in the EU, the US and Japan</p>	<ul style="list-style-type: none"> <li>• A presentation was made by Mr. Jan Dusek, Head of APAC &amp; COO - ATMOSphere (formerly shecco)</li> <li>• EU F-gas is the main legal instrument through which the European Union complies with the Montreal Protocol's Kigali Amendment. The EU F-gas is currently being revised and a new Regulation is expected to apply by 1 January 2024.</li> <li>• Currently, EU institutions are discussing: mainstreaming of natural refrigerants in RACHP through training and certifications; HFC Phase Down - steep cut; new prohibitions on f-gases (both HFCs and HFOs); PFAS connection in the legal text; steep phase down – consensus among policy makers (by 2038 ca. 4.2 MtCO<sub>2</sub>e). This will likely increase price of even mid-GWP HFCs.</li> </ul>

	<ul style="list-style-type: none"> <li>• The Parliament is pushing for a ban on new equipment in refrigeration systems containing fluorinated greenhouse with different timelines (banning both HFCs and HFOs). The European Commission is less ambitious and ask for low/mid-GWP</li> <li>• On a universal PFAS updates - OECD updated definition. This includes both commonly used HFCs and HFOs, and degradation products such as TFA</li> <li>• Persistence of C-F bond as common warning denominator of PFAS</li> <li>• 5 European chemical agencies (Denmark, Germany, Norway, Sweden and the Netherlands) have submitted to ECHA a Restriction Proposal to ban manufacturing, use and placing on the market of f-gases that are PFAs</li> <li>• Estimated restriction before 2030. The American Innovation and Manufacturing (AIM) Act was enacted by Congress on December 27, 2020. The AIM Act directs EPA to address hydrofluorocarbons (HFCs) by: phasing down production and consumption, maximizing reclamation and minimizing releases from equipment, and facilitating the transition to next-generation technologies through sector-based restrictions.</li> </ul>
DeliverE 2.0 Presentation	<ul style="list-style-type: none"> <li>• Mr. Pierre Carlo Curay presented Deliver 2.0</li> <li>• DeliverE was a response to the food waste incurred caused by mobility restrictions during the Covid-19 pandemic. It was launched in December 2020 and supported by major government and private collaboration to disrupt an industry worth more than \$30 billion USD. It was the only digital agriculture supply chain platform endorsed and pushed by multi stakeholders from Department of Trade and Industry, Department of Agriculture and Office of the Cabinet Secretary, USAID, and industry partners.</li> <li>• DeliverE unified players in one digital supply chain ecosystem that creates efficiencies across the supply chain, increases revenues for farmers, greatly reduces wastes and costs. Alongside this technology InsightSCS have setup a very efficient logistics network comprised of strategic consolidation areas where small holder farmers can bring their fresh harvest.</li> <li>• To serve InsightSCS' biggest market, they have partnered with strategically located cold chain facilities as distribution and processing centers. This ensures freshness and better quality</li> <li>• This end to end solution approach gave us our biggest opportunity in what we call First Mile B2B E-Commerce. Our technology and logistics ecosystem connects our network of farmers more directly to buyers. Currently the platform hosts have 252 SMEs, 16,000 farmers where 54% are women</li> <li>• DeliverE have increased farmer revenues by double, while providing market access to our SMEs and it reduced waste by 90%. To further mitigate all of the rejected and thrown away vegetables, DeliverE connected them to food banks and public school feeding programs.</li> <li>• The DeliverE 2.0 seeks to address the cold chain needs by mapping out existing facilities and linking them to the customers. The Cold Chain Industry Database under the Deliver 2.0 project</li> </ul>

	<p>can be used for investments promotions, intelligent policy planning and informed business location. The database is capable to provide information on supply and demand, as well as to where cold chain investments are needed.</p>
DeliverE 2.0 as a Policy Tool	<ul style="list-style-type: none"> <li>• FCC Project's Ms. Mae Valdez presented the uses of DeliverE for policy making. She started by providing a context on the Kigali Phasedown. The Kigali Amendment aims to phase down the use of HFCs. Without the Kigali Amendment, HFC emissions would add the equivalent of an additional 78 to 90 GtCO<sub>2</sub>e for all cooling sectors by 2050 which could undermine the goals set by the Paris Agreement</li> <li>• Policies to curb GHG emissions include the National Climate Change Action Plan (NCCAP); Our Nationally Determined Contribution (NDC) was submitted to UNFCCC with a goal of reducing the country's GHG emission by 75% by 2030 (72.29% conditional, 2.71% non-conditional); RA 11285 – Energy Efficiency and Conservation Law which provides for minimum energy performance of products (PELP) and sectors (MEPS); availability of incentives; the Philippine Cold Chain Industry Roadmap and the National Cold Chain Committee (NC3) was launched to introduce reforms in the commercial/industrial refrigeration sector; DAO No. 2021-31 – Chemical Control Order for HFCs was released; Kigali Amendment was ratified in June 2022; updated PNS IEC 60335-2-89 version 3.0 by BPS which increases the charge limit for natural refrigerants</li> <li>• Uses of DeliverE 2.0 for policy makers - Investment programming <ul style="list-style-type: none"> <li>○ Determining gaps in supply and demand</li> <li>○ Preparing investment prospectus based on the "heat map"/areas with the greatest need for cold storages</li> <li>○ Basis for determining incentives to be given under the CREATE Law</li> <li>○ Basis for updating the Strategic Investment Priority Plan (SIPP)</li> </ul> </li> <li>• Energy <ul style="list-style-type: none"> <li>○ Basis for determining the minimum energy performance for cold storage warehouses</li> <li>○ Provision of incentives under the Energy Efficiency and Conservation Law</li> <li>○ Can be expanded to include MEP for commercial refrigeration as part of the expanded Philippine Energy Labelling Program (PELP)</li> <li>○ Basis for developing appropriate programs and subsidies depending on the energy needs of the cold chain segment</li> </ul> </li> <li>• Environmental Management <ul style="list-style-type: none"> <li>○ Monitoring refrigerant use of Cold Storage Warehouses</li> <li>○ Computation of GHG emissions and reduction</li> <li>○ Developing policies and programs for disposal/capture/recycling of refrigerants</li> <li>○ Monitoring and compliance</li> <li>○ Monitoring additional pallets/locations/expansion</li> <li>○ Can be expanded to include fields to monitor safety and sanitation</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Can be a reference for the renewal of permits and accreditations</li> </ul>
MEP Video Presentation	<ul style="list-style-type: none"> <li>• A recorded video presentation of EUMB Director Patrick Aquino was played during the event. He said that DOE is mandated to prepare, integrate, coordinate supervise and control all plans, programs, projects and activities relative to energy exploration development, utilisation distribution and conservation.</li> <li>• Under the Energy Efficiency and Conservation (EE and C) Act, energy intensive sectors are classified as designated establishments. They belong to the commercial, industrial and transport sectors. Designated establishments are enjoined to integrate energy management system policy into their business operations set up programs to develop and design measures that promote energy efficiency, conservation and sufficiency, and this may include renewable energy, in line with this through the FCC project, the United Nations industrial development organization \together with the DOE and other participating government agencies and stakeholders undertakes the development of the guidelines for the minimum energy performance for the cold chain industry.</li> <li>• This will establish the average energy consumption of the cold chain industry, which will be the basis for the target annual savings and the implementation of energy efficiency projects. energy service company or ESCOs are partners in compliance with the EEC act, towards developing and designing energy efficient projects, delivering designing and guaranteeing energy savings and ensuring cost effective and optimal energy performance.</li> <li>• The cold chain industry being energy intensive, may consider to tap the services of an ESCO to venture into energy efficiency projects, which may include land system upgrades, utilization of hybrid alternative fuel transportation, and plant automation,</li> <li>• Energy savings from refrigeration and air conditioning products is estimated to reach 18 point 76 terawatt hours by 2040. This is 17.8% of the current total annual electricity sales assuming that 5.7% of electricity consumption growth per year under the sustainable cooling scenario. This has a net carbon dioxide reduction effect of 10.68 metric tons co2 equivalent, which is close to the 12% of the unconditional target of the Philippines, nationally determined contribution submitted to the United Nations Framework Convention on Climate Change.</li> <li>• In the Philippines, there is a total of 233 cold chain facilities, which equates to a holding capacity of 400 metric tons. Overall, the country can hold a total gold storage capacity of 2 million cubic meters. Cold storage warehouses have a growth forecast of 35% in 2020. It is projected to reach 500 facilities by 2025. This massive industry has a direct projected emission of 11 point 13 million metric tons of co2 by 2030. With a significant effect in the country's GDP and energy intensity, the implementation of energy efficient, innovative project and formulation of programs and standards are required for the development and security of one of the most important industries in the country.</li> </ul>

	<ul style="list-style-type: none"> <li>• He concluded by thanking and enjoining everyone to join the campaign for energy efficiency.</li> </ul>
Awarding of Plaques	<ul style="list-style-type: none"> <li>• BOI Governor Marjorie Ramos-Samaniego awarded plaques of appreciation to EMB, EUMB and UNIDO and thank them for the partnership</li> </ul>
Closing remarks – UNIDO	<ul style="list-style-type: none"> <li>• UNIDO's Ms. Franziska Menten gave a closing remarks. She expressed that it has been a great honor for UNIDO to work with the public and private sector partners through the FCC project.</li> <li>• The FCC project, through the Cold Chain Innovation Hub, will continue to work with the industry in developing an ecosystem of suppliers, manufacturers and end users that will disrupt the industry by leapfrogging into natural refrigeration technologies that are proven to be more sustainable, efficient and cost effective.</li> <li>• She thanked the commitment of our partners in taking these gains further – the Department of Environment and Natural Resources – Environmental Management Bureau, Department of Energy – Energy Utilization and Management Bureau, Board of Investments – National Cold Chain Committee, and our private sector partners, Cold Chain Association of the Philippines, InsightSCS, shecco and other industry partners for the partnership.</li> </ul>

#### PROGRAM OF ACTIVITY:

<b>DeliverE 2.0 and MEP for the Cold Chain Conference</b> 20 April 2023, 9:00 AM – 1:00 PM Makati Diamond Residences, 118 Legazpi Street, Legazpi Village, Makati	
9:00 AM	Registration
9:30 AM	Opening Ceremony - National anthem and prayer - Key Messages from UNIDO, BOI, EMB and EUMB - Photo opportunity
10:00 AM	FCC project presentation
10:15 AM	Latest Update on European F-Gas Regulation
10:30 AM	DeliverE 2.0 Presentation
10:45 AM	DeliverE 2.0 as a Policy Tool
11:00 AM	MEP Video Presentation
11:10 AM	Awarding of Plaques
11:25 AM	Closing remarks – UNIDO
11:35 AM	Lunch



**PHOTO DOCUMENTATION:**









