

## Key Takeaways from the Focus Group Discussion on Clean Heat Opportunities in the Philippines

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*Slides presented as part of this CEIA Philippines Focus Group Discussion are available [here](#).*

The [Clean Energy Investment Accelerator \(CEIA\)](#) hosted a focus group discussion on “**Clean Heat Opportunities in the Philippines**” to raise awareness and understanding about clean heat technologies and their benefits and provide a framework for future engagement to address regulatory and market gaps that hinder wider clean heat implementation. To date, there have been limited resources and a lack of attention paid to clean heat technologies, available deployment models, and best practices specific to the Philippines.

This event brought together clean heat experts and solution providers to discuss the barriers and opportunities for clean heat adoption among commercial and industrial (C&I) facilities. CEIA will utilize the insights and inputs from this discussion to support the development of a regional knowledge product that will help C&I facilities begin to explore clean heat technologies, navigate available business models, and connect with established solution providers.

### Discussion Highlights

1. The industrial sector in the Philippines uses significant amounts of energy and the deployment of clean heat technologies is essential to reducing industrial emissions. Fossil fuels like coal and oil are the primary energy sources for heating purposes. For specific industries like sugar milling and food processing, biomass can be a prevalent resource with the advantage of ample feedstock availability and lower costs for facilities that are situated near agricultural lands.
2. The cement, iron, and steel industries emit high quantities of greenhouse gasses and require high temperature heat for processing, while many other industries require low to medium temperature heat. Shifting industries that use low to medium heat to clean heat generated from various renewable energy sources including sustainable biomass and solar thermal technologies could reduce approximately 20% of thermal emissions—equivalent to nearly 1.8M metric tons in carbon dioxide equivalent (tCO<sub>2</sub>e). This is a significant reduction that can contribute to achieving sustainability goals and make a positive impact on the environment.
3. Several key factors can help accelerate momentum on industrial decarbonization through clean heat, including:
  - a. Increased understanding of the heating needs of commercial and industrial (C&I) facilities,
  - b. Identification of established solution providers that can offer technologies to meet the heating needs of these facilities,
  - c. Development of a supportive policy and regulatory environment to encourage the deployment of clean heat solutions.
4. Dr. Colin McMillan, a Senior Analyst from the U.S. National Renewable Energy Laboratory (NREL) discussed that process heat decarbonization technologies can be split into four main technology categories (fuel-based, steam-based, electric systems, and hybrid systems) as well as

some specific technology categories such as electrotechnologies, solar thermal, and hydrogen. High temperature heat pumps are one of the most notable technologies under the electrotechnologies category and are utilized significantly in the food, paper, and chemical sectors. Meanwhile, solar thermal technologies can potentially support low temperature demands (generally less than 300°C) across various industries.

5. Two key categories of challenges were noted as factors that limit clean heat adoption:
  - a. Techno-economic factors: This includes factors such as heat being more difficult to transport over distances, more challenging to store, and requiring significant capital costs compared to other combustion alternatives.
  - b. Socio-technical factors: This includes factors such as the need to adapt heat technologies for specific use cases, knowledge gaps among stakeholders, and the absence of a dominant, standardized heat technology.

The applicability and successful implementation of alternative clean heat technologies will depend on addressing these techno-economic and socio-technical factors in a way that accounts for local needs, practices, and knowledge on available technologies and their applications. The CEIA team aims to encourage broader stakeholder engagement and the establishment of a network of heat users, technology providers, and other relevant stakeholders to help accelerate the adoption and innovation of clean heat technologies.

6. Amici, a solar heating technology supplier, shared both opportunities and challenges as part of this focus group discussion. Based on their experiences, such as installing heat pump water heating systems in more than 250 hotels, they presented that integrating solar heating with heat pumps can achieve 90% cost savings in an electricity bill compared to conventional heaters. They also shared that a limitation of installing the panels needed for solar heating is that it requires wide open areas free from sunlight obstruction such as shadows from nearby high-rise buildings and vegetation for efficient operation. They suggest that hybrid systems that include backup electric heating elements could address this limitation.
7. Biomass expert Mr. Alberto Dalusung III shared that in terms of applications in the Philippines, historically biomass has been used in the sugar industry for process heating and power generation and more recently the rice industry is also utilizing biomass for the same functions. He believes that the country's coconut sector is an untapped biomass resource that could be available for large-scale utilization. Mr. Dalusung also noted that certain industries in the past attempted to utilize geothermal steam for clean heat applications, but eventually focused on use of geothermal resources for power generation due to economic reasons.
8. Mr. Dalusung, in alignment with the other presenters, emphasized that there are numerous opportunities for clean heat applications in the Philippines (such as various solar heating technologies as well as broader market potential for clean heat adoption), but these solutions have not yet been widely implemented. Lack of knowledge and lack of technical skills among industries for clean heat operation may be contributing to lack of clean heat uptake in the Philippines. He added that initiatives like the CEIA can play a key role in information dissemination and capacity building to address these gaps in the market and accelerate the adoption of clean heat solutions.

### **Actionable Steps for Moving Forward**

- 1. Provide more avenues for capacity building, group discussions, and technical assistance to support clean heat technologies and applications.** Lack of knowledge regarding clean heat opportunities in the Philippines is contributing to the market's slow adoption and uptake of clean heat technologies and applications. Technical assistance, capacity building activities, group discussions, and tools such as knowledge products and procurement guides will be effective measures to further develop and provide practical guidance to build stakeholders' capacity to assess and deploy clean heat technologies across the C&I sector. This will allow for a deeper understanding of the various technologies and opportunities that exist within the Philippines and the benefits associated with utilizing clean heat to achieve cost savings, decarbonization, as well as meeting sustainability goals and targets.
- 2. Support policy engagement on clean heat solutions.** Future engagement with policy makers in the Philippines is crucial as this will provide avenues to amplify the private sector's demand for enabling policies and programs to accelerate clean heat adoption and implementation.