Investment Mobilization Measures Roadmap for the Philippines

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Introduction

The Mobilising Investment (MI) project for Nationally Determined Contribution (NDC) implementation is a three-year program funded by the German International Climate Initiative (IKI) initiated in 2017. The purpose of the program is to work with public and private sector and other development and civil society stakeholders to identify opportunities for mobilizing private sector investment into NDC priorities areas. The MI project was jointly implemented by SouthSouthNorth, PwC, and NREL with each organization taking the lead in 2-3 countries. NREL's lead countries included Vietnam, Philippines, and the Dominican Republic.

The intent of this report is to develop a high-level roadmap that can offer guidance for the implementation of measures that can drive private sector capital into priority clean energy sectors within the Philippines. It has been prepared for use by government and development partner counterparts to promote investment in clean energy. Similar reports have been authored for each of the other 7 MI project countries (Bangladesh, Dominican Republic, Ethiopia, Kenya, Peru and Vietnam).

NREL's MI project in the Philippines was implemented under the banner of the Clean Energy Investment Accelerator (CEIA), a program led jointly with the World Resources Institute and Allotrope Partners. The CEIA seeks to address barriers to clean energy investment in the commercial and industrial sectors through:

- Engagement with governments and utilities on the enabling environment via policy technical assistance and public-private dialogues to identify joint clean energy solutions;
- Technical assistance to corporate partners on innovative procurement models that can result in market learnings, documentation and replication through the sharing of case studies and tools; and
- Capacity building, development of knowledge resources, and creation of ecosystems to enable large energy users to undertake clean energy procurements, facilitated through regional and global learning.

The opportunities identified within this roadmap build off of years of in-country CEIA engagement and leverage the knowledge and resources developed by the CEIA team since the inception of our work in the Philippines in 2017. The investment mobilization measures in this report have been identified as an outcome of extensive stakeholder consultations with public sector, utility, private sector, civil society, development, and financial institutions.

The measures are largely not technology focused, but center on mobilizing investment towards renewable energy (RE) more broadly. The measures include a combination of follow-on activities that NREL and/or other development partners could support through the CEIA or other programs as well as specific actions for government power sector stakeholders to implement. Given that previous deliverables under NREL's subgrant to SSN described relevant business models and investment cases, this report does not go into great depth on those aspects. The measures identified center on those that are most feasible for near-term implementation and in some cases, include measures towards which initial progress has been made. As this report is being drafted in September 2020, the implications of the COVID-19 pandemic and resulting economic downturn are also considered.

Country Context

The Philippines NDC includes targets to cut emissions by 70% below business-as-usual levels by 2030. The Philippines has undertaken a variety of ambitious efforts to promote a clean energy transition. One key policy that was issued prior to development of the NDC was the 2008 Renewable Energy Act (2008 RE Act) which included several key policies and fiscal incentives, and provided the framework for a Renewable Portfolio Standard (RPS), Feed-in Tariffs (FIT), Net Metering, and the Green Energy Option Program (GEOP)[1]. Although the Philippines has established key elements of a robust enabling environment for RE, there have been significant delays in developing and refining several of the policies implemented under the 2008 RE Act,[2] with some of the policies such as the GEOP still not fully rolled out.

One of the major policies provided for under the 2008 RE Act that was implemented earlier on was the FIT, which was put in place in 2012. While FITs can be effective measures for driving private sector investment in clean energy, given the specifics of this policy's design, the result was high costs and stranded RE assets that were built but were not able to qualify for the FIT.[3] As a partial outcome from the experience with the FIT, there was a decision by the Department of Energy (DOE) to move towards implementation of the RPS as the primary market mandate. The RPS was officially rolled out in 2020; the net metering policy was originally implemented in 2013[4] and is currently being revised; and the GEOP is under final development.

Table 1. Philippines Generation Mix: 2014 to 2019[5]

Resource	2014	2015	2016	2017	2018	2019
Coal	**42.78%**	44.51%	47.69%	49.64%	53.05%	**54.6%**
Oil-Based	7.39%	7.14%	6.23%	4.01%	3.18%	3.5%
Natural Gas	24.19%	22.91%	21.87%	21.77%	21.38%	21.1%
RE	**25.64%**	25.44%	24.21%	24.57%	23.38%	**20.8%**
TOTAL in GWh	*77,261*	*82,413*	*90,798*	*94,370*	*99,765*	*106,041*

[1] Source: https://www.doe.gov.ph/laws-and-issuances/republic-act-no-9513?ckattempt=1
[2] Source: https://www.irena.org/DocumentDownloads/Publications/IRENA_RRA_Philippines_2017.pdf
[3] Source: https://mb.com.ph/2017/05/12/nreb-mulls-subsidy-scheme-for-stranded-solar-capacity/
[4] Source: https://www.pv-magazine.com/2018/09/05/the-philippines-needs-a-cost-effective-net-metering-policy/
[5] Source: https://www.youtube.com/watch?v=gd744nnvfWk

Perhaps in part owing to delay of full implementation of the RE Act, the Philippines generation mix became more coal reliant between 2014 to 2019, as demonstrated in Table 1 above. The bolded numbers highlight the increase in coal penetration from 42.78% in 2014 to 54.6% in 2019 and the decrease in RE penetration from 25.64% in 2014 to 20.8% in 2019. This shift towards coal has been in part driven by a rapid increase in electricity demand, which grew by an average of 4.7% per year from 2007 to 2016.[6] The Philippines also has some of the highest electricity prices in Southeast Asia, with commercial prices in the range of $0.12 per kilowatt-hour (kWh) and residential prices approximately $0.20 kWh, largely resulting from high prices of imported coal and diesel (Koebrich and Speer 2019).

The Philippines is also in the process of updating its national, multi-year power development plan, the Philippine Energy Plan (PEP) 2018-2040. The current draft of the updated plan does not take into account several key existing RE policies or the DOE's current RE targets. There is significant opportunity for the Philippines to make greater progress towards meeting its RE goals through full implementation of the RE Act policies, integration of these policies with the PEP, and development of additional measures. By meeting its RE targets, the Philippines will not only reduce reliance on imported fuels, but could also lower electricity costs through greater utilization of RE resources.

Summary of Key CEIA Efforts in the Philippines

The CEIA has conducted robust stakeholder engagement efforts since initiating its work in the Philippines. For example, the CEIA has convened with multiple public and private sector partners including the DOE; the National Renewable Energy Board (NREB); the Energy Regulatory Commission; the Climate Change Commission (CCC); MERALCO (the largest distribution utility in Manila); local governments of Quezon City, Santa Rosa City, Navotas City, and Baguio City; Healthcare without Harm; and a subsidiary of Ayala Corporation (a large conglomerate). The team has also participated in multiple donor coordination meetings, such as those convened by the Asian Development Bank (ADB), which included representatives from Japan International Cooperation Agency (JICA), European Union Delegation, USAID, World Bank, France, United Nations Development Program, Global Green Growth Institute (GGGI), GIZ, Asian Development Bank Energy for All and Energy Efficiency teams, and the United Nations Industrial Development Organization. The CEIA has also participated in meetings convened by the NDC Partnership that brought together a host of additional development organizations, bilateral country partners, and NGOs. These stakeholder meetings have enabled the CEIA to identify key challenges to private sector investment mobilization, high-value areas to focus our work, and opportunities for ensuring collaboration and coordination with other partners.

Figure 1. Marlon Apanada, CEIA's Philippines Country Lead, training distribution utilities' employees on Renewable Portfolio Standards (RPS) implementation. (April 2019)

[6] https://www.nrel.gov/docs/fy20osti/74877.pdf

Through these consultations and further market study, the CEIA determined that although the Philippines has been developing a fair amount of RE over the past five to ten years, the vast majority of that development has taken place in the utility and Independent Power Producer (IPP) sector. To date, there has been an underutilization of RE by private sector off-takers, mostly due to difficulties with the enabling environment (e.g., net metering restrictions and the lack of regulations to facilitate power transmission—also called "wheeling"—from offsite projects). However, there is progress on these policies to improve the appeal and utilization of renewables by the private sector. CEIA is taking advantage of these positive advancements in the enabling environment and coupling them with our approach to aggregated procurement to support catalyzation of private sector investment in RE.

Aggregated procurement is the process by which a group of somewhat similar projects are identified, characterized and assessed, then grouped into a single procurement process, e.g., through a collective competitive Request for Proposals (RFP). Aggregations can take multiple forms. For example, an aggregated procurement can consist of multiple projects for one single buyer (such as a retailer contracting for a Power Purchase Agreement (PPA) to serve many stores throughout a region) or single projects for several different buyers. In the case of aggregating across multiple buyers, CEIA typically looks for partners with common characteristics that can help serve as the platform for the aggregation, e.g., a business association.

There are several benefits of aggregation. In the case of CEIA's approach, a neutral third party with a non-commercial interest identifies and executes the pre-feasibility assessments to identify viable projects. This reduces much of the risk and legwork for RE project developers, as the CEIA pre-determines which projects are cost-effective, have no other conditions that could preclude the sites from profitably, and are technically sound enough to be included within an RFP. Another benefit of the aggregated procurement approach is that CEIA has already established relationships with key decision makers within each buyer company. This can help ensure that developers' proposals are being competently analyzed and directly shared with those within prospective customers' management who have the remit to make investment decisions. An additional benefit of aggregation is that it reduces risk to the developer through a portfolio approach as there are multiple buyers rather than one single off taker. Additionally, and importantly, aggregation provides the market with development opportunities at scale; by reaching certain economies of scale, RE buyers can attract more qualified developers. The developers can also procure hardware in bulk, thus driving down upfront capital costs.

In July 2019, CEIA held a roundtable meeting with corporate leaders and Santa Rosa City along with representatives from other local Philippines municipal governments and ADB. Santa Rosa City is the leading city in a region that is cited as the country's industrial engine and manufacturing hub. This gathering helped the parties learn more about the aggregation model and how it could be scaled and replicated in other cities. As an outcome of this roundtable, the CEIA developed an agreement with Toyota Motors Philippines (TMP) to support aggregation for on- and off-site procurement for its 150+ suppliers and dealers. The collaboration with the CEIA will help TMP to meet or exceed its "Toyota Environmental Challenge of 2050." The CEIA's support included leading workshops with Toyota's suppliers and dealerships to build their capacity to understand RE benefits and procurement models, conducting analysis of TMP's data across its suppliers and dealers to identify viable procurement options, sharing best practices and CEIA tools to help TMP in developing RFPs, and developing case studies and lessons learned from the TMP experience for sharing with other corporates in the Philippines to spur replication.

In the Philippines, CEIA has also been engaging directly with public and private sector partners on clarifying and enabling the implementation of additional investment levers in the form of policies that can foster a

more conducive RE investment environment. Specifically, these include the Philippines's new net metering policy, the GEOP, the new on-grid RPS, and the green energy tariff. The CEIA has been supporting implementation of these investment-driving policies through engaging in public consultations hosted by the Philippines DOE. CEIA has also provided memoranda to the Philippines DOE outlining international best practices for the GEOP, to offer guidance and examples of how these policies have been implemented elsewhere.

These policies drive investment through the following means:

- **Net metering** provides an onsite RE generation system owner with some level of remuneration for excess energy that is not consumed on site and that is fed back into the grid. This is an important incentive as energy users will at times not be able to use all of the electricity generated on site (e.g., Sundays and holidays). The net metering policy is limited to RE projects sized 100 kW or less. As of May 2020, there were over 3,500 registered participants.[7]
- The **GEOP** offers large electricity customers the ability to buy RE from an offsite project and "wheel" (i.e., send) it through the grid. This program opens up investment opportunities as it can enable customers to access a wider variety of RE resources than what they have on site and to be able to procure larger amounts of energy to fully meet their energy load. The GEOP is limited to large customers with average monthly peak demand of 100 kW or more.
- The **RPS** is a mandate on the distribution utilities requiring 35% of generation to be sourced from RE by 2030.[8] Utilities can meet RPS obligations by developing their own RE projects, purchasing RE through a supply contract, buying Renewable Energy Certificates (RECs), or by adhering to the FIT, net metering, GEOP, or Green Energy Auction Program policies.
- The **Green Energy Auction Program** and sub program, the **Green Energy Tariff** was announced in January 2020.[9] The Green Energy Auction would enable a competitive process for tendering for RE projects to supply utilities while the Green Tariff would enable utilities to procure RE on behalf of commercial and industrial customers.

Another key theme of the CEIA's work in the Philippines has been building the capacity of distribution utilities and rural cooperatives to meet and exceed the expectations for implementing these new policies. In partnership with the Philippine Rural Electric Cooperative Association (PHILRECA), the CEIA implemented four trainings for the distribution utilities which covered the following topics:

1) The implications of the RPS and determining the contracting and other options for meeting the RPS requirements in a cost-effective way,
2) How to utilize the CEIA created RPS planning tool,
3) Best practices for developing projects, and
4) Additional NREL-created, no-cost RE resource and feasibility assessment tools.

The CEIA also addressed all 121 electric cooperatives, including 1,600 utility executives, at PHILRECA's annual convention in Manila in 2019.

More recently, the CEIA has facilitated a series of virtual public-private dialogues given limited ability to convene during COVID-19 restrictions. These virtual dialogues, which took place from May through July 2020, brought together over 700 stakeholders from key public and private sector groups. Through these

[7] Source: https://www.youtube.com/watch?v=Kw_bSqy2r54&t=23s
[8] Source: https://www.youtube.com/watch?v=Kw_bSqy2r54&t=23s
[9] Source: https://www.pv-tech.org/news/philippines-regulator-consults-industry-on-new-green-energy-auctions-and-ta

engagements, the CEIA has identified several key remaining barriers to investment and potential measures to address them, which are detailed in the subsequent sections of this report.

Barrier Identification[10]

Several barriers to mobilizing investment in NDC priority areas, with a focus on clean energy, have been identified through extensive ongoing engagement with key stakeholders since 2017 that were detailed in the previous section. Table 2 below outlines these barriers, provides a description, and offers measures and responsible stakeholders that can help address the barriers.

Table 2. Investment Mobilization Barriers in the Philippines

Barrier	Description	Investment Mobilization Measure	Stakeholders Responsible for Implementation
Incongruous national clean energy plans	The Philippines is currently developing a new national power development plan, the draft of which would fall short of the DOE's 35% by 2030 goal, does not reflect key RE policies, and does not include a roadmap for enabling technologies such as battery storage or smart grid components	Measure 1: Integrate RE, battery and smart grids plans within the Philippine Energy Plan (PEP) 2018-2040	DOE
Limited capacity by small utilities	Many of the 120 distribution utilities are privately owned and are often important RE investors. However, many lack experience with RE. Thus there is risk that the Philippines may not meet its RE goals unless significant capacity is developed.	Measure 2: Build capacity of distribution utilities and electric cooperatives to develop and invest in RE projects	CEIA, DOE and National Electrification Administration (NEA)
Few offsite RE procurement options	Offsite opportunities are emerging, but uncertainty persists and significant effort is required to unlock offsite RE at scale.	Measure 3: Issue Green Energy Option Program and Green Energy Auction Program regulations that enable participation by variable RE projects	DOE and ERC
Limits to the size of onsite RE projects	Significant barriers remain for firms buying onsite generation, including a 100 kW cap on project sizes	Measure 4: Increase the net metering cap	DOE and ERC
Local governments underutilize support mechanisms	Cities can undertake a variety of policies, programs, and private sector engagement efforts to promote clean energy investments among the private sector	Measure 5: Improve local government capacity to understand measures that cities can undertake to promote clean energy investment	CEIA, Local governments

[10] This section was adapted from NREL reporting documentation provided to SSN under the MPI grant.

Development and Prioritization of Investment Mobilization Measures

The CEIA has identified several key areas for mobilizing additional private sector investment in the Philippines. Table 3 summarizes these measures, which are listed in order of perceived potential impact. The barriers addressed, intermediate and medium-term steps, the long-term goals, and the stakeholders responsible are also identified. The investment mobilization measures are subsequently described in greater detail.

Table 3. NDC Priority Investment Mobilization Measures

Implementation Measure	Barrier Addressed	Immediate- and Medium-Term Steps	Long Term Goal	Stakeholders Responsible
Measure 1: Integrate RE, battery and smart grid plans within the PEP 2018-2040	Incongruous national clean energy plans	Update draft PEP to include RE policies and RE, battery, and smart grid plans and align with existing RE goals	For future PEPs, ensure more robust planning that takes into consideration the full array of clean energy policies and technologies and integrates with other national goals and plans	DOE
Measure 2: Build capacity of distribution utilities and electric cooperatives to develop and invest in RE projects	Limited capacity by small utilities	Develop an updated capacity building program and seek input from key government stakeholders; identify funding for implementation	All distribution utilities and electric cooperatives have equal capacity to identify, develop and/or procure clean energy that provides affordable, reliable, and resilient power in line with national renewable energy development goals	CEIA, DOE and NEA
Measure 3: Issue Green Energy Option Program and Green Energy Auction Program regulations that enable participation by variable RE projects	Few offsite RE procurement options	The Green Energy Option Program and the Green Energy Auction Program are implemented and enable commercial and industrial customers to access cost competitive RE, including from variable RE sources such as solar and wind	Commercial and industrial electricity end-users have a robust set of RE procurement options to meet up to 100% of their energy consumption 24 hours a day, seven days a week	DOE and ERC
Measure 4: Increase the net metering cap	Limits to the size of onsite RE projects	The net metering regulation is adjusted to enable system sizes larger than 100 kW to participate so long as technical studies show no adverse effects to the grid or identify appropriate accommodations	All electricity end-users are able to efficiently use available and appropriate space to support on-site RE consumption	DOE and ERC

Measure 5: Improve local government capacity to understand measures cities can undertake to promote clean energy investment	Local governments underutilize clean energy support mechanisms	Local governments are trained, provided with knowledge resources, and are supported in facilitating public-private dialogues to identify joint opportunities to promote private sector clean energy investment within their municipalities	Local governments are seen as clean energy leaders, creatively utilizing a robust set of policies, programs and public-private partnerships to promote clean energy investments locally, in line with national and municipal goals	CEIA, local governments

Measure 1: Integrate RE, Battery and Smart Grid Plans within the PEP 2018-2040

The Philippines DOE is currently leading development of a 2020 update to the PEP 2018-2040. The PEP is a multi-year plan that lays out projections for national energy demand and supply, provides sector plans and roadmaps, and identifies investment opportunities. Although the Philippines government has undertaken a number of policies and programs to support RE, key policies and plans for RE development and supporting clean energy technologies, such as batteries and smart grids, were notably missing from the draft PEP that was distributed for public comment in August 2020. More specifically, the CEIA identified three areas of the PEP that were incongruent with other Philippines government policies:

1) ***The draft PEP would not enable the Philippines to meet the current DOE target of 35% of RE by 2030.*** Meeting the previously set 35% RE goal by 2040 would require development of approximately 20 GW of additional RE capacity by 2030, which is twice as ambitious as the plan outlined within the draft PEP. Also, given expectations for continued significant energy demand growth, the current 20 GW target would likely need to be increased to maintain 35% RE generation.
2) ***There are no overarching plans for RE within the draft PEP.*** The draft PEP does not mention implications of other RE policies that are currently or soon-to-be enacted such as net metering, the GEOP, the RPS, Competitive Renewable Energy Zones, the Renewable Energy Trust Fund, or the Green Energy Auction Policy. There is also a significant opportunity for the Green Energy Auction Policy and the Competitive Renewable Energy Zones to enable integration of large scales of additional RE that could also be reflected within the PEP.
3) ***The PEP does not include plans for integrating smart grids or batteries.*** Battery storage and smart grids are important technologies for enabling the integration of renewables, especially at higher levels of RE penetration and ensuring overall efficient operation of the grid. There is large potential for battery energy storage and smart grid systems to provide value to the Philippines electric grid in terms of increased stability, security, and reliability, as well as offering additional ancillary services.

Measure 2: Build Capacity of Distribution Utilities and Electric Cooperatives to Develop and Invest in RE Projects

The 2008 RE Act recognizes the importance of distribution utilities and electric cooperatives (most of which are privately owned) in enabling a clean energy transition. More specifically, the RPS provided for within the RE Act requires distribution utilities and cooperatives to achieve 35% RE by 2030. For some utilities, this requirement has already been met or will result in only minimal additional investments. The importance of the role of distribution utilities in enabling the Philippines to meet its RE targets was

reiterated in a July 2020 CEIA webinar, in which the NREB Chair emphasized this point.[11] During that discussion, the DOE noted a potential need to increase interim RPS targets to ensure the overall goal is met. The COVID-19 economic crisis has also hit electric cooperatives especially hard, affecting their financial operation. However, there was also recognition during the virtual dialogue that RE projects may offer an opportunity for the utilities both to meet clean energy targets while also helping to ensure they can provide cost-effective electricity to their customers.

The CEIA conducted multiple trainings with rural electric cooperatives to enhance the ability of the utilities to act as direct developers and investors in RE projects. The intention of these engagements was to ensure the distribution companies and cooperatives can meet or exceed the ambitions set in the RPS supported by early successes. However, given the large number of utilities (over 120), their difficulty traveling for centralized in-person training due to their geographical distribution, and the need to dive deeper into additional topics, there is a significant remaining opportunity to further build the capacity of these utilities to be active promoters of clean energy development. By enhancing the capabilities of local utilities to identify, develop, invest in and support clean energy projects, the Philippines can ensure that clean energy benefits are spread throughout the country and that economic opportunities and job creation are possible even in the most remote areas. Distribution utilities can also play a vital role in ensuring that local power systems are resilient and that key services can be continued even through natural or man-made disasters. Clean energy, battery storage and smart grid technologies can all support increased resilience of distribution grids.

Given that the CEIA has already provided input to the DOE regarding potential adjustments to the Philippines Energy Plan, *Measure 2: Build capacity distribution utilities and electric cooperatives to develop and invest in RE projects* has been identified as a priority investment mobilization measure and is further detailed in the following section laying out a roadmap for implementation.

Measure 3: Issue Green Energy Option Program and Green Energy Auction Program Regulations that Enable Participation by Variable RE Projects

The Philippines DOE has been undertaking ambitious efforts to implement new policies that can enable greater customer choice of energy sources, including access to variable RE suppliers. The two main policies in this regard include the Green Energy Option Program (GEOP) and the Green Energy Auction Program which has a Green Energy Tariff as a sub regulation. DOE has been undertaking a series of public stakeholder consultations over the past year to gain feedback on draft designs of these programs.

The power wheeling regulation that was previously implemented was limited to large load customers. While the new GEOP seeks to provide an off-site procurement mechanism for customers with lower energy demand, the date of the GEOP implementation is uncertain. Another challenge is that the current wheeling fees vary across distribution utilities and there these rates are not transparent. This could pose challenges for end-users trying to ascertain opportunities of the GEOP, especially for those larger companies that may have multiple facilities that are served by different distribution utilities.

The DOE will be conducting Green Energy Auctions for the RPS requirements of interested distribution utilities and retail electricity suppliers. A key component of the auctions is the determination of the Green Energy Auction Reserve Price (GEAR Price) or the price cap for each RE technology every auction round. The ERC is tasked to establish a methodology and determine the GEAR Price for peak and off-

[11] Source: https://www.youtube.com/watch?v=Kw_bSqy2r54

peak, or variable and non-variable power for each RE technology for the combined Luzon-Visayas grid and for the Mindanao grid.[12]

Measure 4: Increase the Net Metering Cap

Net metering provides remuneration for owners of on-site solar energy systems that export excess energy to the grid. Currently, this policy is capped at system sizes of 100 kW. The implications of this cap is that systems installed on large commercial or industrial facilities may be under-sized to ensure that there is no excess generation as it would not provide any value back to the system owner (i.e., the owner would be feeding free energy into the grid while still paying for the larger system). Although there are valid concerns expressed by the Energy Regulatory Commission (ERC) regarding the potential for many large distributed solar energy systems to be feeding excessive amounts of energy into the grid,[13] there could be mechanisms put in place to ensure that the locations of larger systems have sufficient distribution or transmission capacity to enable interconnection to distribution or transmission lines. For example, technical studies of the grid can be undertaken to assess the potential impacts of integrating a distributed solar system on the grid stability and safety.[14]

Measure 5: Improve Local Government Capacity to Understand Measures Cities Can Undertake to Promote Clean Energy Investment

The CEIA worked closely with the city of Santa Rosa to convene municipal and business leaders and identify joint opportunities for advancing corporate RE procurement within the municipality. Santa Rosa City proved vital for engaging companies and raising awareness to those that were acting as "green" leaders within the city in terms of undertaking sustainability measures. The Santa Rosa dialogues were also the platform from which the CEIA developed a partnership with TMP to support the aggregated procurement across its 150+ suppliers and dealers. As part of its engagement with Santa Rosa City, the CEIA developed a policy white paper identifying key measures the municipality could undertake to further promote local investments. Potential strategies for local governments to promote clean energy policy pathways in the Philippines include:[15]

Table 4. Local Government Measures to Support Private Sector Investment in Clean Energy[16]

Near-Term	Medium-Term	Long-Term
• Setting clear, attainable clean energy goals that go beyond the national RPS requirements. • Enabling rapid RE deployment by expediting permitting and zoning requirements for clean energy. • Leading by example by procuring clean energy for city government facilities and operations.	• Implementing more ambitious energy efficiency and RE standards to establish clear signals upon which suppliers and consumers can plan and build on for the future. • Considering new financing approaches like low interest rate loans that make clean energy more accessible to purchasers.	• Considering additional financing mechanisms and models, even if they are not presently used in Santa Rosa City. • Continuing implementation of increasingly ambitious goals that take into consideration near-term and medium-term successes.

[12] https://www.doe.gov.ph/sites/default/files/pdf/issuances/dc2020-07-0017.PDF

[13] https://www.pv-magazine.com/2018/11/27/philippines-regulator-opposes-net-metering-expansion/

[14] https://www.pv-magazine.com/2018/11/27/philippines-regulator-opposes-net-metering-expansion/

[15] This table was adapted directly from an internal CEIA document, "CEIA Philippines Case Study" which was provided to Santa Rosa City in 2019.

[16] Adapted from an internal CEIA memo to Santa Rosa City

Additionally, internationally municipal governments have proven that cities can act as key investors in clean energy. Local government investment in clean energy is important for at least five major reasons:

1. To increase energy supply availability and resiliency vis-a-vis continued growth in energy demand.
2. To facilitate lower-cost energy from localized, clean sources that will benefit businesses and households.
3. To ensure that governments are contributing to climate mitigation measures and are utilizing low carbon resources. Municipalities utilize significant levels of energy resources to power buildings, lighting, and potentially local transport and water utility infrastructure.
4. To create market demand and attract qualified developers to build new clean energy projects.
5. To demonstrate the feasibility of clean energy projects to other businesses, municipalities, and government authorities.

Examples of business models that municipalities can utilize to directly invest in clean energy are onsite installations for self-consumption, power purchase agreements, public-private partnerships, energy service contracts, leases for energy efficiency, and competitive tenders. Public procurements can also apply aggregation approaches similar to the ones the CEIA is demonstrating with TMP to help reduce risks, attract qualified developers, and drive down costs.

Thus, there are a variety of ways that local governments can support private sector investment in clean energy as well as help create markets through demand signals from public procurements. The CEIA and other development partners could work with additional local governments in the Philippines to replicate the approaches undertaken by Santa Rosa City, as well as to explore additional support mechanisms or public procurement approaches.

Investment Mobilization Measure Roadmap

The CEIA has identified *Measure 2: Build capacity distribution utilities and electric cooperatives to develop and invest in RE projects* as a priority investment mobilization measure, given:

1) The recognition that the 2008 RE Act and the more recent pronouncement from the NREB regarding the role that the distribution utilities play in enabling the Philippines to meet its clean energy targets
2) Repeated requests from PHILRECA and the distribution utilities for additional support in the form of capacity building
3) The recognition of the impact of the COVID-19 pandemic and subsequent economic downturn that has further strained distribution utilities' operations, finances, project development timeframes, and capacity.

The CEIA seeks to continue to work with PHILRECA to address these challenges by jointly developing and implementing a training program to ensure electric cooperatives have the necessary skills, knowledge, and tools to successfully meet and exceed RPS targets, while continuing to provide their consumers with reliable and cost-effective electricity. CEIA and PHILRECA have already successfully collaborated to enhance the capacity of electric cooperatives, including training on RPS in September 2018 as a kick-off activity, on March 2019 specifically for the Cordillera Administrative Region (CAR) and Region 1 stakeholders, and a November 2019 training for ECs looking at self-owning RE assets. This project on

Mobilizing Rural Electric Cooperatives' Investment in RE builds upon this collaboration and expands our efforts to enhance the capacity of ECs by developing and implementing a training-the-trainers effort.

The CEIA will seek to continue partnering with PHILRECA to:

1. Identify key priority topics that ECs need to understand in order to meet the RPS requirements
2. Develop a training agenda and curriculum for a training-the-trainers effort based on these priority topics
3. Conduct a pilot training for an initial 20-30 persons
4. Deliver the training to an additional 100 persons through multiple training sessions across various regions of the country (e.g., 3 workshops to 30-40 persons each)

Step 1: Identify Project Team, Work Plan, and Priority Topics
The first task will be to identify the project team from PHILRECA or another local institution that can serve as points of contact in implementing this work plan, finalize the work plan, and select the priority training topics that will be the focus for formulating the training agenda and curriculum for the training-the-trainers effort.

Step 2: Develop Training Agenda
Based on the list of priority training topics, the CEIA will develop the topics into an agenda for a two-day training. The agenda will include hands-on trainings and interactive sessions.

Step 3: Develop Training Curriculum
The CEIA will utilize the training agenda to draft the training curriculum which will include PowerPoint presentations with annotated slides, and instructions for guiding interactive training sessions.

Step 4: Conduct Pilot Training
The CEIA and the local partner will meet to review the training curriculum in person to discuss any remaining questions and make further refinements to the material. The CEIA and the local partner will then jointly deliver the training as a pilot. Following the training, the CEIA and the local partner will meet to review how the training went and make any necessary adjustments to the agenda or curriculum

Step 5: Train ECs
With the final training curriculum developed and PHILRECA training capacity increased through the pilot training, the CEIA and the local partner will then go on to train additional ECs using the materials and experience gained through Steps 1-4.

Next Steps and Conclusions

The Philippines has shown tremendous potential to be a regional leader in developing a robust clean energy market. Already, it has implemented several key renewable energy policies and is working to develop several more that are key drivers of private sector investment. However, the recent trend in greater levels of coal generation in the power mix and the fact that the draft PEP did not reflect RE plans or policies seems to be at odds with the Philippines NDC and other sustainable development goals. It is a vital time for the development community to continue a positive collaboration with Philippines stakeholder to provide additional policy technical assistance, capacity building, and market transformation support at this important juncture in the development of the Philippines power sector.