




Local Government and Community-Driven Renewable Energy Solutions in the Philippines: Best Practice Examples





This collection of best practice examples of renewable energy (RE) solutions initiated by local government units (LGUs) and communities in the Philippines was produced by the ICLEI Southeast Asia Secretariat (SEAS) in June 2024 for the Albay RE Roadmap Project.

The Albay Province RE Roadmap seeks to deliver a renewable energy investment portfolio for the province through a collaboration of the Provincial Government of Albay and its 18 local government units (LGUs) with the Philippine Movement for Climate Justice (PMCJ) and ICLEI SEAS. The project will be guided by the IPCC global call and the scientific consensus to peak fossil fuel use by 2025 and the tripling of renewables by 2030, one of the decisions of COP28, where the Philippine Government is a party. The project envisions a just and successful transition to sustainable and renewable energy sources in the Philippines by promoting a democratized energy governance system.

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Cover photo: Barangay Marubay's Solar-Powered Water System. Photo from People in Need (PIN).

Barangay Marubay Solar-Powered Water System

Location: Barangay Marubay, Laoang Municipality, Northern Samar Province, Philippines

Challenge: For nearly a decade, residents in the area have struggled to access clean and safe drinking water. They have had no centralized water distribution system and have been forced to get water from shallow wells downstream. This has created a high risk for the community's health because those who drink from this water are prone to waterborne illnesses.

RE Solution: In 2010, the Barangay Marubay Council decided to convert and utilize the solar photovoltaic panels (PV modules) donated by the Australian government through the Samar Integrated Rural Development Project (SIRD) into a water system using eight panels with a capacity of 17 watts each.

To further address the rural electrification and the lack of access to clean and potable water, the Barangay Marubay Council invested in eight (8) PV modules for street lighting and to power the submersible water pump for the water supply system.

Marubay also used their Barangay Development Projects (BDPs) fund to put up water facilities and invested additional funding collected from the users' fees.

The Marubay water supply system operates through the social cooperation of the community. A Renewable Energy Access for Community and Households (REACH) Project case study found out from focus group discussions with residents that there was direct community participation in decision-making regarding the water system. The barangay council was quick, efficient, and responsive to the community's needs, for instance, in repairing damage and buying new parts. All barangay transactions were monitored by the treasurer, who provided transparent monthly financial reports on the operation and maintenance of the water systems. They adhered to rules-based decision-making and abided by moral principles in barangay dealings.

People in Need (PIN) published a study in 2021 to document the Marubay Solar-Powered Water System's 10-year journey. According to the study, the combined

households being served by the water supply systems are fifty-six (56), with a users' fee of PhP52.00 per cubic meter, or PhP1.00 per container, which was decided upon by the community. Barangay officials were given the privilege of a reduced users' fee of PhP25.00 per cubic meter. To avail of the water services, a household pays about PhP2,000 for the PVC pipe and water meter, including the service charge of PhP300.00. In terms of payment, the study noted that being unable to pay the monthly dues was a rare occurrence among the interviewed water users.

One challenge faced by the water system is also the limited capacity of its storage tanks, limiting the water supply between 6:00 to 9:00 in the morning instead of providing water 24/7. The study noted that refilling the tanks was slow because the rechargeable solar batteries used to power the water pump has to be recharged at night using Alternating Current (AC) power from Northern Samar Electric Cooperative, Inc. (NORSAMELCO), which only supplied power from 4:00 p.m. to midnight.



Photo credit: People in Need (PIN)

Key Lessons/Best Practices:

1. Barangay **support and training** are crucial, particularly **leadership succession planning** to sustain projects. The REACH Project case study on Marubay noted how the establishment of their solar-powered water system had depended on the barangay chairman at that time, who had expertise and knowledge in solar energy. To ensure that their system can be sustained even after leadership or political changes, it was important for the barangay to identify, select, and train barangay utility workers in operating and maintaining the RE system, and understanding its components.

2. **System ownership and responsibilities** need to be established early on. In Marubay, **community ownership** was key to the longevity of the water system. The barangay utility workers managed the water facility and were responsible for repairs under the barangay council's direction. The community takes pride in its water system and gained a sense of ownership from the service it provides. The fees collected from water users were used to maintain and upgrade the system. For communities considering RE projects, it's important to conduct an **"inventory of technical know-how," including local skills, materials, and labor** to determine how the community can be involved in the installation, operation, and maintenance of the water system.

3. The local government should strive to **work with the RE industry and sector** for project installations while **developing local skills' capability and infrastructure** for system maintenance. According to the barangay chairman, developing a **network of suppliers** was one critical factor for the sustainability of the RE.

4. RE works best when it develops **functional linkages with core rural businesses** (in agriculture, forestry, green tourism, etc.). RE must have a role within the rural economy to create new employment opportunities.

5. Rural RE systems are technically reliable and economically viable with **community support**. Community consultations were held during the planning phase to determine their willingness to embrace rural RE technology, as community participation is essential for such development and promotes human-centered approaches in energy planning.

6. Maintenance is critical for long-term system survival. **Preventive maintenance** steps should be included in project planning from the start. While maintenance activities can often be funded with revenues from proceeds of users' fees, the lack of attention to

institutional issues often leads to inadequate system maintenance and eventual system degradation to the point of failure. To avoid this, an RE water supply system must include realistic system sizing (projected demand) and proper institutional controls from the start. Barangay planners should consider a possible rise in water demand, a reasonable and realistic water fee structure acceptable to the users for water consumption, and a means to meet future maintenance requirements.

7. When using RE technologies, it's important to consider **institutional factors and local infrastructure**.

Collaboration among the Department of Energy (DOE), Department of Finance (DOF), National Economic and Development Authority (NEDA), provincial government, local government units, and barangays is essential to provide support for planning, funding, deployment, local capacity building, and institutional arrangements. For example, the 2018-2023 Provincial Development and Physical Framework Plan (PDPFP) of the Provincial Government of Northern Samar included several RE-related programs and projects. One of PDPFP's strategies is inviting local, national, private investors, including international NGOs supporting renewable.

8. Another study on the Marubay solar-powered water system noted that for a similar rural RE technology to be replicated, the local population must know the technology and what it can provide; have access to quality equipment and services that are available locally; and can pay for the technology. For the last reason, **access to applicable financing mechanisms** is the key.

Definition of Terms:

- **Photovoltaic panel (PV module)** - a nonmechanical device that converts sunlight directly into electricity
- **Succession planning** - the process used to identify critical roles, skills, and knowledge in your organization and to develop a plan for employees to step into those roles when they become vacant.



Photo credit: People in Need (PIN)

Timodos Micro Hydro Power System

Location: Sitio Timodos, Barangay Manobisa, Magpet Municipality, North Cotabato, Philippines

Challenge: Timodos is about 6 km from the nearest power grid. The access road from the center of Magpet Municipality to Timodos is in very poor condition and access is usually made possible only through an old, rugged road that is almost impassable during the rainy season. Before the MHP system, Timodos residents depended on kerosene-fed lamps for household lighting.

RE Solution: A 23-kilowatt (kW) micro hydro power (MHP) system was completed, tested, and became operational in 2015, providing electricity to 87 households belonging to the Manobo tribe. The MHP system was also designed to energize post-harvest facilities that could boost agricultural production and family incomes, and provide safe drinking water.

Timodos MHP began as a community effort. The Timodos community, with the help of the barangay office, made a request to the Yamog Renewable Energy Development Group, Inc. (YAMOG), a non-government organization (NGO), for a site assessment. The community knew about the benefits of RE from a nearby village in which YAMOG had also developed a scheme.

Community involvement started at the beginning of the project. YAMOG met with the stakeholders to discuss planning, funding, community contribution, development, and management. Because the project was funded by a German NGO Misereor and KZE-Germany (German Government), a project proposal was first created with the



Photo: Still shot from the YouTube video, "Addressing Barriers of Energy Poverty in Barangay Timodos," produced by Timodos Tribal Micro-Hydro Power Association, ULEP Studio, and YAMOG in 2018.



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assistance of YAMOG. The community provided most of the unskilled labor during construction. Skilled labor also came from the community, and other specialized skilled labor was sourced from outside the community. The community was also involved in site surveys and underwent training, including basic electricity training which served as the foundation for the community-based technicians, and operation and maintenance training.

The Mabato River, which traverses Sitio Timodos, is the body of water identified by YAMOG when it conducted the technical study and designed the MHP system. The selection of this RE source was primarily a decision taken by Timodos residents, in line with YAMOG's participatory development approach. The MHP system is located near a 700-hectare watershed, which Timodos residents value for its abundant biodiversity and as a primary source of drinking water.

The household-beneficiaries organized themselves into one energy-users association called Timodos Tribal Micro Hydro Power Association (TTriMPA). The association is registered with the Department of Labour and Employment (DOLE) to do management, tariff collection, reporting and operation, and maintenance of the MHP equipment. Through a participatory and multi-stakeholder approach, the TTriMPA also formulated a Sustainable Watershed Management and Protection Plan for the 700-hectare watershed of Timodos which aims to support the MHP system and maintain ecological balance.

In 2022, the system continues providing electricity to 115 households.

Key Lessons/Best Practices:

1. **Communication** for awareness-raising is a necessary ingredient for a successful MHP project. Community consultation, dialogue, and consensus-building were used to enable community participation in all project stages.

2. **Meaningful community participation** is essential to achieve a sense of **community ownership** for the MHP project. The residents participated in the identification of the sources of MHP, identification of the riparian zones and critical areas in the watershed, conduct of site surveys, finalization of design, construction of hydropower, preparation and implementation of watershed protection, operation, and maintenance. The success of MHP rural electrification depends not only on the technical aspects but also on the social, governmental, and community aspects.

3. Training in different forms and fields related to MHP itself, including managerial and financial skills are all necessary. **Capacity-building** strategies were attuned to the uniqueness of the community.

4. Successful MHP programs tend to be oriented towards **energy service matched with the needs of the end-user**, allowing simple technology to have a similar impact to complex technologies (Sovacool, 2013).

5. **Leadership**—such as **receiving consistent support** from the government, an experienced implementing agency, and a clear project champion—is also important in the success of an MHP program. Timodos, for example, had consistent support from the developer YAMOG.

6. YAMOG's involvement in the establishment of the MHP system—including technical assistance, community engagement, capacity building, and connecting the project with possible funders—shows the **important role of NGOs** in developing RE projects. A study on the role of NGOs in developing community RE projects in Indonesia highlighted that a key factor for the success of such projects is a stable and consistent institutional and regulatory environment wherein institutional support and policy integration happen at three levels: national, local, and intermediary. At the local and intermediary levels, the role of NGOs includes supporting community-based organizations or electrification cooperatives in their RE projects and, as intermediaries, perform different roles in the following areas of RE project development: guidance on policy formulation, rural electrification strategy and grid coverage, creation of support networks to help communities, support to manufacturers, facilitating financing, preparing simple technical guidelines, assisting

in community planning or identification of training requirements, among others.



Photo: Still shot from the YouTube video, "Addressing Barriers of Energy Poverty in Barangay Timodos," produced by Timodos Tribal Micro-Hydro Power Association, ULEP Studio, and YAMOG in 2018.

Definition of Terms:

- **Micro hydro power (MHP)** - a clean source of RE that has been utilized for remote communities for electricity generation. The technology of MHP is mature and proven and operates on the same principle as a large hydroelectric power plant but with much lower power capacity, depending on the country standard. In the Philippines, the DOE defines micro hydro plants as hydroelectric power plants with a capacity between 1 kW and 100 kW. Most micro hydro systems are run-of-river type systems, in which a specific volume of water available all year round is diverted from the river to the MHP system using diversion weirs. Large dams are usually avoided for MHP systems due to their environmental impact. Instead, a natural head brought about by the topographic terrain is used for MHP. To be feasible, MHP requires a continuous water supply for at least most of the year and a significant head. Because of the requirements for water and head coupled with grid-unreachable communities, MHP is mostly used in mountainous tropical rural areas. MHP had already proven itself to be a practical and potentially low-cost option for generating electricity at remote sites.

SecuRE Negros campaign

Location: Province of Negros Occidental

Challenge: Developing countries, such as the Philippines, are the most affected by the global energy crisis. This crisis is caused by a combination of factors, including the dependency on non-RE sources like coal, oil, and natural gas, which are rapidly becoming scarce and, consequently, more expensive. Fossil fuel dependency also worsens the climate crisis, with the Intergovernmental Panel on Climate Change (IPCC) citing fossil fuel use as the main driver of global warming. If no action is taken to mitigate global warming, the environmental, social, and economic challenges threatening life on Earth will become more severe.

RE Solution: Sub-national governments in the Philippines have a role in developing RE following the country's National Renewable Energy Program (NREP), which guides national and local RE planning and sets the strategic building blocks that will help the country achieve the goals in the Renewable Energy Act of 2008 (Republic Act 9513).

Based on the Responsible Energy Initiative (REI) Philippines' report on the ecological and social impacts of scaling RE, provincial and municipal governments have the power to set additional regulations and policies for developing RE projects within their jurisdictions, such as zoning regulations for RE facilities, environmental standards for RE projects, and incentives for RE investments. These must comply with national laws and regulations and the final decision to approve or reject RE projects lies with the national government.

The Province of Negros Occidental aims to contribute to the national RE goals, foster energy security, and address the climate emergency by developing a roadmap for RE development, branded as the SecuRE Negros campaign.

Formally launched in February 2024, the SecuRE Negros campaign is an ongoing initiative of the Negros Occidental Provincial Government with a multi-stakeholder, whole-of-society approach. Through a series of consultative and participatory activities with all stakeholders, it aims to institutionalize the Negros Occidental Energy Development Roadmap and inform major stakeholders and the public about the effort and the benefits of working towards a renewable, reliable, accessible, affordable, and sustainable energy system for the province. Before this

campaign, Negros Occidental has been establishing itself as the solar energy capital in the Philippines and, along with Negros Oriental, has been dubbed the RE capital and a "hope spot" for RE transition in the country. According to the Center for Energy, Ecology, and Development (CEED)'s 2020 scoping study of Negros Island's power sector transformation, the island has a dominantly RE installed capacity mix and abundant RE resources. The study noted that RE comprises 95% of Negros' Installed Capacity Mix, with solar having the biggest share at 47%. Negros Occidental, specifically, hosts five solar power firms operating six plants, with the Solar Farm in Cadiz City that started operations in 2016 being Southeast Asia's largest solar farm, generating 132.5 megawatts of power. San Carlos City also hosted the country's first utility-scale solar plant which started in 2014.

The CEED study also mentioned how the island has local energy policies and a policy environment that is attractive for RE players. Both Negros Oriental and Negros Occidental have already issued clean energy declarations and have had several dialogues with local government leaders, electric cooperatives, churches, and academic institutions that show the support of stakeholder groups in RE efforts.

Both provinces are also home to strong social movements against coal-powered energy led by local environmental and youth groups, which has led to both provinces declaring to "veer away from the operation" (for Negros Oriental) or "oppose the entry or establishment" (for Negros Occidental) of coal-fired power plants. For the Negros Occidental Provincial Government, this commitment to be coal-free was through the issuance of its Executive Order (EO) No. 19-08, Series of 2019.

This EO also mandated the establishment of a multistakeholder Provincial Renewable Energy Council (PREC) to lead the formulation of measures and programs towards a RE-based and energy efficient province. Since executive orders may easily be repealed by the next governor, Negros Occidental's EO No. 19-08 "recommended" the issuance of an RE ordinance to the Provincial Board (legislative council) and that the ordinance should also state an opposition to setting up coal plants anywhere within the province. When current Governor Eugenio Jose Lacson was first elected in 2019, local environmental and youth groups called for the

provincial government to uphold EO No. 19-08 out of concern that it might be repealed, especially amid the proposed coal plant in San Carlos City during that time.

While the PREC and RE ordinance are yet to be created as of this writing, the Provincial Government of Negros Occidental instead passed another EO in November 2021. Provincial EO No. 21-52 created the Provincial Power Sector - Study Group (PPS-SG), led currently by Provincial Consultant on Energy and Environment Concerns (PCEEC) and former Governor from 1992 until 2001, Rafael L. Coscolluela, in partnership with the University of St. La Salle (USLS). The PPS-SG aims to come up with a power sector development framework that will be used as basis to develop the province's energy development roadmap.

In August 2022, the Philippine News Agency (PNA) reported that the PPS-SG scheduled focus group discussions (FGDs) with groups from various components of the power sector—those who are involved in transmission, generation, distribution, and the consumers—including power generators and electric cooperatives, to find out about the challenges they face and eventually come up with solutions. The PPS-SG also created a team to focus on the Negros Occidental Power Sector Assessment Study (NOPSAS). The NOPSAS team is tasked to assist the PPS-SG in the research and assessment of the power industry situation and prospects in the province through desk studies, interviews, and conducting FGDs with stakeholder groups. In April 2023, the EO No. 23-16, Series of 2023 was signed to create a provincial Just Energy Transition (JET) council tasked to coordinate the preparation and implementation of the Just Transition to Renewable Energy Program. The EO followed the recommendation of the completed NOPSAS, which highlighted the need for a just transition to “Reliable, Renewable, Available, Accessible, Affordable, and Sustainable Energy in Occidental Negros by 2030” (RRAAASE-ON 2030). The EO stated that the NOPSAS also identified specific areas of concern in the national and provincial power sector, and proposed particular courses of action which will require coordinated planning and implementation by the Provincial Government in concert with power sector stakeholders and policymakers. With the RRAAASE-ON 2030 as its goal, the Provincial Government created the JET council led by the governor as the chairperson; the provincial administrator as the co-chairperson; the Provincial Energy Efficiency and Conservation Officer as the focal person; and the Sangguniang Panlalawigan (Provincial Board) Committee on Energy, Public Utilities & Transportation representative, Provincial Environment Management Officer, Provincial Planning and Development Office Officer-in-Charge,

Provincial Engineer, Provincial Information Officer, Provincial Electrical Consultant, and the PCEEC as its members. The EO stated that the private sector, particularly members of the PPS-SG and representatives of power distributors, producers, and consumers, shall be “enjoined to participate in relevant activities and undertakings on an ‘as needed’ basis.”

The Provincial Government then tapped the USLS to join its efforts in the creation of the Negros Occidental Energy Development Roadmap, formalized through a signed Memorandum of Agreement (MOA) in January 2024. The collaborative partnership with the USLS is one of the key recommendations listed in the NOPSAS. The provincial government allotted Php2 million for the USLS partnership, wherein USLS agreed to help institutionalize the roadmap through various events.

These local policies and the USLS partnership have led to the SecuRE Negros campaign, consolidating the province's RE efforts to increase public support for the provincial government's policy and programs on RE. Since the campaign's launch in February 2024, the Provincial Government and USLS has organized a Provincial Stakeholders' Consultative Power Summit and the RE Week in May 2024.

The Provincial Stakeholders' Consultative Power Summit convened representatives from the energy industry stakeholder groups to craft the Provincial Energy Development Roadmap with the RRAAASE-ON 2030 goal. USLS' student publication *The Spectrum* reported that around 150 representatives of various sectors, including power producers, electric cooperatives, local government units, and civil service society organizations, attended the summit and participated in the sectoral consultation workshops for the roadmap. The summit was said to have resulted in sectoral objectives and action plans for attaining energy security in the province. Key findings and



Photo from the Provincial Government of Negros Occidental Facebook page

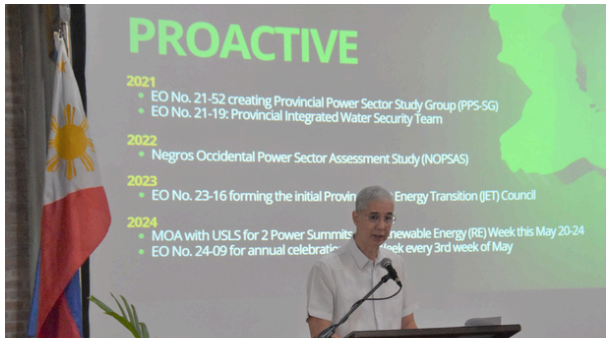


Photo from the Provincial Government of Negros Occidental Facebook page

recommendations in the NOPSAS were also presented. The PNA reported that a key recommendation from the sectoral consultation workshops was to create a collaborative task force composed of government agencies, industry stakeholders, and community representatives that will oversee the implementation of the roadmap and ensure a seamless transition to renewable energy sources while maintaining power security and reliability in the province.

Meanwhile, EO No. 24-09 was signed in March 2024 declaring the third week of May as RE Week in Negros Occidental, with the goal of generating commitment from various stakeholders to adopt and promote RE. The EO mandates the allocation of necessary funds for the successful implementation of the RE Week activities and encourages partnerships with the private sector and national government agencies to enhance support for RE initiatives.

The first RE Week last May 2024 included RE exhibits, informative forums, and an LGU Day. The activities featured energy issues, policies, solutions, innovations, and actions. Booths for exhibitors, such as RE companies, were free of charge. The LGU Day included speakers from the DOE to discuss the following topics: the Philippine Energy Plan 2023-2050, the Harmonized RE Permitting Process through the Energy Virtual One-Stop Shop and LGU Energy Code, Mainstreaming Energy Efficiency and Conservation Program in the LGUs, and Accreditation and Certification of Local Energy Efficiency and Conservation Officers and Energy Efficiency and Conservation Practitioners.

Last June 22, 2024, the Negros Occidental Provincial Government reported that the PPS-SG concluded a two-day planning conference with Department of Energy (DOE) officials wherein the basic framework for the Provincial Energy Development Roadmap was finalized. The NOPSAS

team presented their study and outputs and recommendations from the Power Summit held in May 2024. The DOE also presented its updated Power Outlook and Energy Roadmap. Officials from DOE's Energy Policy and Planning Bureau (EPPB), Electric Power Industry Management Bureau (EPIMB), Renewable Energy Management Bureau (REMB), and the Visayas Field Office attended the conference. The provincial press release also said that the roadmap will be presented to all stakeholders for adoption at a future summit.

The Philippine Information Agency (PIA) published a story about the SecuRE Negros campaign launch, wherein Governor Lacson and Jeanette Patindol, NOPSAS team lead, mentioned that the province is interested in distributed energy resources or distributed energy systems, which was described by Patindol as "more decentralized" because consumers can become producers of energy.

The 2020 CEED study also recommended promoting distributed RE systems, also called community microgrids, especially because the study found that most residents are willing to be actively involved in the RE transition. The study said that community microgrids alongside energy efficiency are "critical" initiatives, as these can empower electricity consumers to choose their own source of electricity and to own and manage their own power systems, decrease distribution losses and increase system reliability, and even climate resiliency. Energy efficiency goes together with promoting community microgrids because the study said it entails a change in behavior and lifestyle. The study also noted how community microgrids can utilize the high solar resource potential in Negros Island without facing the problem of grid-integration.

Key Lessons/Best Practices

1. Gathering, formalizing, and acknowledging partners for RE development opens a wide range of opportunities for local governments, including: access to technical expertise and resources (for example, the Negros Occidental Provincial Government's partnership with the USLS, an academic institution); potential to increase public support for smoother implementation of initiatives, especially when partnering with community-based organizations or civil society actors that have their own circles of influence (in Negros Occidental's case, it has been reported that the bishops of the dioceses of San Carlos, Kabankalan, and Bacolod, as well as NGOs such as the Negrosanon Initiative for Climate and the Environment (NICE) and Freedom from Debt Coalition (FDC) - Negros, have expressed support for the SecuRE

Negros campaign); and innovation and efficiency, as people from diverse backgrounds can contribute to ensuring that RE initiatives can effectively respond to people's needs.

2. Local policies and multi-stakeholder engagement initiatives can foster an environment ready for RE initiatives. In Negros Occidental, past social movements have shown that there are local communities and groups in the province that understand, care about, and want to take action in addressing environmental issues. Even with this advantage of already having a number of constituents inclined towards RE, the Negros Occidental Provincial Government still took steps to promote RE, understanding how far-reaching its influence can be in bringing people together. The SecuRE Negros campaign, for example, includes activities that can help increase people's knowledge about RE so that they can have a more meaningful participation in the creation and implementation of an energy development roadmap. Actively promoting RE also attracts potential partners and supporters from various sectors. For Negros Occidental, this was evident in the number and diversity of participants during its RE Week and SecuRE Negros campaign launch.

3. A campaign like SecuRE Negros can unify local initiatives under one goal and communicates to the public what a local government prioritizes.

4. Multi-level and multi-sectoral collaboration is essential to mobilize efforts in RE development. For example, the Negros Occidental Provincial Government worked closely with the national government through the DOE. The provincial government's partnership with USLS also helps accelerate their efforts.

5. Having a team of experts commissioned by the provincial government that is **focused specifically on studying and creating a framework for local RE development and conducting multi-stakeholder consultations**, such as Negros Occidental's PPS-SG and NOPSAS team, is a way for provincial governments to kick-start RE development and ensure that subsequent initiatives are based on research and public consultations.

6. Commitment to RE development includes **allocating funds** for such initiatives. For example, the Negros Occidental Provincial Government had allocated PhP2 million for its partnership with USLS.

7. Provincial governments can **attract RE investors from the private sector** in different ways. In Negros

Occidental, being open to RE projects by the private sector is aligned to Article 1, Section 2 of its Provincial Investment and Incentives Code of 2014, which states: "It is hereby declared to be the policy of the Provincial Government, in line with its declared goal of becoming the Organic Food Capital of the Philippines, to pursue the development of a diversified green economy by creating an environment that would encourage local and foreign business entities to invest capital in preferred endeavors that will help bring about sustainable and inclusive socio-economic development for the long-term benefit of the people of Negros Occidental." The province's first RE Week celebration in May 2024 was also a way to attract potential investors. Moreover, the Provincial Government also continues to be open to meetings with representatives of RE companies, which are publicized through the provincial government's press releases.

8. Provincial governments can lead by example by adopting RE in government-owned buildings and funding RE projects in cities and municipalities to encourage city and municipal governments to follow suit. According to a news article by the PNA, Governor Lacson of Negros Occidental said he initiated an energy audit for the Provincial Capitol and other key provincial buildings, which is the basis for the provincial government's decision to solarize seven of its buildings; an initiative that is still in the works as of this writing. In May 2024, the provincial government installed a solar-powered water pump at the Provincial Capitol Lagoon. In recent years, the provincial government has funded RE projects in cities and municipalities, such as a solar-powered water system for Barangay Orong in Kabankalan City worth PhP8 million, inaugurated in February 2021; an integrated solar-powered irrigation system for the Myrienne Farmers Development Association and Myrienne Youth Farmers Organization in Hacienda Myrienne, Barangay San Pablo, Manapla Municipality worth PhP6.9 million, inaugurated in July 2022; and the solar streetlights project at the Tourism



Photo from the Provincial Government of Negros Occidental Facebook page



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Circumferential Highway (Bacolod-Silay Access Road) in Talisay City, which was inaugurated in November 2023. The provincial government has also funded several barangay development projects involving solar-powered streetlights throughout the years and has also distributed solar kits, including during the closing ceremony of its first RE Week. The provincial government has also shown support to the La Carlota City Government for solarizing its city hall. Governor Lacson attended the ceremonial switch-on of La Carlota's solar PV system in February 2024, while the provincial government published a press release commending the city government's effort to adopt RE.

Definition of Terms

- **Distributed Energy Resources (DER)** - small-scale units of local generation connected to the grid at the distribution level. According to American multinational technology company IBM, DER can be connected to electric grids or isolated, with energy flowing only to specific sites or functions, and includes both energy generation technologies and energy storage systems. DER systems use a variety of energy sources but are often associated with RE technologies such as rooftop solar panels and small wind turbines. In the Philippines, the development and utilization of DER is guided by the DER Rules issued by the Energy Regulatory Commission (ERC) in May 2022.
- **Distributed Energy Systems (DES)** - refers to an electricity generation system that incorporates multiple small-scale devices rather than a centralized power plant and distribution network. The Economic Research Institute for ASEAN and East Asia (ERIA) defines DES as a decentralized power system where electric power is produced and consumed locally at or near the point of use and involves the distributed power technologies, which can be stationary (typical of

electrical applications) or mobile (as in marine and locomotive applications). DESs stand in contrast to central power stations that supply electricity from a centralized location, often far from users. According to ERIA's 2018 study, there is no universal consensus on or standard definition of DES.

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