

REImagine a Bright Future

A REpublic for the Common Good



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REImagine a Bright Future: A REpublic for the Common Good

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REImagine a Bright Future is a CentRE publication featuring transformative and innovative renewable energy (RE) initiatives in the Philippines particularly in areas experiencing higher incidence of energy poverty. It aims to inspire more stakeholders particularly the local government units, people's organizations, enterprises, and social impact investors to integrate RE in their development plans and poverty eradication strategies. By presenting RE projects especially those in disadvantaged communities, the CentRE hopes that this publication can move these actors to support and help accelerate RE development and deployment in the country.

The first volume released in 2019, **REImagine a Bright Future: Another Power is Possible**, introduced some RE technologies applied in off-grid areas. It showed how people's lives improved after having access to electricity from renewable energy, which, in turn, allowed them to enjoy lighting at night, convenience from electrical appliances, mobile connectivity, and better livelihood.

The second volume, **REImagine a Bright Future: A REpublic for the Common Good**, is a compilation of stories on RE initiatives for the benefit of many or an entire community.

Renewable energy - harnessed from natural resources like sun, wind and bodies of water - is increasingly considered as a public good given its indispensable function in improving the quality of life as well as in saving lives. In fact, there is a growing recognition that access to energy or electricity is a human right.

Undeniably, RE plays an important role in meeting other necessities in life— both at the individual and collective levels.

A REpublic for the Common Good showcases the application of RE technologies in public or common spaces for the benefit of the majority. These initiatives show how RE can be used to provide not just lighting, but safety, education and research, communications, and environmental protection as well.

This collection of stories aims to encourage institutions, especially the government, to maximize public buildings and common spaces to be powered by RE to realize affordable, clean and available electricity in order to enable the public access to their basic needs and or services.

It is my honor to invite readers to explore the 2020 REImagine a Bright Future series of the Center for Empowerment, Innovation, and Training on Renewable Energy (CentRE) and the Friedrich Ebert Stiftung Philippines organization.

*This volume, **A REpublic for the Common Good**, features five examples of how renewable energy (RE) development can be a driving force for the general welfare of our population, and especially the most vulnerable sectors: from RE-powered forest protection to solar energy development by an electric cooperative and a diocese, to RE initiatives in and for marginalized communities.*

*These themes are consistent with the call for ecological conversion in the papal encyclical, *Laudato Si': On Care for Our Common Home*, which underscores the imperative to expand renewable energy development as a response to climate change and inequity. “A true ecological approach always becomes a social approach,” the encyclical states, and “it must integrate questions of justice in debates on the environment, so as to hear both the cry of the earth and the cry of the poor.”*

The stories featured in this publication embody this socio-ecological approach, and I hope they inspire more and broader actions toward a renewable and sustainable energy future.

*Atty. Cecilia G. Dalupan, COO-WeGen Energy Philippines
President, CentRE*

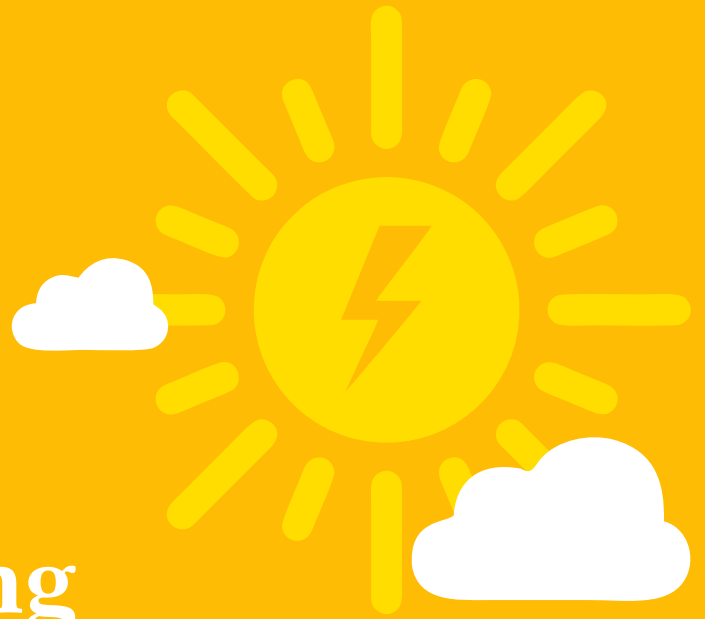
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RE powering Community-based Forest Protection

By **Riedo A. Panaligan**

Riedo “Rei” Panaligan is president of think-act institution Center for Renewable Energy and Sustainable Technology (CREST), vice president-internal of Center for Empowerment, Innovation and Training on Renewable Energy (CentRE). Rei, a licensed electronics engineer, concurrently holds leadership positions in various regional and local climate networks. He is currently taking his Master (MSc) in Business Management, major in Green Energy and Climate Finance, at the Berlin School of Economics and Law.



Unlike conventional power plants, renewable energy systems such as solar PV, microhydro, and small-scale wind can be easily deployed, operated, and maintained by trained local residents. By enabling electrification using renewable energy, communities benefit from lighting during the night, helping extend time for social and economic activities and increase the sense of safety among families, especially among women and children.

And for indigenous peoples (IPs) and upland communities of Sierra Madre Mountain Range (SSMR) such as the Dumagats, the introduction of renewable energy also reinvigorated efforts to protect the forest, watersheds, and ancestral domains.

Many Dumagat indigenous families live in subsistence.

Despite their harsh living conditions, the Dumagat indigenous families who live in subsistence continue to protect the forests and fight for their ancestral domain that are encroached upon by environmentally destructive projects.

Empowered by access to electricity, Dumagat leaders now find it convenient to charge their mobile phones, allowing them to easily report illegal logging

activities to enforcers and support groups. During extreme weather events, Dumagat leaders also help provide crucial and timely updates about floods and landslides that are useful, especially to residents in low-lying areas.

Frontline members of the Bulacan Provincial Anti-Illegal Logging Task Force, composed of Dumagat leaders and volunteers, harness the energy from the sun to provide energy to an off-grid communication radio tower. The tower amplifies their radio signals, helping to transmit them to wider areas inside the Angat and Ipo Watersheds.

This increased radio signal coverage proved helpful in entrapment operations that helped apprehend illegal loggers and poachers.

The Sierra Madre Mountain Range: habitat and protective barrier

The Sierra Madre Mountain Range (SSMR), also known as the “backbone of Luzon” is the longest mountain range in the Philippines, spanning ten provinces and covering a land area of approximately 1.4 million hectares. It serves as a natural protective barrier against typhoons from the Pacific Ocean. (www.forestfoundation.ph).

The mountain range also represents 40% of the country's remaining forest cover. It hosts a number of key biodiversity areas or sites of global ecological significance for the conservation of biodiversity. The region has at least 201 species of mammals, 556 species of birds, more than 85 species of amphibians, and 252 species of reptiles, 48 percent of which is endemic to the Philippines.

The SMMR hosts the ancestral domains of the Dumagat (or Agta) and Remontado (mixed Dumagat and lowlander) tribes. In the province of Quezon, for one, the Dumagat-Remontado ancestral domains have a total area of 164,880 hectares of terrestrial ecosystem and 18,753 of coastal/marine ecosystem, covering completely the municipality of General Nakar.

Traditionally, the Dumagats were hunters, fishers and gatherers, moving from one place to another, with small areas of cultivation through the traditional practice of swidden farming (*kaingin*). Dumagat families, since time immemorial, depended on the bounty of the forest to support their day to day subsistence living.

The deforestation and degradation of SMMR has been ongoing at an alarming rate, mostly through illegal logging, mining, and large scale slash-and-burn practices by commercial farmers.

From 2003-2010, more than 100,000 hectares of mossy forest has already disappeared. On the other hand, grasslands areas increased from 41,379 hectares to 162,019 hectares during the same period.

Monitoring and navigating vast hectares of forest lands are very difficult.

Forest rangers are undermanned and are surviving on meagre monthly allowances. Critical portions of the forests can only be reached by trekking long distances in difficult terrains, hence anti-illegal logging operations usually last for days and weeks. Forest ranger's camps in the mountains do not have access to the electricity grid and they are forced to rely on expensive AA and AAA commercial batteries.

Dumagat families that live in the forest and mountains can help monitor illegal logging and other environmentally-destructive activities. However, filing these reports to proper authorities or NGOs were difficult since their communities are isolated.

How renewable energy helps guardians protect the forest

The Center for Renewable Energy and Sustainable Technology (CREST) works with different partners to help the community forest guardians gain access to

renewable energy such as solar photovoltaic technologies. These systems range in size and capacity depending on the energy needs of the intended beneficiaries.

The deployment of a 2kW solar PV system to power the Angat Forest Radio Tower was a partnership between CREST and a local non-profit grant-making institution. The tower was built by the local group Save Sierra Madre Environment Society, the Provincial Office of Bulacan, and the Dumagat council in the province. CREST also deployed a solar PV microgrid in the adjacent Punduhan ng mga Dumagat, a new village that serves as meeting and transient hub of Dumagat families traveling in and out of their forest communities.

Similarly, in a distant part of SMMR, twenty (20) Dumagat families in Sitio Cablaog of General Nakar (Quezon) also received solar home systems from CREST. These families are part of the local community Bantay Gubat that monitors logging, mining, and poaching activities in their surrounding forests. The Dumagat communities in this part of the mountain is also under threat of the controversial Kaliwa Dam, which if built, will submerge thousands of hectares of prime forest and ancestral domains.



Renewable energy also provided additional support to Bantay Gubat of Mt. Banahaw-Cristobal National Park. The 600-W solar rooftop installed at their primary camp in Mt. Banahaw provides adequate power for charging of radios, flashlights, and other devices. Lighting provides additional security to forest rangers, students, and mountain climbers spending the night at the forest ranger's camp.

RE powers mobile phones that help prevent illegal logging activities

Abundant solar resources and declining hardware prices of solar PV technologies have provided clean, alternative sources of power for many last-mile communities, replacing kerosene and diesel generator sets.

For SMMR communities whose lives depend on the bounty of the forest, access to electricity can also mean enhanced

activities to protect the watersheds and natural resources.

Using mobile phones powered by renewable energy, Dumagat leaders are now able to connect to the outside world in an instant. As a result, Bantay Gubat enforcers are able to enhance their anti-illegal logging operations, thanks to their RE-powered communications and monitoring equipment.





These amenities are especially convenient in the SMRR forest and upland communities, most of which are isolated and inaccessible especially during the monsoon season.

CREST ensures that appropriate knowledge and skills are also transferred to partner communities.

More than 100 community members received training and knowledge on solar PV technology. CREST also trained selected residents in technical skills, including those involving operations and maintenance of their solar PV system.



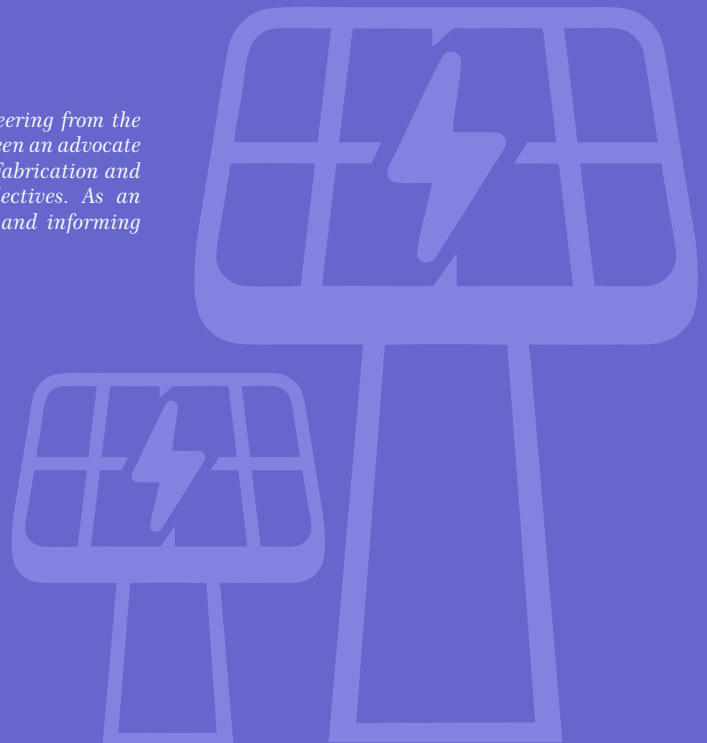
In Sitio Cablao, the beneficiaries created a common fund that they can use for repairs and replacement of already exhausted devices such as batteries and LED bulbs.

CREST, which provides support to marginalized and last-mile communities – allowing them to access and enjoy the benefits of sustainable energy systems, – will continue to work with indigenous people's communities and marginalized upland families. This is in recognition of their efforts in protecting our remaining forests and biodiversity.

CREATEing Possibilities with RE: Empowering marginalized communities, Pursuing Research for Development

By Kathleen Gail Tolosa

Kathleen Gail Tolosa is a graduate of Materials Engineering from the University of the Philippines Diliman. She has always been an advocate of a greener and more sustainable future, taking Solar Fabrication and Humanitarian Engineering as her undergraduate electives. As an educator, she has always been interested in teaching and informing people about the field of renewable energies.





In 2012, solar energy was new and foreign, intimidating and daunting.

But that didn't deter Dr. Randell Espina, Dean of the School of Engineering and Architecture of the Ateneo de Davao University (AddU) from advocating Renewable Energy (RE).

Starting with a 10kW Solar-PV system, he and his team obtained hands-on experience with the technology which encouraged them to pursue bigger projects.

By 2018, the AddU-institutionalized Center for Renewable Energy and Appropriate Technologies (CREATE) — which resulted from the RE advocacy of Dr. Espina and his team — received funding from the Department of Science and Technology (DOST). CREATE was to take the lead in managing the Mindanao Renewable Energy Research and Development Center (MREC), a consortium of research centers of universities across Mindanao that do studies on Res.

Around this time, Dr. Espina and CREATE have already mounted multiple Solar-PV systems that have helped power the entire AddU campuses.

To further increase the reach of AddU's advocacy, lessen its carbon footprint, and provide skills and training to individuals, the University has led several mission-driven projects to empower and enable indigenous people (IP) communities by introducing them to RE technologies, mainly solar and hydro.

Despite their contributions and achievements, AddU and its faculty members remain grounded by remembering the purpose of every project.

In the words of Engr. Nelson Enano Jr., the current Director of CREATE and Consortium Chair of MREC, *“It is not just about doing research for publication. We are not teaching simply to impart knowledge but to capacitate people and the marginalized who do not have access to energy systems. It is not about collecting journal papers but for the communities to know what your papers are about and how it will benefit them.”*

Taking RE Seriously: CREATE and the P2-M Solar Project

The AddU is one of the biggest universities in the Southern Philippines.



As an academic institution, it takes pride in being the first university in the Philippines to have installed medium scale Solar-PV in all campuses. As of 2018, the University has already installed more than 1 MW at the rooftops of its campuses: about 330-kW in the Jacinto campus; about 135 kW in the Matina campus; and about 550-kW in the Bangkal Campus.

Prior to reaching this scale, AdDU in 2012 has already been handling RE studies under Dr. Espina, mainly focused on Wind and Hydro RE. He and his team wanted to show the University that they are willing to take RE seriously with bigger and better projects that can help sustain the University in the long run. Dr. Espina proposed a research project studying solar-PV systems to the then newly appointed University President, Fr. Joel E. Tabora, S.J.

The project was not without careful planning.

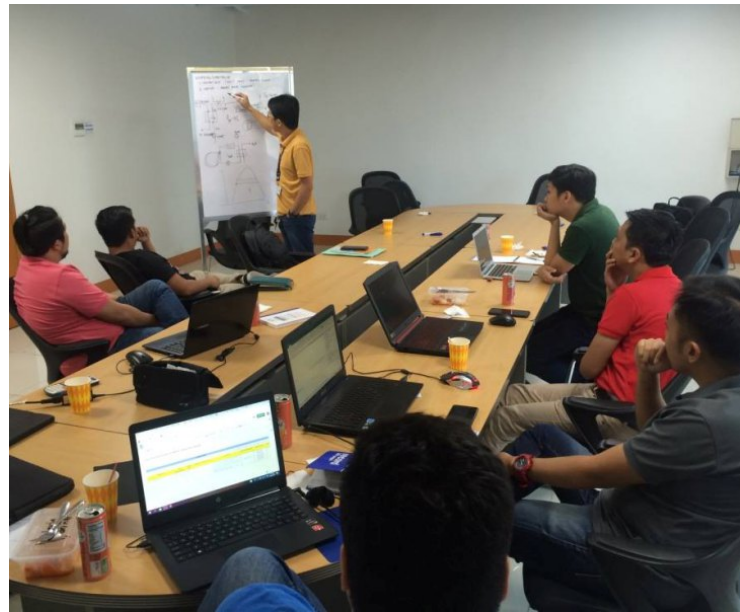
Dr. Espina was able to prove that the proposal was viable in several aspects.

He convinced the University President that the successful study of the technology can pave the way to job creation, reduced energy costs, as well as a long-term and sustainable supply of electricity for the school. The

social impact of the project was also too significant to be ignored. Indigenous peoples (IP) in remote areas can also benefit from the project.

After all this planning and pitching, the Dean of School of Engineering and Architecture (SEA) finally received the go signal and the support of the University President.

However, this project proved to be more difficult than initially thought.



Lending solar panels in the aftermath of typhoon Pablo

In December 2012, Typhoon Pablo devastated entire communities in Mindanao, leaving hundreds homeless and without access to electricity.

“The need of course was far greater than what our teams could bring, but instead of giving up in despair the ADDU teams continued helping. Through our Center for Renewable Energy and Appropriate Technology, we took our solar panels from the roof of the Finster Building and metamorphosed them into charging stations for Compostela, New Bataan, Monkayo, Cateel, Baganga, Lambuhon, Manay and Caraga,” expressed Fr. Tabora in his blogpost on the 12th of December 2012.

By this time, CREATE was already institutionalized.

Led by Engr. Enano Jr., CREATE uninstalled its 10kW PV system so that it could be lent to evacuation centers to provide an alternative source of electricity to the evacuees as well as to promote the new technology.

“We had 22-25 barangays that were affected by the Typhoon Pablo. No electricity was there, and it was a good experience since



solar panels weren't known by a lot of people then: about solar facilities and how to use one,” recalled Engr. Enano Jr.

Everyone from the AddU community was enthusiastic to help. From the transportation to the technical people needed to install the system, all the faculty members of the University pitched in to join efforts in providing help to the affected families.

After the agreed 6-month loan of the panels, the panels were returned secure and undamaged—a gesture that CREATE and AddU greatly appreciated.

From this act of service, Engr. Enano Jr. and CREATE realized how RE is not only a form of mitigation of the effects of climate change but can also act as a tool of adaptation. *“We realized that renewable energy is not just a mitigation. Because of Typhoon Pablo, we realized that for solar panels, PV systems, [it] is an adaptation mechanism for the community and for the LGU because those who have light, they are able to cope [with the situation]. They can charge their phones and have lighting, they can cook their food,”* said Engr. Enano Jr.

While big solar farms are considered as a mitigation strategy from a climate change perspective — as indicated by the Intergovernmental Panel on Climate Change (IPCC) — Dr. Eñano said that his team in CREATE found out that small-scale distributed RE, such as a PV system, also acts an adaptation tool. After all, it serves the community by helping survive the impact of climate change, as shown by their experience with the typhoon.

In May 2013, with the new perspective on RE and Solar-PV systems, CREATE proposed to the National Disaster Risk Reduction and Management Council (NDRRMC) and to local government units (LGUs) to have a Solar-PV system alongside other traditional disaster emergency kit essentials. This materialized in November

of the same year when a survival kit was designed, which included a solar-powered lamp, a cellphone charger, and water purifier — all powered by solar panels.

True to its advocacy, the future projects handled by AdDU and CREATE did not only create leaps in the fields of education and research but also helped in providing skills and training to IP communities, further resulting in significant and profound social impact.

Going SolaRE: Providing skills and training to IP Communities

Following the loan of the 10kW PV-system to the affected communities of Typhoon Pablo, CREATE once again installed solar panels to Sitio Bansil, Barangay Malabog, Davao City in October 2015.

Consisting of twelve (12) solar panels and two (2) 12-V deep cycle batteries, the project was able to provide the community — consisting of 23 households mostly of indigenous peoples — of a battery charging facility for their mobile phones.

Also in January 2018, Dr. Espina together with his team and University President Fr. Joel Tabora were able to sign another project helping the Mandaya Tribe in Manuriago, the most remote among the barangays of New Bataan, to have access to electricity.



“Ateneo de Davao University is committed to modernization, to progress but we're also committed to saving, respecting the environment. And one of the ways we do that is to try to harness our energy from natural renewable resources. To be able to bring the benefits of solar technology of modern technology to our brothers and sisters Mandaya who are way up unreachable by ordinary systems but not unreachable by the sun.” AddU President Fr. Joel Tabora said in the MOU signing at the Euro Hydro Power Plant in Taytayan, New Bataan, Compostela Valley.



The project was made possible by the funding provided by the Philippine Council for Energy and Emerging Technology Research and Development (DOST-PCIEERD) as well as the collective efforts of AddU, DOST XI, BLGU of Manurigao, PLGU of Compostela Valley and MLGU of New Bataan.

As a part of each project, a portion of funding is allocated to provide training to the involved communities known as the *“Capacitation Phase”*.

In Marilog 2015, IP women were trained for a Solar-PV and pico-hydro turbine installation. It is a small project but they handled their own steelworks and were able to assemble the equipment that will provide

them a small and steady source of electricity. Similar to the Mandayas, the entire community was given training to help maintain the system.

But more than simply giving them lamps, these installations are instruments for education and economic development. As asserted by Engr. Enano Jr., *"The research is not just for publication. Ateneo always try to instill in its researchers that it is not 'Research and Development' but rather 'Research for Development'. It is through these lens that initiatives and projects such as these are accomplished."*

Ocean RE, Hybrid Technologies for Mindanao

Even though CREATE was institutionalized in 2012, efforts have already been made to transform its structure, vision, and advocacy into a formal research center, along with all the brainstorming and framework design. Most of the RE projects handled by CREATE in its early years were carried over from the projects Dr. Espina were already working on.

Since 2018, CREATE has become known as the Mindanao Renewable Energy Research and Development Center (MREC). MREC,

a DOST-funded project of CREATE, is a consortium of research centers led by CREATE of universities across Mindanao that do studies on REs.

MREC, though mainly focusing on Ocean Renewable Energy (ORE) and Concentrated Solar Power (CSP), also undertakes research on hybrid energy sources. *"Since most, if not all, renewable energy technologies can be hybridized, basically all renewable energy systems can be studied under MREC, and it is not just solely researching on ORE and CSP,"* explained Engr. Enano Jr.

"The humble beginning of the 10kW project along with CREATE will be celebrating its 10-year anniversary and celebrate its becoming as MREC in 2021," announced Engr. Enano Jr. *"This is what we want to continue and we hope that it takes off as a sustainable and working R&D center for renewable energy funded by DOST."*

Proceeding Smarter, Reflecting on the Journey

The entire journey leading Dr. Espina, Engr. Enano Jr., and the rest of CREATE to this point has given them a fair share of challenges and key learnings to impart.

For the Dean of SEA, one way of making better projects is to learn more about the existing technologies in IP communities. *“We should include 'Culture Immersion' when implementing new technology in IP communities,”* he explained. *“By understanding the community, one will have a better relationship with them — gaining their trust for the benefit of both parties involved.”*

With COVID enforcing social distancing, limitations with project management were faced according to Engr. Enano Jr. Fortunately, these obstacles came with valuable advantages as well. Social media and online conference applications allowed MREC to reach members in those living far from the center's office such as those in Zamboanga, Tawi-Tawi, Central Mindanao, Surigao, and those in the Davao Region.



As the Director of CREATE and Consortium Chair of MREC, Engr. Enano Jr. stressed how having a passion for the project are the key ingredients for a successful project implementation.

By doing so, they are able to enact God's Purpose to their fellow countrymen.

“We cannot do this alone, and not because we simply want to do this. We do this because of spirituality — to enact God's Purpose. Personally, I will not do it again and again if there was no heart in the project. Each project is mission-driven. This is the framework of Ateneo: To not only be the brain but also the heart. We do research for development,” Engr. Enano Jr. said.

References

<https://taborasj.wordpress.com/2012/12/20/emmanuel-god-is-with-us/>

<https://www.history.com/this-day-in-history/typhoon-bopha-pablo-philippines>

<https://newsinfo.inquirer.net/535843/ateneo-de-davao-develops-new-survival-kit-in-wake-of-supertyphoons#ixzz6e8L5VbYj>

<https://www.addu.edu.ph/blog/2015/11/12/addu-create-donates-solar-pv-battery-charging-facility-to-ips-in-brgy-malabog/>

<https://mindanao.politics.com.ph/ateneo-de-davao-gets-p68-6m-grant-from-dost-for-green-energy-rd/>

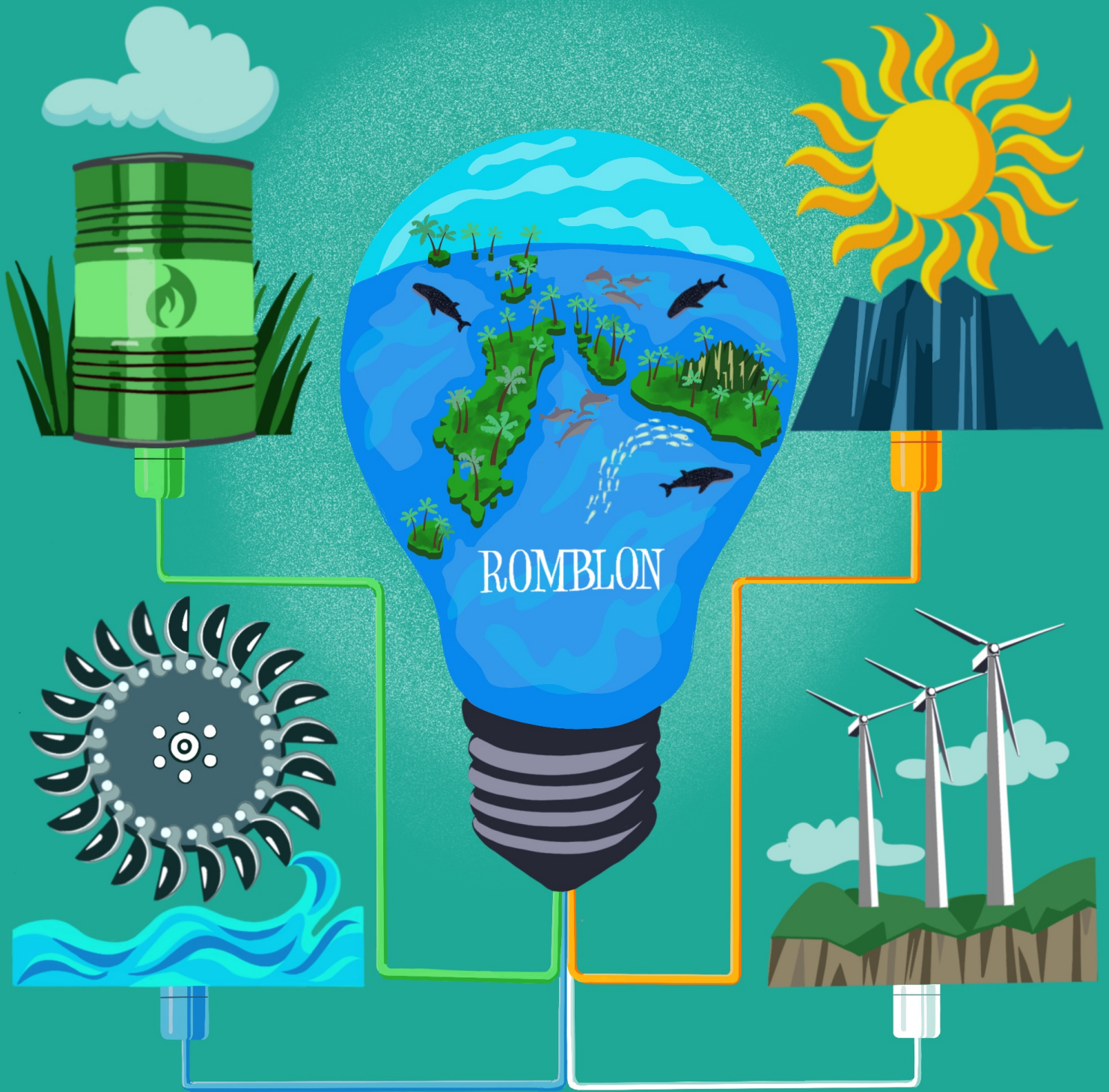
Posts from ADDU Create - Center for Renewable Energy and Appropriate Technologies. Taken from:
https://www.facebook.com/adduCREATE/?ref=page_internal

The making of a Romblon REpublic: ROMELCO's Energy REvolution

By **Wilson M. Fortaleza**

Wilson Fortaleza is a founding fellow of the Center for Power Issues & Initiatives (CPII), vice president-external of the Center for Empowerment Innovation and Training for Renewable Energy (CentRE). He also holds leadership positions at Partido Manggagawa (PM) and Nagkaisa, the country's biggest coalition of trade union and labor organizations. As a labor activist, he does research and writing, as well as delivers lectures on labor, human rights, and energy issues. He also writes a regular column in three local newspapers.





It all started with the 90-10 vision a few years back. Today, that vision to go green is powered stronger by the wind turbines and solar rooftops that effectively brought Romblon Electric Cooperatives' (ROMELCO) embedded renewable energy (RE) capacity to 39 percent, the highest so far among the country's 121 electric cooperatives.

The launch of its 900-kilowatt (kW) wind turbines in 2019 in the province's capital, Romblon, and this year's solarization of four barangay multipurpose halls to produce a combined capacity of 200kW, were the latest addition to ROMELCO's expanding RE revolution.

As a result, the National Electrification Administration (NEA) considers ROMELCO a “trendsetter” in the development of renewable energy in the Philippines.¹

Since ROMELCO declared its 90-10 RE transition in 2015 wherein 90 percent of its power will come from renewable energy and only 10 percent from conventional diesel, the electric cooperative has completed

installation and commissioning of 4 RE power plant projects, in addition to its first RE project completed in 2009. It has also introduced an electric vehicle project and continues to pursue other projects in the pipeline.

To this day, ROMELCO remains driven and motivated, ready to face challenges unique to a third-class and isolated province like Romblon.

Energizing the middle islands

Romblon is an archipelagic island province under the MIMAROPA (Mindoro, Marinduque, Romblon, and Palawan) region. It is composed of seven islands, three of which — Tablas, Romblon, and Sibuyan — figure prominently at the center of the Philippine map. It has a population of 292,781 people living in 219 barangays in 17 municipalities.

Rural electrification in the Philippines started way back in the 1960s, but it was not until the late 1980s when the missionary electrification program of the National Power Corporation (NPC) and NEA brought electricity to the Province of Romblon.

¹ Cinco, Maricar. “Romblon taps wind for cleaner, cheaper electricity.” [newsinfo.inquirer.net](https://newsinfo.inquirer.net/1070366/romblon-taps-wind-for-cleaner-cheaper-electricity). January 08, 2019. <https://newsinfo.inquirer.net/1070366/romblon-taps-wind-for-cleaner-cheaper-electricity>. Accessed October 7, 2020.

Two electric cooperatives were established to implement the program, the Tablas Island Electric Cooperative, Inc. (TIELCO) covering Tablas and San Jose islands, and ROMELCO for the islands of Romblon, Sibuyan, Corcuera, Concepcion, and Banton.

Electricity was produced from small diesel power plants or barges provided by the NPC's Small Power Utility Group (SPUG). The NPC plants were run on diesel fuel.

However, since fuel was not always available and prices were (and still are) volatile, electricity was costly and unreliable. It also didn't help that the NPC plants and barges incurred the usual mechanical failures that made electricity services less dependable.

Thus, not only was electricity limited to only a few hours a day, people also suffered long hours of blackouts regularly. As a result, residents were unable to pursue other economic activities aside from fishing and farming.

ROMELCO is a non-stock, non-profit electric cooperative (EC) registered with NEA in 1989, and categorized as AAA for four (4) years straight. It has a peak demand of 5,120 kW and serving 29,756 member-consumer owners in the seven municipalities comprising the electric

cooperative's coverage areas, namely Romblon, San Fernando, Cajidiocan, Magdiwang, Banton, Corcuera, and Concepcion.

Having provided 24/7 electricity services on the islands, ROMELCO has set its eyes on RE to ensure reliable and affordable energy supply. At present, ROMELCO has 39% RE in its energy mix, hoping to meet its goal of generating 90% of its energy needs from RE not later than 2025.



Making the impossible possible

Romblon's energy poverty due to its isolated location has compelled ROMELCO to aim high with its 90-10 RE vision.

Likewise, ROMELCO's initiatives in building and developing its own RE facilities go hand in hand with its goals of reducing electricity costs in the whole franchise area.

By lowering energy prices, it would be able to graduate from the Universal Charge for Missionary Electrification (UCME), realize energy democracy by democratizing ownership of these facilities, and remain a relevant and viable business in the generation and distribution of electricity for off-grid islands of Romblon.²

ROMELCO's General Manager, Engr. Rene Fajilagutan, is extremely confident that the RE facilities can generate power for decades from free energy resources. *“It's the solution, a move in the right direction to address the socially and politically sensitive issue of the planned removal of subsidy to off-grid electrification and taking care of our planet at the same time.”*



Indeed, on the islands of Romblon, ROMELCO, its members, and its officials took small steps but dreamed big.

RE milestones

The **1,350 kW Cantingas Mini-Hydro Power Plant** is ROMELCO's first plunge into power generation and renewable energy at the same time.

² By lowering energy prices, it would be able to graduate from the Universal Charge for Missionary Electrification (UCME), realize energy democracy by democratizing ownership of these facilities, and remain a relevant and viable business in the generation and distribution of electricity for off-grid islands of Romblon.



The run-of-the-river mini-hydro power plant was funded by the Development Bank of the Philippines (DBP), NEA, and the Rural Electrification Financing Corp. (REFC) through a commercial loan with a 15-year repayment period with a 3-year grace period that matures in 2022. Total project cost is Php172 million. After commercial operations began in February 2010, energy sales of the mini-hydro have 8,246,980 kWh as of 2018.³

³ Ibid.

⁴ “Philippines: Hydro Power Injects Diversity into Sibuyan Island’s Economy.” March 18, 2011. <https://www.worldbank.org/en/news/feature/2011/03/18/philippines-hydro-power-injects-diversity-sibuyan-islands-economy>. Accessed on October 5, 2020.

⁵ Bertheau, Paul et al. “Challenges for implementing renewable energy in a cooperative-driven-off-grid system in the Philippines,” Environmental Innovation and Societal Transitions, March 2019, p.4 https://www.researchgate.net/publication/331845722_Challenges_for_implementing_renewable_energy_in_a_cooperative-driven_off-grid_system_in_the_Philippines. Accessed on October 5, 2020.

Not long after, Sibuyan Island started enjoying 24-hour electricity, allowing its communities' economic activities to diversify. Small businesses such as hardware stores, food stalls, groceries, and even resorts that cater to tourists mushroomed.⁴ The current tariff of P5.2107/kWh is expected to go down to less than P2.00/kWh once the project loans are paid in 2022. Despite its risks and challenges, the Catingas project became a success.

The project's auspicious beginnings prompted ROMELCO to initiate another one.

This time, it was the **30 kW Cobrador Solar Hybrid Power**.

Electricity in Cobrador Island was limited to eight hours per day, provided by a diesel generator with a 15kW peak capacity.⁵ Livelihood in the province are mainly fishing, agriculture, and marble craft. In

2016, ROMELCO sourced funding for the solar hybrid power, a 60% grant from Korea Energy Agency, a 20% grant from the Asian Development Bank (ADB), and a 20% loan from NEA. Total project cost, which was funded by a ten-year loan, was at Php25.852 million. After the project's solar energy service contract was issued on 26 October 2017, 248 households of the 983 population of Cobrador Island benefited from the solar hybrid power plant.⁶

ROMELCO'S experience in installing the solar-diesel hybrid system in Cobrador Island was the subject of research work entitled "Challenges for implementing renewable energy in a cooperative-driven-off-grid system in the Philippines."⁷ Research findings provided comprehensive analysis of the risks and uncertainties ROMELCO faced when executing the project. Likewise, the research provided lessons in implementing 'cooperative-driven low carbon energy projects' in the Philippines, which will be discussed in the final section of this piece.

Meanwhile, other power projects in Romblon have also taken off.

This includes the **22 kW Biomass Gasifier Power Plant**, a project in partnership with the Department of Energy (DOE), which also provides a subsidy for the facility.



⁶ Fajilagutan, Rene. "Romelco Journey to Energy Transition, Reclaim Empowering Communities through Renewable Energy, Sinaglaya: A Crash Energy Course on Democracy and Clean Alternatives." September 11, 2020. renefajie@yahoo.com, romelcoinc1989@gmail.com.

⁷ Bertheau, Paul et al. "Challenges for implementing renewable energy in a cooperative-driven-off-grid system in the Philippines." Environmental Innovation and Societal Transitions. March 2019. https://www.researchgate.net/publication/331845722_Challenges_for_implementing_renewable_energy_in_a_cooperative-driven_off-grid_system_in_the_Philippines.

With a cost of Php3.356 million, the project, located in Sitio Bagong Silang Barangay Alad, Romblon, was commissioned on 24 September 2018. Fuel for the biomass power plant are bana grass, coconut fronds, and coconut shells. The project's fuel consumption is 0.80 kg per kWh at 80% load and provides power to 50 households.

Another project is the **900 kW Wind-Diesel Hybrid Power Plant** that was made possible by partnership involving a four-year lease-purchase agreement with Japan's Ministry of Environment and Komaihaltech, Inc. with the DBP acting as the guarantor for ROMELCO. The facility's estimated generation cost after subsidy from the Japanese government is Php5.13/kWh. After being approved on 23 August 2018, it was completed in December 2018, and commissioned in February 2019.

By themselves, the project's three wind turbines have become tourist attractions. Mounted atop the island peak of Barangays Bagacay, Lonos, and Agnay, the turbines are visible from the nooks and crannies of the equally enchanting Romblon Bay.

Meanwhile, instead of building solar farms that involved land rental or acquisition, ROMELCO chose to mount solar facilities on the rooftops of four barangay multipurpose halls. Each setup of

ROMELCO's fully-owned **200 kW Distributed Solar Rooftop Power Plant** commissioned in February 2020, has contributed 50kW power to top up supply to the island grid during daytime.

With funds sourced from the Rural Electrification Financing Corporation (REFC), the Php12-million project currently serves 8,320 beneficiary-consumers after it was launched last February. The solarized rooftops can also provide emergency power sources as multi-purpose halls are utilized as evacuation centers during disasters and calamities.

ROMELCO has also ventured beyond RE generation.

In 2019, the electric cooperative partnered with Honda in Japan for the **ROMELCO Electrification of Vehicle Project** involving the provision of 100 electric vehicles in the provincial capital. Beneficiaries who qualified have been allowed to lease these vehicles for Php2,000 a month.

Lessons learned

As of 2018, 39% (or 8,246,980 kWh) of ROMELCO's energy mix came from renewable energy sources. That means sixty-one percent (61%) of its load still



comes from fossil-fuel sources. It could have increased the share of RE in its energy mix had other projects proceeded without delay due to bureaucratic and regulatory gridlocks in the application of RE service contracts and tariffs. The COVID-19 pandemic has only compounded those delays.

“Our project implementation outpaces regulation. It's easier to build projects than secure service contracts and rate approval from regulators,” Engr. Fajilagutan said.

ROMELCO, obviously, did not reach the goal it envisioned to be completed this year. But what it has achieved, so far, are exemplary milestones in the electric cooperatives' RE power generation in the Philippines.

How did ROMELCO manage to develop its RE projects in an off-grid, archipelagic province that is a plane and a ferry ride away from Manila?

ROMELCO derived the success of its first RE venture in Sibuyan Island from its stable fiscal position as an EC.

As a result, it was able to secure a loan from the DBP as initial capitalization for the power generation project. That was a key factor in securing the second venture on Cobrador island. The electric cooperative's success in Sibuyan Island helped build its track record and creditworthiness.

And along the way, the EC managed to do several things for its benefit, but not necessarily at the same time.

ROMELCO was able to hire technical experts and consultants, continuously applied for commercial loans from banks and financial institutions, relentlessly networked with donor institutions, upgraded the skills of its personnel, and updated its knowledge about industry developments, according to Engr. Fajilagutan.⁸

What the research paper *Challenges for implementing renewable energy in a cooperative-driven-off-grid system in the Philippines* concluded is also worth noting. It considers “the motivation of the EC to realize the low carbon energy system as a cornerstone for the successful

⁸ Fajilagutan, Rene. “Romelco Journey to Energy Transition, Reclaim Empowering Communities through Renewable Energy, Sinaglaya: A Crash Energy Course on Democracy and Clean Alternatives.” September 11, 2020.



implementation of the RE project. This motivation stems from a broader vision to supply the entire franchise area of the EC with RE in the midterm.”

Moreover, the same research enumerates the following findings on how ROMELCO managed to overcome the risks and uncertainties in completing the **30 kW Cobrador Solar Hybrid Power** which also echoes the lessons Engr. Fajilagutan mentioned.

First, the EC built and nurtured engagement and collaboration with policy makers, industry experts, and community stakeholders. Therefore, it used conferences and meetings to share its experiences, highlight bureaucratic hindrances, and put forward its policy advocacy.

Second, the EC went ahead with implementation even when the bureaucratic procedures took a long time and permits were still pending. In effect, the EC shared the risk of higher costs with the community while their claim for subsidy was still pending in a government office. Although the customers were initially unwilling to pay higher tariffs than family members and friends in neighboring islands, they concluded that it is in their own interest to pay higher tariffs if this would accelerate the implementation of the clean energy system. This was the result of information campaign and dialogues with community stakeholders to gain their acceptance and support.

Third, the EC cooperated closely with international donor organizations and technology providers, which proved essential since the project was

eventually realized with grant funding. The EC harnessed the interest of technology providers to realize a proof of concept of its product for their own purpose to provide clean energy to their customers. Although this cannot be a generalized model for the entire country, it contributed to building trust in RE in the Philippines since many interested stakeholders are visiting the project.

Fourth, the EC looked for provisions in the law that would work in their favor and applied it when landowners resisted infrastructure projects due to their individual business interests.

Fifth, the EC addressed the lack of skilled technicians and laborers by training residents for operating the low carbon energy system. This was realized through investing into their staff, e.g. paying for their vocational training. This resulted in job opportunities for several villagers.

Finally, a clear development vision is necessary to ignite the motivation of an EC to advocate politically for its projects

and implement it despite bureaucratic odds, thereby addressing political risks and uncertainties. Cooperation with technology providers and donor organizations alleviated economic and technological risks and uncertainties. Stakeholder engagement and training of local staff builds trust and engages people, thereby addressing societal factors. While geographic factors cannot easily be addressed, the experience in Cobrador island instigated interest in developing containerized solutions for transportation requirements that would leverage the cost and labor intensive construction of power houses in the future.⁹

ROMELCO's 90-10 RE vision is a vision pursued with relentless hard work, determination, and creativity. The EC, its members and management team aren't about to rest on their laurels just yet. Besides planning more RE projects, the electric cooperative is envisioning a future where its members, in their exercise of energy democracy, become the ultimate owners of ROMELCO'S existing and future RE generating facilities.

⁹ Bertheau, Paul et al. "Challenges for implementing renewable energy in a cooperative-driven-off-grid system in the Philippines," *Environmental Innovation and Societal Transitions*, March 2019, pp.10-11. https://www.researchgate.net/publication/331845722_Challenges_for_implementing_renewable_energy_in_a_cooperative-driven_off-grid_system_in_the_Philippines. Accessed on October 5, 2020.

Solarizing the Diocese of Maasin - the world's first RE-powered diocese

By Ina Alleco R. Silverio

Ina Alleco R. Silverio is one of the managers of WeGen Distributed Energy's Social Transformation Department. Through its Social Transformation Team (STeam) arm, WeGen collaborates with national and local agencies, international organizations, financing institutions, think tanks, and civil society for advocacy and inclusive, commercially viable project development.





In December 2019, during the United Nations Climate Change Summit in Katowice, Poland, Vatican Secretary of State Cardinal Pietro Parolin reiterated Pope Francis' declaration that climate change is a moral issue and has an effect on human dignity.

“We know what we can do, and what we have to do becomes an ethical imperative,” he said. “In the face of such a complex issue as climate change where the individual or the national response in itself is not sufficient, we have no alternative but to make every effort to implement a responsible, unprecedented collective response, intended to ‘work together to build our common home.’”

This is the guiding principle that led to creation of WeGen Distributed Energy's subsidiary company, WeGen Laudato Si (WGLS).

Maasin Diocese receives plaudits from The Vatican

A Vatican report in midyear of 2020 “Journeying Towards Care for our Common Home: Five Years After Laudato Si,” documenting best practices in various countries, has cited the Maasin Diocese in Southern Leyte as the first Diocese in the world to go completely solar.

Released on June 18, 2020 to mark the fifth anniversary of “Laudato Si': On Care for Our Common Home”, the 265-page report focuses on efforts of different religious and sectarian organizations to address the climate emergency and protect the planet from its ravages.

In the said report, the Vatican recognized the Diocese of Maasin as “the first diocese in the world to equip all parishes with solar panels.” It also cited the renewable energy advocacy of the Philippines' Episcopal Commission on the Laity for its continuous promotion of the use of solar energy in church institutions and communities. The Commission which also works closely with WeGen was acknowledged by the Vatican for its mission to “promote information and communication campaigns to spread the teachings of Pope Francis and the Laudato Si.”

WeGen Laudato Si: Helping in the Church's Mission to Transition to Solar Energy

In 2018, in partnership with WeGen Laudato Si, the Diocese of Maasin has installed solar PV systems in all its 42 parishes.



Maasin, one of the oldest towns in Southern Leyte and now known as Maasin City by virtue of Republic Act 8796 on 10 August 2000,¹ is a 4th class coastal component city with 70 barangays and serves as the provincial capital. It is considered a commercial and religious center of the province of Southern Leyte and south-western part of the island of Leyte. It has a population of 85,560 based on 2015 census, and a land area of 21,171 hectares.²

WeGen's solar PV systems in the Diocese of Maasin were inaugurated on August 14, 2018, on the occasion of the 50th Anniversary of the Diocese. All the parish churches under the Diocese have been equipped with solar PV systems, and these include the historic Holy Cross and First Mass Chapel in Limasawa Island and the Cathedral of Our Lady of the Assumption of Maasin (*Catedral de Nuestra Señora de la Asunción de Maasin*), commonly known as the Maasin City Cathedral.

Maasin Bishop Precioso Cantillas, SDB, D.D. shared that because of the solar PV systems installed in cathedrals and school

buildings, the Maasin Diocese has saved over US\$2,000 in electricity bills per month.³

Aside from lower electricity costs, the WeGen-installed solar panels designed to last for at least 25 years are also expected to result in reduced carbon dioxide emissions by 1,875 metric tons. It will only take seven years for the Diocese to recover its investment that would benefit the 42 parishes, their (number) laypeople and the environment for two-and-a-half decades.

“Surprised but happy,” some reports quoted Bishop Cantillas as he expressed elation over the Vatican's recognition of the Diocese's stride.

“I am surprised to know that our humble effort to implement something to preserve our Mother Earth, The Vatican cites the Diocese of Maasin Solar Project powered by WeGen heeding the call of Pope Francis' Laudato Si' Encyclical letter, got a recognition and affirmation at a high level,” he said over Radio Veritas in June 2020.

¹ <https://southernleyte.gov.ph/local-government-units/maasin-city>

² <https://www.philatlas.com/visayas/r08/southern-leyte/maasin.html>

³ Robin Gomes, “Vatican praises Philippine diocese for the first to adopt solar energy,” Vatican News, 23 June 2020, <https://www.vaticannews.va/en/church/news/2020-06/philippines-maasin-diocese-solar-energy-laudato-si-vatican.html>

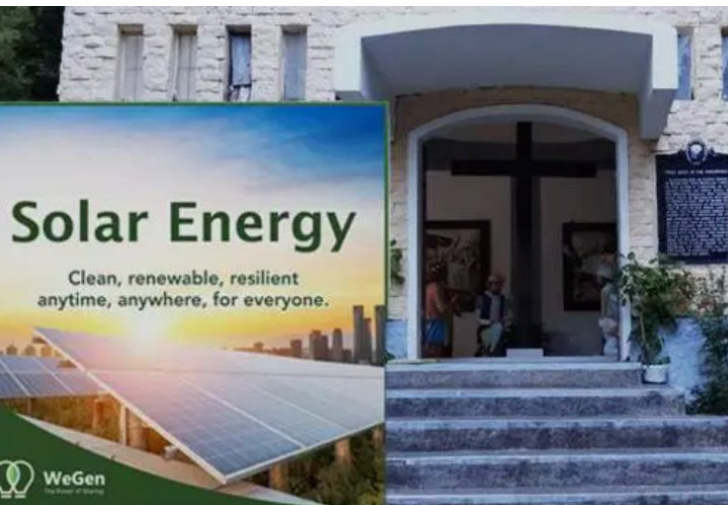
The Bishop also articulated that the recognition was an important development that will help them expand the campaign to encourage the Filipino people to make the transition to renewable energy sources such as solar energy. “This news (Vatican's recognition of the Maasin project) encourages us more to expand the use of renewable energy, solar power, which we have introduced in the Diocese,” he said.

Bishop Cantillas shared that the Diocese continues to put more effort in helping protect the environment while encouraging other dioceses to also use solar PV systems for the energy needs of their churches and other buildings.

“Hopefully, we will reach a level where we can contribute more significantly to the restoration and preservation of our environment. We also hope that more Dioceses will adopt these alternative power sources so that God's creation will be restored even by just a little degree. The Church is continuing Christ's mission of restoring all things back to how the Father has willed it.”

A Project Engineer's account of Maasin solar project

As a social good company, WeGen is committed to developing and providing clean solar power to religious, commercial, and residential sectors, as well as to off-grid communities and islands. Through its subsidiary WGLS, it has successfully established strategic relationships with most of the 85 Catholic dioceses in the Philippines, including the Diocese of Maasin. The WGLS, “formed specifically to work closely with the Catholic Church and other religious communities in the country,” encourages various sectors of society to shift from using conventional sources of energy to clean, renewable energy from the sun. The partnerships have led to the installation of over 100 MW clean and sustainable solar power through 2023, on the rooftops of churches, schools, seminaries, and other church-owned buildings.



In its partnership with the Diocese of Maasin, WeGen was grateful for the collective endeavor that led to the success of the project.

Project engineer Arthur Robles, who joined WeGen in 2016 as a member of the company's Engineering and Implementation Team in the Pasig City headquarters, has played a key role in the project implementation. He considers being part of the Vatican-recognized Maasin project a high point in his career. The Vatican being the highest governing body of the Catholic Church.

“The Maasin solar project is actually the first project I handled since I joined WeGen. It was very ambitious, and we were on a rigid schedule because we had to meet the goal of operationalizing all the solar PV systems on 43 rooftops of the churches and buildings under the Maasin Diocese before the diocese's 100th anniversary,” recounts Robles.

He shared that WeGen's Engineers and Technical design people prepared for the project for an entire year, but all the installations had to be in place within four months. Robles and his team, together with



Service Engr. Romnick Aredidon, electricians, and PV technicians, worked non-stop for nearly four months. They were moving like an army of ants from one parish to another all over Maasin, simultaneously building one installation after another.

“As soon as we finished installing in one church, we turned on the system immediately then moved on to the next. We worked with contractors and other site-based service engineers to build faster and to address any problems with the system as soon as they were spotted. It was a very good experience for me because of the teamwork and coordination I saw among all members of the team,” he added. “We beat the deadline, and the 'solarization' of Maasin Diocese was completed in time for the anniversary.”

When asked how he feels about the Vatican's recognition of the project, “pretty good” was the reply of Robles. He explained that it is an important project — “a massive show of support for our goals to popularize solar energy and promote sustainable energy sources. WeGen works with the Church on these goals because the Church also champions sustainability and renewable energy. For the Maasin Project to be recognized by the Vatican sends across a great message, that all churches should

follow suit and go solar to practice the teachings of Laudato Si' to help ease the burdens of the planet when it comes to carbon emissions.”

Broader deployment of renewable energy – an ethical imperative

The WGLS is guided by the messages and appeals in Pope Francis' June 2015 encyclical, Laudato Si', calling for ecological conversion and environmental protection. In all its renewable energy-solar power projects, WGLS observes high environmental standards and practice in adherence to the values and principles of Laudato Si'.

In its partnerships with various institutions, WeGen assists Catholic dioceses, parishes, and other Catholic institutions to transition to the use of renewable energy and help put the Catholic Church in the Philippines and its varied institutions at the forefront of the urgent and radical shift from fossil fuels to renewable energy. This initiative as evidenced by Maasin Project among others, has already spurred a modest, yet irreversible trend towards “easing the impact of climate change through responsible mitigation and adaptation measures.”

Similarly, WeGen continues to engage other faith-based communities, beginning with the United Methodist Church and the Baptist Church in the Philippines.

Through the memoranda of agreement (MOA) with its partner Churches, WGLS provides the basic understanding and agreements on a common response to the Papal Encyclical Laudato Si. The

memoranda also symbolize a meaningful commemoration of the 500th Anniversary of the coming of Christianity in the Philippines in 2021.

The signing of MOA is considered a significant event as the “ethical imperative” called forth by Laudato Si’ is communicated to all dioceses, the clergy, the lay-faithful, and to the rest of the community.





Reigniting hopes with basic solar power

By **Hilda Carreon**

Hilda Carreon has been active in the startup initiatives for more than three years. Now, with New Energy Nexus-Philippines as program associate, she has focused on energy-related startups. Relatively new in the sector, she is still learning the crossroads of all energy categories but has expertise in different tools on problem analysis and ideation frameworks as well as in the different methods of validation.



Social impact through RE innovation

In August 2019, during the House Committee on Appropriations hearing, the National Electrification Administration bared that 2.3 million households still do not have access to electricity.¹ The Department of Energy-Energy Policy and Planning Bureau Director, Jesus T. Tamang, also shared during the Luzon Energy Efficiency and Conservation Forum on 1-2 October 2020 that as of 2019, around 93% of the country has been energized. The Department of Energy and National Electrification Administration plan to attain 100% electrification by 2022.

The data reveal that millions of families continue to experience energy poverty. This can be addressed by the government, NGOs and other entities working together. There are more than 160,000 social enterprises and 60,000 registered non-governmental organizations (NGOs) in the Philippines that help alleviate poverty, improve the livelihood of communities, and empower the marginalized.

If these groups incorporate the use of different solar products and renewable

energy technologies in their programs, it could help bring electricity access to far-flung and marginalized areas. The various stakeholders can also work together by providing solar lamps that can be one solution to the lighting needs of these energy-deprived communities.

Lighting is a basic need, rather than a luxury, and a household that has access to a stable electricity connection increases its livelihood opportunities.

To this end, Light of Hope, a partner of New Energy Nexus Philippines (NEXPH), has dedicated a team that teaches students to assemble a solar lamp that will be given to target households.

In August 2019, NEXPH became a Philippine chapter of New Energy Nexus, an international non-profit organization that supports clean energy entrepreneurs through funds, accelerators, and networks. Through its incubation program that supports aspiring clean energy entrepreneurs, NEXPH was able to support 11 energy companies including Solar Hope, Light of Hope, and Energy Exchange which focus on providing energy access to different communities in Luzon and Visayas.

¹<https://www.cnn.ph/news/2019/8/27/filipino-households-electricity-national-electrification-administration.html>

Solar Hope

Solar Hope is a non-profit organization that is pivoting to be a social enterprise and is aiming to provide solar and sustainable solutions to marginalized communities. It was founded on December 1, 2017, as a result of the founder's struggle with depression, John Mark Napao.

While grappling with his condition, Mark joined an outreach activity for the Badjao settlement in Malitam, Batangas. This experience became an avenue for Mark to realize his sense of purpose and, bit by bit, regained his passion for reaching out to other people which he also believed to be his calling for the rest of his life.

At present, Solar Hope was able to reach out to three (3) communities offering customized solutions for each: a Badjao community in Malitam, Batangas, a Dumagat community in Tanay, Rizal, and a Mangyan community in Paluan, Occidental Mindoro.

The solar lamps that Solar Hope provide are not do-it-yourself; they are a Mobyia TS 120S model, a portable Solar LED lighting



system with multiple mounting options to enable convenient way of lighting and mobile phone charging.²

The solar home systems, on the other hand, are from Sun King Home 60.³

But Solar Hope doesn't just provide solar lamps and then leave the communities to fend for themselves. The Solar Hope team teaches the community how to install these systems and how to maintain it.

²https://download.schneider-electric.com/files?p_Reference=LF_TS120S_Africa_EN&p_EnDocType=Catalog&p_File_Id=315501448&p_File_Name=LF_TS%20120S_Africa_EN.pdf

³<https://www.greenlightplanet.com/solar-lights-shop/home-60/#techspecs>



Energy Exchange activities

The group believes in building a relationship with each community, an objective that also helps them design an approach to provide better support and improve their program. Feeding programs, livelihood training, and school activities are also organized while also raising funds for solar lamps that will be given to households without electricity access.

This arrangement cements trust between parties, ensures a deeper understanding of the community, and guides Solar Hope in their next steps moving forward.

⁴ <https://lightofhopeph.org/>

Light of Hope

Meanwhile, a similar organization called Light of Hope was established in Cebu by Jovie Gil Montajes, who grew up studying in the dark because his community had no electricity access.

To help similarly-situated communities, he established Light of Hope to provide a clean, safe, cheap, and sustainable source of light for the communities in areas without electricity and to reduce plastic wastes by recycling PET bottles and using them as part of their lamps that could last up to two to five years.

These solar lamps from pet bottles, therefore, fight against plastic pollution, reduces carbon footprint, and protects communities from health and fire hazards caused by conventional incandescent lamps.⁴

As of March 2020, the Light of Hope has assembled 2,033 solar lamps for 1,016 families, recycled 2,033 PET bottles, and reduced an estimated 80,154 kg of carbon dioxide emissions.

Prior to the pandemic, Light of Hope partnered with different schools and conducted awareness programs that teach students how to assemble their DIY solar kits, each costing only Php 300.00. These campaigns are supported by individual funders and the corporate social responsibility (CSR) departments of big companies. The selection of beneficiaries is based either on the request of the funder or the data of unenergized areas in Cebu City as provided by the local government unit.

The solar lamps, which are less than 100 watt-hours, can last up to seven hours a day. It is given for free.

Light of Hope also developed a power box series (cloud grids) with the use of internet of things (IoT) devices that could help provide additional livelihood to their beneficiaries. The 184 watt-hour cloud grids have two (2) versions: Cloudgrid that has four USB outputs for mobile phones and lighting, and the Cloudgrid Cafe which has eight USB outputs for mobile phones, lighting, and an outdoor LTE modem that can be used as a hotspot. The beneficiaries of their newest product are also therecipients of the solar lamps and are using cloudgrid to have additional income (for charging phones and prepaid wifi services).



CloudGrid 1.0 Features:⁵

- 1) solar powered (free and clean energy)
- 2) can power up usb devices (Lights and charge mobile devices)
- 3) built-in IoT technology (monitor energy consumption, location data and other IoT sensors can be integrated)
- 4) pushing forward the solutions to the climate crisis
- 5) Sustainable

CloudGrid is also an income generating project, as it can be used to charge mobile devices for a small amount of Php 5.00 per charge.

⁵ <https://www.facebook.com/lightofhopeph/>

Energy Exchange

Energy Exchange is an enablement platform that connects, centralizes, and organizes collaborations that are centered on clean and sustainable energy projects. It was built to provide power to communities and micro, small, and medium enterprises.

Its founder, Angelo “Cholo” Aquino, said that it started when his co-founder Joseph Villamor found a solar generator and tested it with a colleague residing in Sitio Payong, an off-the-grid community located in Quezon City.

Most households in the community use diesel-powered generators that are expensive, noisy, and unsustainable. After a successful experiment with Enchong, the group's first beneficiary, Energy Exchange formalized its advocacy and used a solar-powered generator, instead of one fueled by diesel.

After initially soliciting sponsorship from their own network, Energy Exchange raised PhP50,000 from 16 supporters since June 2020. Proceeds have been used to help more families.

Energy Exchange officially launched a crowdfunding campaign called Project Solar for Sitio Payong which targets to raise \$600 to help an additional 20 families receive solar generators and solar panel systems.



Providing power to empower

The promise of a 100% electrification remains a dream for the Philippines. And even then, access to electricity is only the first step to empowering Filipino communities.

It is quite another matter to make sure that all initiatives are well documented and disseminated to a larger audience.

New Energy Nexus Philippines vows to be at the forefront in making sure that even the smallest communities in the country will become aware of different renewable

energy projects, technologies, and opportunities that can benefit them.

The organization is also crafting other programs to address different types of audiences and is working together with all other stakeholders to further grow the community of energy innovators, entrepreneurs, and advocates from students to professionals in different academic and professional fields.

With this approach, the Philippines can hopefully become the next green country in the world.



CentRE member organizations involved in featured RE projects



The Center for Renewable Energy and Appropriate Technologies (CREATE) is an engineering and technological research center of Ateneo de Davao University that initiates and pursues researches on sustainable energy systems, energy and water conservation and management, techno-support instrumentation, waste-to-high value products and sustainable infrastructure.



The Center for Renewable Energy and Sustainable Technology (CREST) is a think-act non-government organization that advocates sustainable energy and climate action. It engages in energy policy advocacy, project development, and multi-sectoral engagements. (email: crestphilippines@gmail.com)



The Center for Power Issues and Initiatives (CPII) is an initiative by a group of men and women committed to pursuing a power shift agenda in the Philippine power industry. It pushes for a reliable, affordable, and environmentally sustainable energy and a system of generating and distributing energy that empowers consumers and allows the poor to have electricity access. The CPII conducts research and policy studies on renewable energy and energy democracy and establishes stronger relations with trade unions and associations in the power industry, electric cooperatives, and the social housing sector.



The Romblon Electric Cooperative, Inc. (ROMELCO) is a non-stock, non-profit electric cooperative registered with the National Electrification Administration on 14 June 1989. It was granted by NEA a 50-year franchise to operate an electric light and power service in the islands of Romblon and Sibuyan on 11 July 1991 and 15 November 1994 respectively.



WeGen Distributed Energy is a next generation energy business that uses rapidly advancing renewable energy, battery storage, and software technologies. It seeks to address the issue of energy poverty and the problems caused by the use of fossil fuels with solutions comprised of sustainable, decentralized, and commercially viable solar photovoltaic (PV) installations, storage, and energy aggregation and management. WeGen's core business is aligned with Laudato Si', the Papal Encyclical calling for the rapid acceleration to renewable energy and other global actions to combat irresponsible development and environmental degradation.

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The Friedrich-Ebert-Stiftung (FES) is a private, not-for-profit, public interest cultural-educational foundation in Germany committed to the ideals and basic values of social democracy. Headquartered in Berlin, FES has been active in the Philippines since 1964. In its cooperation with civil society organizations, labor groups, the academe, and the government, it seeks to contribute in consolidating democratic institutions and in strengthening an inclusive political system and a people-centered economic development.



The Center for Empowerment, Innovation and Training on Renewable Energy (CentRE) is a not-for-profit association of RE advocates, developers, researchers, experts and social impact investors pursuing full deployment of RE in the country to address energy poverty, high electricity rates, and climate change in a just, sustainable and democratic manner.

With diverse expertise of its members – CSOs, private industry players, electric cooperatives, academic centers and individuals engaging on energy, climate, environment and good governance – the CentRE is envisaged as a hub for knowledge, social innovation, policy studies, advocacy and community empowerment towards achieving 100 percent renewable energy.

Its goals: RE-CLAIM – realize **RE** through **C**apacity building, **L**inkages, **A**dvocacy, **I**nnovation and **M**obilization.

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