

The future of renewable energy
in the Philippines

alternergy





Alternergy is a clean energy pioneer, bringing to life precedent-setting wind, solar, and run-of-river hydro power projects that pave the way for future renewables growth.

The Challenge

◀◀ The sun rises
over the 12.5MWp
Kirahon solar farm

Sitting on the fringes of the Asia-Pacific monsoonal belt, strong winds blow across the Philippines' more than 7,000 islands, and rivers gush through its dense primary forests. Abundant, year-round sunshine feeds the lush landscape that serves as a home for some of the richest biodiversity on Earth. As one of the countries most vulnerable to climate change, the Philippines is a place of fragile beauty.

Despite tremendous potential for renewable power production, only one-quarter of the country's power comes from renewable sources, and more than half is derived from imported fossil fuels. Power supply is exposed to the ups and downs of global markets, and electricity prices are the least subsidized in Asia.

The Government of the Philippines has set ambitious targets for renewable energy growth, but more groundbreaking projects are needed to establish the standards that will define the country's energy future—and its role in protecting the environment.

Since 2008, Alternergy has served as a clean energy pioneer, bringing to life precedent-setting wind, solar, and run-of-river hydro power projects that pave the way for future renewables growth. In the process, we have expanded the opportunities available to our diverse set of stakeholders. Innovative financing, local community engagement, and employee fulfillment define the way we do business.

Turn the page to learn more about the approach we're taking to make our country a leader in clean energy.

**Welcome to the future of renewable power in the Philippines.
Welcome to Alternergy.**

Milestones

Alternergy is a Philippine leader in renewable energy. With a proven track record of developing, building, and operating ground-breaking renewable power projects in the country, we strive to create a more sustainable future for the next generation.



June 2005

The 25MW Bangui Bay wind farm – the first wind farm in Southeast Asia – starts commercial operation. Four of Bangui Bay's project partners will later come together to form Alternergy

2005

June 2008

8MW Phase II of Bangui Bay comes into commercial operation

August 2008

Alternergy established

December 2008

Alternergy awarded three wind Pre-Commercial Contracts by the Department of Energy to explore wind resources in Rizal, Laguna and Mindoro

August 2009

Partnership with Eurus Energy of Japan and Korea East West Power to co-develop wind portfolio



October 2009

Alternergy awarded three additional Wind Energy Service Contracts, making Alternergy the most active wind developer in the Philippines

March 2011

Alternergy partners divest their 50% stake in Bangui Bay wind farm

October 2011

After Fukushima earthquake, Eurus Energy bought out by Alternergy

SOLAR PACIFIC

January 2013

Solar Pacific set up to bring solar power to off-grid islands

January 2013

Alternergy expands into mini hydro development

February 2013

Alternergy Mini Hydro signs joint development agreement for Dupinga mini hydro project

April 2007

Former Energy Minister Vince Pérez invests in Bangui Bay wind farm

December 2008

Renewable Energy Act comes into law, aimed at accelerating the development of renewable energy by increasing renewable energy-based installed capacity from 5,438MW in 2010 to about 15,304MW by 2030



October 2010

Asian Development Bank and the Government of Japan fund feasibility grants for Alternergy wind projects



December 2010

1.8MW SBMHC mini hydro plant starts commercial operation

September 2013

Alternergy Mini Hydro acquires development rights for 7 mini hydro projects from Enerhighlands

November 2013

Solar Pacific signs first bilateral solar contract with CEPALCO



May 2014
Partnership with Equis Funds for Pililla wind project to replace Korea East West Power

July 2014
Pililla wind project receives first non-recourse local bank project financing for wind

December 2014
Solar Pacific forms joint venture with Mindanao Energy Systems

January 2015
AES founder Roger Sant's family foundation partners with Solar Pacific

February 2015
12.5MWp Kirahon solar farm receives first non-recourse local bank project financing for solar

May 2015
ERC approves the country's first-ever bilateral solar PPA for Kirahon



June 2015
54MW Pililla wind farm comes into commercial operation on schedule and within budget

October 2015
12.5MWp Kirahon solar farm comes into commercial operation on schedule and within budget



April 2016
Partnership with Markham Resources for Dupinga hydro project

April 2016
Singapore-based InfraCo Asia commits to co-developing Ifugao run-of-river hydro portfolio

November 2016
Green Energy Supply Solutions (GESSI) created to give large power customers access to clean energy

December 2017
Solar Pacific receives first non-recourse local bank financing for CitySun solar rooftop portfolio



March 2018
Over 130,000 local tourists visit Pililla wind farm on Easter weekend

June 2018
Partnership with Vena Energy for Sembrano wind project

July 2018
Phase I of CitySun, first multi-rooftop solar portfolio in the Philippines, comes into commercial operation

August 2018
Alternergy celebrates 10 years of pioneering clean power for the next generation

2018

Quadruple Bottom Line Philosophy

Alternergy's balance sheet includes more than finances. Our Quadruple Bottom Line includes four measures that benchmark our success.



Profitability

Alternergy determines profitability based on annual cash flow, which comes from the sale of generated power to offtakers.



Carbon Reduction

Alternergy exists to play a pioneering role in making the Philippines a leader in clean energy. To track progress toward this goal, we measure the annual tons of carbon dioxide emissions displaced and avoided by the clean power generated from our projects. Alternergy also support NGOs that educate the public on the impact of climate change.



Host Community Benefits

Alternergy strives to be a partner to the host communities of our projects. Our community benefit programs focus on activities that make a positive impact on the environment, livelihoods, health, and education of local people. In addition, Alternergy sets aside a fixed amount per kWh to support the places we operate in.



Employee Fulfillment

Alternergy's family-like corporate culture nurtures and supports its team members with health and medical benefits, training, and plenty of moments for recognition and celebration. Alternergy prioritizes the employment, training, and development of local talent.

▶ Mike Lichtenfeld, CEO of Solar Pacific, Alternergy's solar company, conducts an environmental education class at a school in Cagayan de Oro City

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Our People

Alternergy's senior partners, led by former Philippine Energy Minister Vince Pérez, collectively bring a depth of experience and expertise across all stages of the development process.

We are pioneers in wind, solar, and run-of-river hydro power development in the Philippines, and we have extensive experience in energy policy, land tenure acquisition, negotiating local project debt finance, and permitting and regulatory compliance.



Vince Pérez

Vince is Co-Founder and Chairman of Alternergy. He drives the company's vision to serve as a pioneer in making the Philippines a leader in clean energy. Vince was Philippine Energy Minister from 2001-2005, during which time he crafted a renewable energy policy framework that served as the springboard for clean power growth in the country.

Vince built his career in finance, becoming a general partner for Lazard Frères and founding Next Century Partners, a private equity fund. Vince is on the board of Philippine and worldwide organisations, and has served as chairman for WWF-Philippines and as a trustee of WWF-International, WWF-China and WWF-US. He was a World Fellow at Yale University.



Knud Hedeager

Knud Hedeager is Alternergy's Business Development Advisor and one of the founding members of the company. An engineer by training, Knud oversees Alternergy's operations and technical approaches. Knud believes in developing the structures and processes that will not only help Alternergy grow its renewable power offering, but will also open doors for other clean power players to contribute new development for the Philippines.

Prior to Alternergy, Knud served as SVP at NEG Micon, one of the world's leading wind turbine manufacturers. He also founded the Moorland Group, a firm which primarily invests in Asia-based renewable power projects.



Gerry Magbanua

Gerry is Alternergy's President and one of the founding members of the company. He also serves as president for Alternergy Sembrano, and Green Energy Supply Solutions, Alternergy's Retail Electricity Supplier subsidiary. Prior to becoming President, Gerry was Chief Financial Officer at Alternergy.

A former coal-fired power plant finance executive, one of Gerry's aims is to demonstrate that renewable energy development can be financed as easily and effectively as fossil fuel projects. After spending time as an auditor for the power industry with EY affiliate company SGV, Gerry was with InterGen, a greenfield power developer, responsible for financial modeling and assets and contracts management.



Toni de Guzman

Toni is Alternergy's Vice President and Legal Affairs & Compliance Director. In overseeing compliance, regulatory matters, and contract negotiation, she takes a pipeline approach to her work, considering how decisions made today will affect both the project at hand and the future of renewable energy in the Philippines. A relationship builder with a desire to establish new precedents that will open the door for further clean power development, Toni is known for building fast rapport with local citizens and corporate leaders alike.

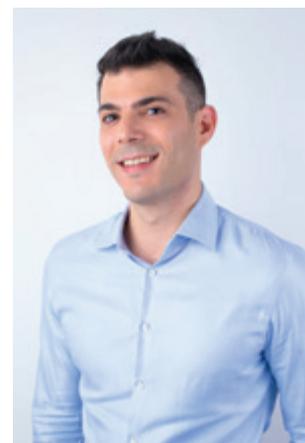
Toni's career started in 2002 with the corporate law practice group of Picazo Law. She went on to join Emerson Process Management in Singapore as Contracts Manager for the Asia Pacific Region, before joining Alternergy in 2010.



Eduardo Martinez-Miranda

Eduardo Martinez-Miranda is the President of Alternergy Mini Hydro Holdings Corporation, responsible for bringing to life the company's hydro portfolio. Eduardo focuses his work at Alternergy on creating hydro power assets that are socially, environmentally, and economically sound, benefitting both local citizens and lenders for the long term.

Eduardo is an experienced finance executive with a global career that spans almost every form of banking. His finance posts include serving as Director and Head of Corporate Finance for Merrill Lynch Securities Philippines, Managing Director and Head of Philippine Investment Banking operations at Macquarie Securities Philippines, and Senior Investment Officer and Hub Leader for IFC in the Philippines.

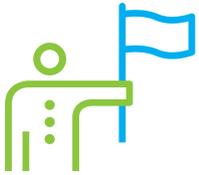


Michael Lichtenfeld

Mike is CEO and Co-Founder of Solar Pacific, Alternergy's solar partner company. Mike has been at the helm of developing the 12.5MWp Kirahon solar power project – the first large-scale solar photovoltaic (PV) project in the Philippines to be built under a bilateral power supply with a local utility, and the first bilateral solar agreement to be approved by the country's Energy Regulatory Commission.

Throughout his career, Mike has closed more than \$250 million in solar project financings. Prior to Alternergy, Mike served as Director of Utility Solar Development at SunEdison. He started out in the financial industries, in roles including working in investment banking at UBS, and conservation finance at The Nature Conservancy – Indonesia.

The Three P's of Alternergy



Pioneering

Alternergy is a company of 'firsts', driven to establish new precedents that drive the development of clean energy in the Philippines. We seek out opportunities to tread new paths that lead to positive long-term change for the industry.

Alternergy's history includes an extensive list of 'firsts'. Select examples include:

- Bangui Bay, a 33MW commercial wind farm in North Luzon – the first in Southeast Asia. As part of NorthWind, several of Alternergy's founding partners were involved in the development of Bangui Bay. After the project's completion, these partners – Vince Pérez, Knud Hedeager, and Gerry Magbanua – came together to create Alternergy, applying what they learned at Bangui Bay to break new ground on more renewable power projects.
- Awarded some of the first contracts from the Department of Energy for wind power. Alternergy received its first DOE service contract in 2008, allowing us to start conducting wind resource assessment studies in six potential sites. At the time, wind power was considered a new technology in the country, and the path to obtaining a permit wasn't as clear-cut as it is today. Through Alternergy's early engagement in educating local governments and government agencies, we created precedents for an efficient permitting process.
- First non-recourse project financing for a wind and solar project with local banks. For the Pililla wind farm and Kirahon solar farm, Alternergy worked exclusively with local banks to achieve the financing it needed for the projects. We dedicate extensive time and resources to educating and working alongside local banking institutions to design financing solutions that work for all stakeholders.



Proven

Across Alternergy's portfolio of projects, we demonstrate proven capability to deliver in a well-planned and cost-effective way. From securing power supply agreements with local utilities and private commercial customers, to working effectively with permitting agencies, we have shown creativity and resilience on the way to achieving our goals.

Alternergy takes pride in its ability to meet even the most ambitious of construction deadlines – prudently setting aside contingencies in plant construction, handling importation and transport logistics of equipment, and reliably managing sites once they are in operation – all while adhering to health, safety and environment protection best practices.



Partnerships

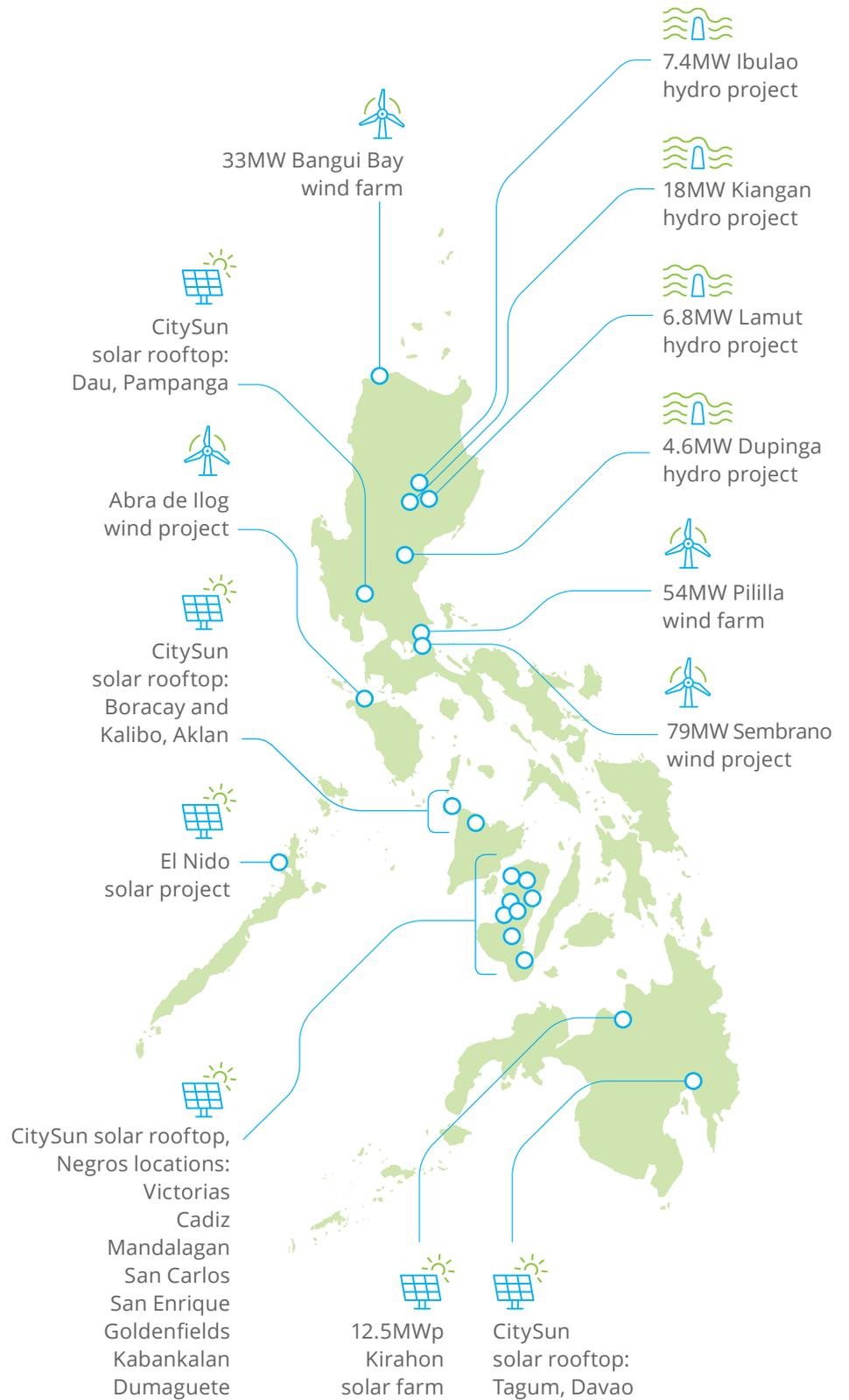
We see our work through the lens of partnerships: We find the people and organizations who will complement our efforts and support our vision to make the Philippines a leader in clean energy. Communities, government agencies, lenders, co-investors, corporates, and local utilities come together to build projects that will impact the country's energy future.

Alternergy is a company of 'firsts', driven to establish new precedents that drive the development of clean energy in the Philippines.

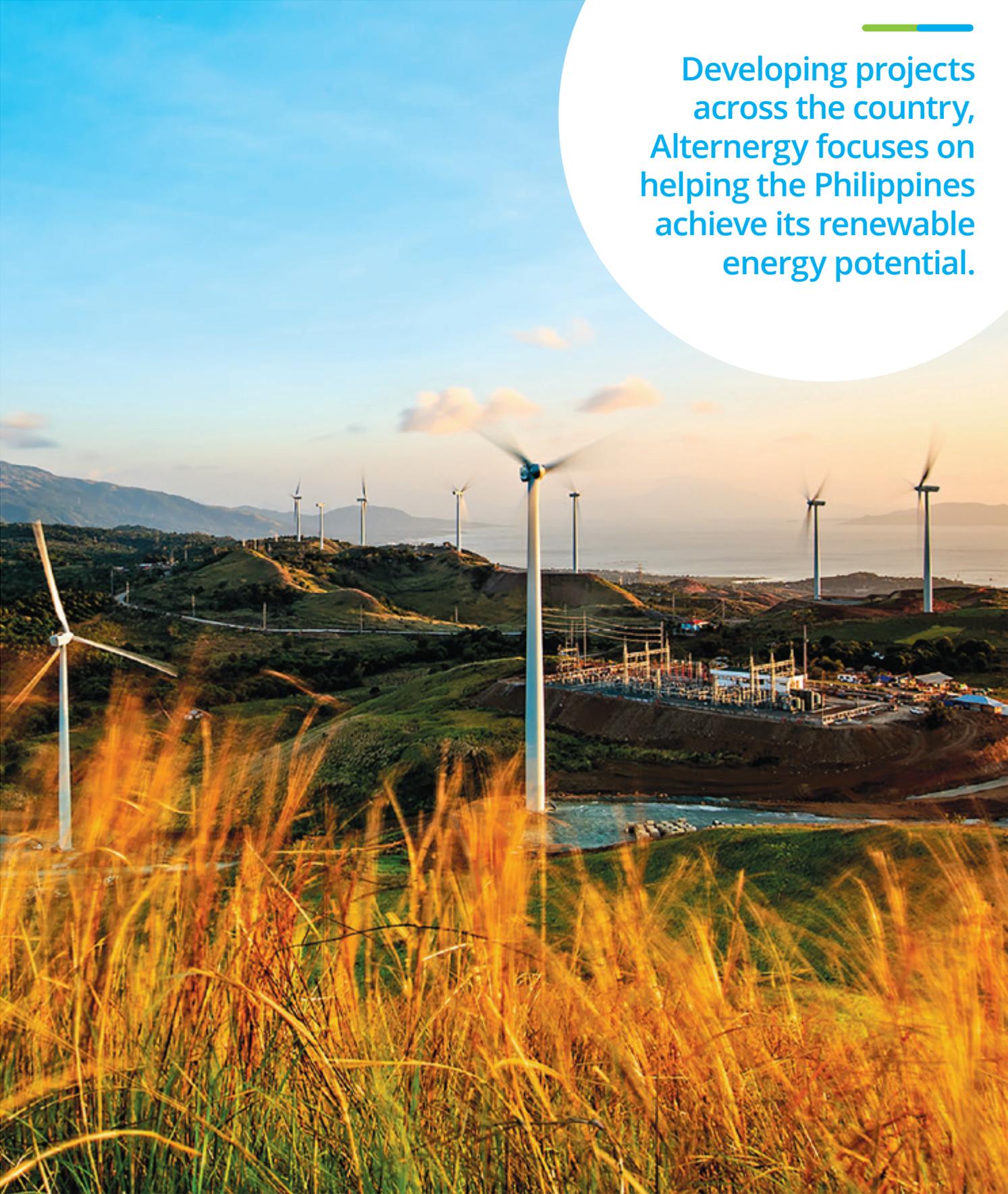
Where We Work

The Philippines is a place of abundant natural resources and unique biodiversity. It's also one of the countries most susceptible to climate change.

Alternergy focuses on helping the Philippines achieve its renewable energy potential through the development of wind, solar, and run-of-river hydro power projects across the country.



►► 40km southeast of Manila, the 54MW Pililla wind farm has become a tourist attraction that hosts up to 130,000 visitors during Easter Week



Developing projects
across the country,
Alternergy focuses on
helping the Philippines
achieve its renewable
energy potential.

How We Work

Alternergy's approach is grounded in the following principles:



First and foremost, we are developers. At times, we acquire projects through partnerships with other developers in a project's early stages with the goal of quickly achieving economies of scale.



We value our project lenders as long-term partners. Every project we undertake is funded with non-recourse project finance, using local currency whenever available to reduce foreign exchange risk.



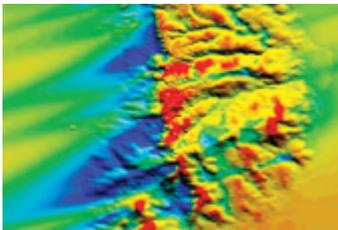
Alternergy is known for getting projects done on time and within budget. Our intensive project management and cost control methods mitigate possible construction delays and cost overruns.



Finally, we proactively engage in renewable policy discussions, participating in local consultations with relevant government agencies and working groups of the Department of Energy, the Energy Regulatory Commission, and National Renewable Energy Board.

Development Timeline

1 Pre-development



- Renewable Resource Assessment
- Micrositing
- Land Survey
- Environmental Study
- Community Consultation
- Geotechnical Study
- Grid Study
- Permits
- Contractor Selection
- Project Financing

From the pre-development stage, Alternergy conducts a comprehensive feasibility study to determine a project’s commercial viability. Our multidisciplinary team – composed of engineers, lawyers, project managers, community relations officers, regulatory compliance professionals, and financial analysts – come together to determine whether the project moves on to the next phase.



Financial Close



2 Construction



- Detailed Design
- Civil Works
- Equipment Supply
- Transmission Line
- Substation

Alternergy obtains a Declaration of Commerciality, which allows us to commercialize a viable project site over 25 years. Now, we are poised to take the project into the construction phase, where we will work closely with our carefully selected third-party contractors and technical consultants.



Commercial Operations



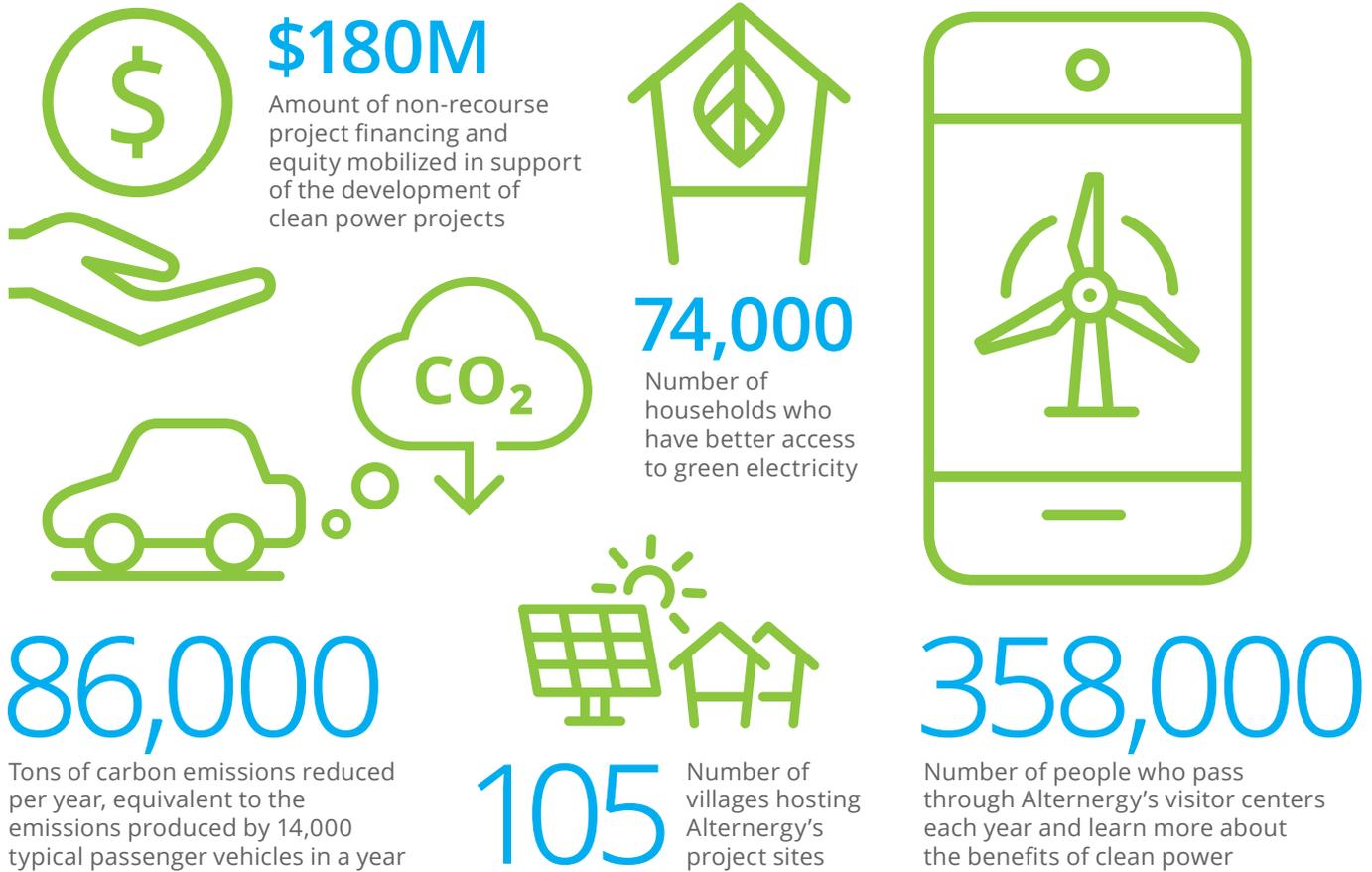
3 Operation



- High Plant Availability
- Minimize Unplanned Shutdown
- Optimize Generation
- Community Benefit Programs Focused on Livelihoods, Education, Health, and Environment

Once the project is successfully constructed, Alternergy provides operational and maintenance management to ensure high plant availability, minimize unplanned shutdown and maintain optimal electricity generation. We continue to provide benefits to host communities through our community benefit program, which is focused on livelihoods, health, education, and the environment.

Environmental and Social Impact



Emissions Reduced

Alternergy's ultimate measure of success is our impact on the next generation. The power created from our wind and solar farms in operation displaces or avoids 86,000 tons of carbon emissions that would have otherwise been created through fossil fuel generation.

Protection of Natural Habitat

Alternergy's project sites pay tribute to the natural beauty that surrounds them. By conducting best-practice wildlife and ecological assessments at the start of each project, we take every possible step to ensure what we develop is in harmony with the environment.

▶▶ The Milky Way Galaxy serves as the backdrop for the 54MW Piihilla wind farm



Alternergy
ensures its projects
are in harmony
with the natural
environment.

Pioneering Project Finance



The project loan facility for the Pililla wind farm was given a Sustainable Energy Finance Award by the IFC (International Finance Corporation) on August 31, 2016, and was featured as a Master's Degree case study on renewable project finance at Yale University.

Alternergy's Approach to Project Finance

Alternergy seeks to open the floodgates of the domestic banking market to renewables. Our projects are funded with non-recourse project finance, using local currency whenever possible to reduce foreign exchange risk.

In working with banks, we strive to instill confidence in our management experience. We negotiate a balance of risk sharing between lender and borrower on market-based financing terms and conditions.

Even today, banks are still more comfortable lending to coal power projects. We take a patient, collaborative approach to highlighting the long-term financial upsides of renewables, and creating the structures needed to gain the buy-in of lending institutions.

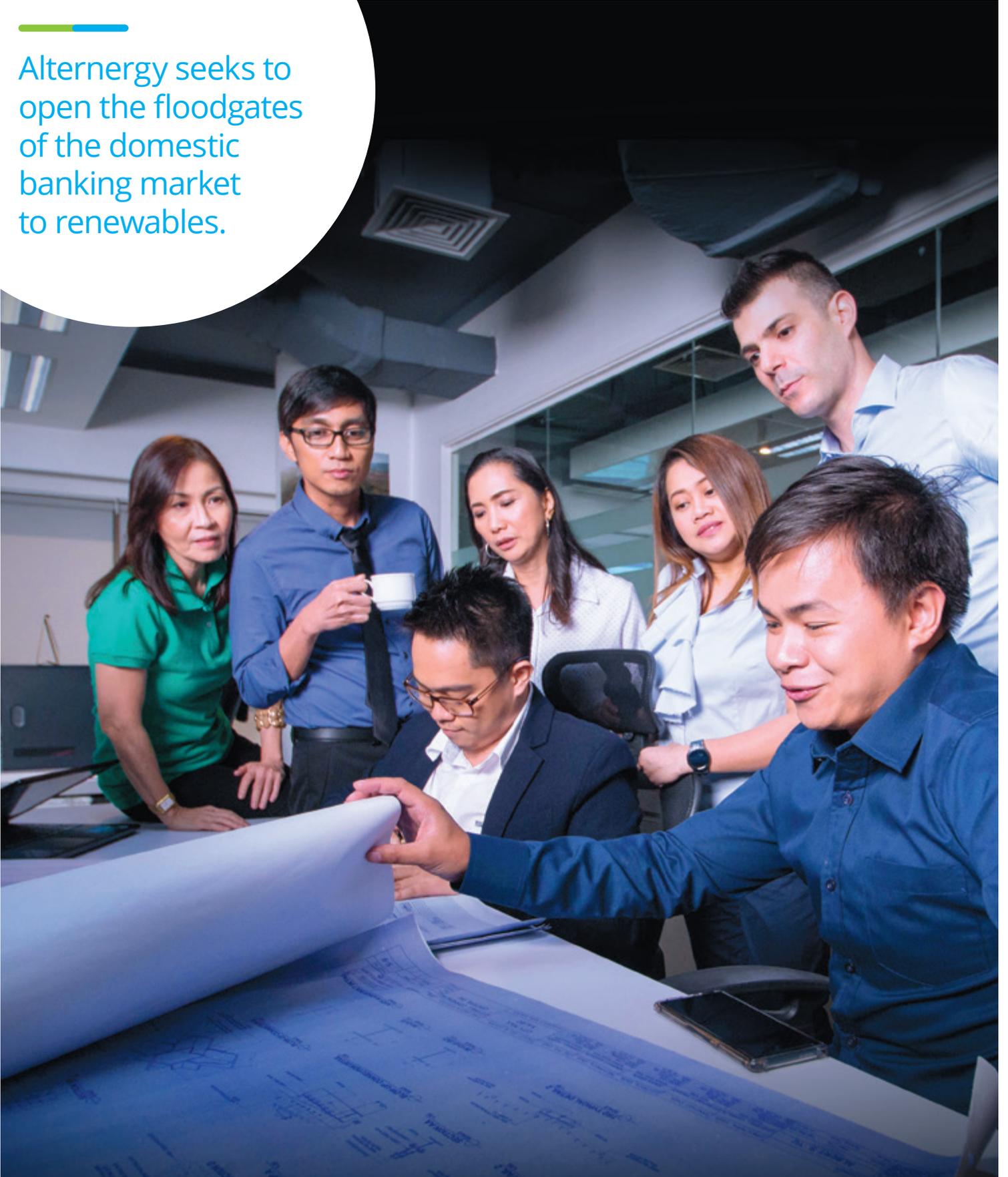
In every Alternergy project, we provide lenders access to world-class technical analysis. They not only gain assurance of the project's technical

design robustness, but also come away with knowledge and benchmarks to apply to future renewable lending opportunities.

Project Financing 'Firsts'

- The 54MW Pililla wind farm was funded by an innovative non-recourse project loan facility by a consortium of three Philippine banks, the first non-recourse financing for a Feed-in-Tariff project in the Philippines.
- The 12.5MWp Kirahon solar farm utilized the first-ever non-recourse project financing for a bilateral solar power project in the Philippines.
- The 5MWp CitySun solar rooftop portfolio was the first project in the Philippines to utilize non-recourse project financing for a portfolio of solar rooftop projects.

Alternergy seeks to open the floodgates of the domestic banking market to renewables.





Helping communities is part of every Alternergy project.



◀ (Clockwise from top)
Workers install a sign promoting Pililla as a tourism destination; Sales of souvenir t-shirts benefit the local community; Bamboo windmills crafted by residents of Pililla

▲ (Top to bottom)
Children hold backpacks containing school supplies; Kiangan tribal elder showcases traditional weaving at Alternergy-supported heritage center

Community Benefits

Multiple community benefit programs are tied to each project, and outreach efforts are tailored to the needs of our host villages. Examples of the activities Alternergy has conducted include:

Livelihood

Once the Pililla wind farm became operational, tourism increased in the surrounding area. Alternergy helped residents of the nearby Halayhayin village gain a new stream of income by teaching them to construct bamboo windmills to be sold in local shops. In the months that followed, we scaled the program by promoting and developing new lines of goods.

Education

Two hundred and fifty marginalized schoolchildren from Hulo and Bagumbayan, two other villages in proximity to the Pililla wind farm, received school bags filled with supplies at the start of the school year. On a yearly basis, Alternergy team members distribute the supplies and share about the benefits of renewable power.

Health

Many families in the communities where Alternergy works don't have the resources to purchase basic hygiene items on a regular basis. When Alternergy identifies this challenge, we put together kits containing shampoo, soaps, toothbrushes, and toothpaste, and distribute them to children in need.

Environment

Soil erosion is a challenge faced by many places in the Philippines, and planting bamboo near riverbanks and waterways can help control the problem. In partnership with the Province of Rizal, Alternergy supported a bamboo planting activity, working alongside locals to put new seedlings in the ground.

▶▶ Host community children with hygiene kits, a Christmas gift from Alternergy

▼ (Left to right)
Bamboo seedlings are planted to prevent soil erosion; Lunch is served at a community center near Pililla





Alternergy runs programs focused on livelihood, education, health, and the environment.



Alternergy breaks new ground, starting with the way the company is run.



Life at Alternergy

In breaking new ground for renewable energy in the Philippines, Alternergy starts with the way the company is run. Intentionally lean and focused on providing team members with purpose and autonomy, we have a flat organizational structure. Our culture is often described as family-like and nurturing.

In the yearly Alternergy outing, we bring the entire team on the road to learn about new sustainable practices in the country. A team lunch is held every week, and special activities are organised around Mother's Day and Father's Day. Family members are welcomed to the office, and Christmas parties always include an element of outreach to the needy.

We believe that to do things differently, you need to start with your own house – and this is how we choose to run ours.

◀ Alternergy has a flat structure that invites collaboration between team members

◀ (Top to bottom)
The team goes whitewater rafting; An Alternergy amusement park outing with disabled kids; Children of Alternergy team members build their own Lego wind farms

Work with Us

Partners

Alternergy welcome co-investors in our projects who share our Quadruple Bottom Line Philosophy.

We partner with developers in the early stages of project development.

We welcome your proposal for collaboration.



Join Us

We are committed to expanding the availability of renewable power in the Philippines.

Join us in our mission to make the country a leader in clean energy.

Enquiries are welcome.

alternergy

Renewable power pioneer

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