

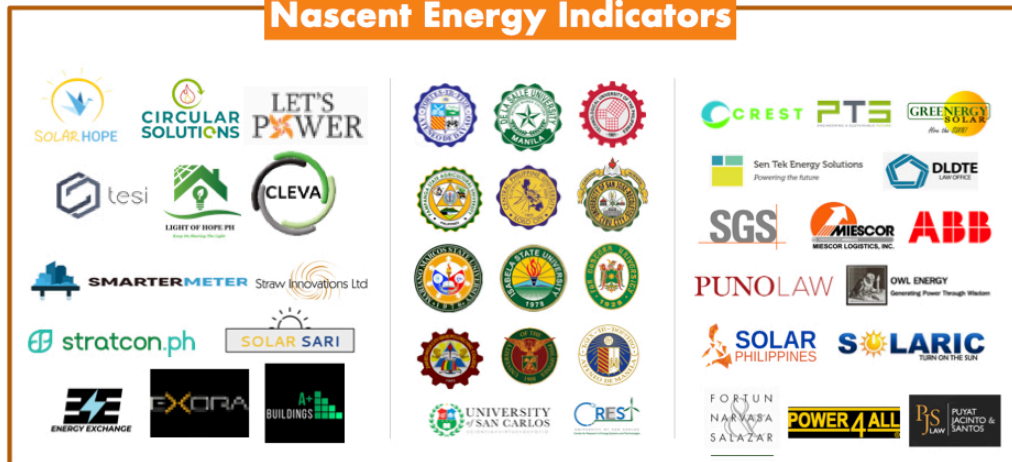


2020 Interim Report

The Philippines New Energy Ecosystem Map

The Philippines New Energy Ecosystem 2020

Nascent Energy Indicators



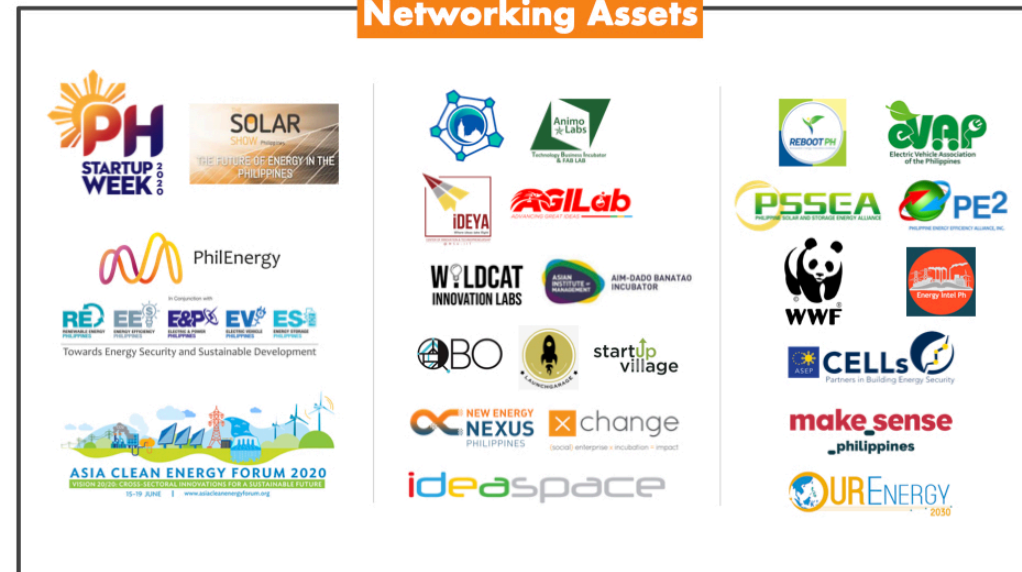
Institutions



Investors & Financing Mechanisms



Networking Assets



Enabling Environment



The Philippines New Energy Ecosystem Map

The New Energy Ecosystem Mapping is a project initiated by New Energy Nexus in collaboration with different energy and innovation stakeholders in the Philippines. The project aims to produce an interactive ecosystem map, document, and database of the different key players and indicators in the Philippine new energy landscape, which includes renewable energy and energy-smart technologies.

An ecosystem map is a practical tool for understanding the new energy landscape, identifying strengths, weaknesses, opportunities, and threats that startups and entrepreneurs can leverage on. The map is useful for:

- Startups and entrepreneurs: to identify market opportunities, what energy innovations and business models are existing, and to know the different support mechanisms available to them;
- NGOs, Incubators, and SME support organizations: to understand areas of the ecosystem that need further support and strengthening;



The Philippines New Energy Ecosystem Model based on Energy Innovation Ecosystem (Lin & Chanthavali, 2016) and Startup Ecosystem (Startup Commons) frameworks

- Funders and investors: to recognize market opportunities and the different innovation indicators;
- Companies and LGUs: to be conscious of the other ecosystem players and explore areas for collaboration; and
- Energy researchers: to serve as a baseline study for research and development projects in the new energy space.

NASCENT NEW ENERGY INDICATORS

15 New Energy Startups	8 Universities
240 Active Patents	200 Professional Service Providers
141 Researches	16 Media
11 Research Laboratories	

INSTITUTIONS

198 Electric Generation Companies
22 Private Distribution Utilities
6 LGU-owned Utilities
120 Electric Cooperatives
67 Retail Electricity Suppliers
2,089 End Users
396 Transport Cooperatives

INVESTORS & FINANCING MECHANISMS

27 Bank Loans	2 Insurance Programs
6 Grant Providers	6 Angels & Investor Networks
11 VC Firms	5 Green Bonds
5 Crowdfunding	6,943 Micro-Cooperatives

ENABLING ENVIRONMENT

4 General Business Incentives
5 Certification Bodies
88 Policies

NETWORKING ASSETS

18 Inspirational Events
15 Capacity Building Initiatives
22 Fab Labs
15 Networking Events
44 Incubators
25 Evangelists
2 Startup Validation Programs
4 Seed Accelerators
1 Growth Accelerator
2 Pitch & Demo Events

Statistical Summary of the 2020 Philippines New Energy Ecosystem

The Philippines New Energy Ecosystem is defined as the intersection of nascent new energy assets with financing mechanisms and related institutions located in a geographically concentrated area that has an enabling environment, or supportive new energy policies, which encourages commercialization and networking assets to increase communication and collaboration opportunities. The 2020 ecosystem map has 35 stakeholders and indicators with a total of 10, 779 entries in the database. These entries are carefully selected based on the validation criteria and legitimacy of the sources. Additionally, the ecosystem map went through revisions based on the insights gathered from the stakeholders' consultation sessions.

Nascent Energy Indicators

The presence of startups, patents, researches, research laboratories, universities, media, and professional service providers are the nascent indicators that drive innovations in the energy landscape.

The 2020 new energy ecosystem has 15 energy startups that offer energy management, access, financing, storage, generation, and efficiency solutions. Examples of energy startups are Exora, a platform that connects Retail Electricity Suppliers with contestable customers; Smartermeter, an energy management system for households and rental business units; Circular Solutions, a waste management system to help residential communities with clean cooking fuel from biodegradable waste; and Light of Hope, an impact startup that provides solar generator systems for low-income families.

There are 200 energy professional service providers comprising consulting services, law firms, project contractors or developers, and general engineering firms, and 16 media and news outlets promote energy-related news. There are also 240 active patents related to energy, clean energy, renewable energy, and battery; 141 researches on clean energy, energy management, energy & environment, energy

efficiency, energy policy, renewable energy, RE sources, Micro-grids, RE Systems, and Smart grid. Seventeen (12%) of these energy researches are Research & Development projects supported by the Department of Science and Technology – Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD).

Furthermore, our current new energy landscape has 11 research laboratories and eight universities. The research laboratories support energy projects and innovations, and they specialize in Solar PV, Energy Systems, Bio-energy, Energy Harvesting, among others. The University of the Philippines and the Mariano Marcos State University offer formal Energy Engineering studies. On the other hand, five universities offer electives on energy, power, and renewable energy courses. Recently, the Ateneo School of Government has announced that they will be offering an Energy Transition track in their Masters in Public Management curriculum. As a reference to other SEA countries, Vietnam has about the same number of academic institutions that offer energy programs, and Indonesia has 11.

Investors & Financing Mechanisms

Investors and financing mechanisms are keys to the growth and commercialization of nascent new energy assets. Depending on the energy indicators, the funding types and levels could vary and range from bank loans, grant providers, VC firms, crowdfunding, insurance programs, angels and investor networks, green bonds to micro-cooperatives. There are 27 bank loans available for energy startups and projects, 6 grant providers, 11 VC firms, 5 crowdfunding platforms, 2 insurance programs, 6 angels and investor networks, 5 green bonds, and 6943 micro-cooperatives.

Based on the data from the [National Electrification Administration](#), there are 24,556 un-electrified communities in the country. Additionally, regions with low electrification rates are those with less or absence of registered micro-cooperatives that may provide micro-loans to consumers for electrification. Off-grid solutions, such as stand-alone solar and mini-grids, are instrumental and cost-effective ways to provide energy access, especially to the last 10 percent of the population who live without electricity in rural, island areas. According to the report published by Taking the

Pulse in 2019, it is forecasted that 1.25 million households can be reached through mini-grid generated electricity by 2030 if USD 354 million is invested in mini-grids between now and then, and 2.5 million households will have stand-alone solar connections over the 2020-2030 period (or 35 percent of new connections over the period) which will require USD 897 million in finance of which USD 33 million would be utilized to address the affordability gap and provide electricity service to the most marginalized and vulnerable households.

Enabling Environment

The enabling environment encompasses the regulatory regime and the physical electricity-generating characteristics of a region that would favor the growth of one sector of clean energy over another. The indicators in the enabling environment are the certification bodies, general business incentives, state and local energy policies which also include subsidies and incentives.

There are currently three energy laws that enable opportunities in the energy landscape. (1) [The Electric Power Industry Reform Act \(EPIRA\) of 2001](#) which privatized the power sector. This means that power generation, transmission, and distribution are owned and operated by private companies. The law ensures competitive energy prices with multiple players in the market, a more reliable supply of electricity, and better quality of power. EPIRA is one of the reasons why the government does not subsidize our electricity and is the reason why our country has one with the highest power rates in Asia.

(2) [The Renewable Energy Act of 2008](#) aims to increase renewable energy in our power mix. Currently, our country has a 30% installed capacity that generates around 20%. The government plans to increase the share with our Renewable Portfolio Standard (RPS), the Feed-in- Tariff System (FIT), Green Energy Option Program (GEOP), and Duty-free on the importation of RE materials. (3) [The Energy Efficiency and Conservation Act \(EECA\) of 2019](#) requires the establishment of an inter-agency energy efficiency and conservation committee and the certification of energy efficiency professionals and services. EECA also requires an energy performance standard and labeling.

Institutions

Institutions play diverse roles in both the demand and supply sides of the new energy landscape. They include the 198 electric generation companies, 22 private distribution utilities, 6 LGU-owned utilities, 120 electric cooperatives, 67 retail electricity suppliers, 2089 contestable consumers or end-users, and 396 transport cooperatives.

The country has prevailing issues on inefficiency in the energy supply sub-sector despite the several number of different institutions. As reported in the Philippine Energy Sector Assessment, Strategy, and Roadmap in 2018, the energy mix is composed of coal (47%), natural gas (22%), renewable energy (hydro, geothermal, wind, solar) (24%), and oil-based (6.2%) with current energy capacity at 23GW. According to the [International Trade Administration](#), our country needs about 43 GW of additional capacity will be required by 2040, and the country is clearly behind schedule in developing solutions. This inefficiency of the electricity supply sub-sector is caused primarily by a complex and slow approval process, non-optimal market mechanisms, and institutional capacity.

Networking Assets

Networking assets are events or entities that facilitate communication and collaboration among the various actors of the ecosystem. There are 18 inspirational events, 15 capacity building initiatives, 2 startup validation programs, 22 fab labs, 15 networking events, 49 incubators and accelerators, 2 pitch and demo events, and 25 evangelists.

The networking events were identified based on their profile, activity in the past six months to 1 year, and level of involvement and engagement with energy startups. Some notable ones are the big annual conferences such as The Future Energy Show, Solar Show, and The Asia Clean Energy Forum where hundreds/thousands of stakeholders in the energy sector convene. The incubators included in the map are mostly industry-agnostic, which may or may not focus on clean energy or cleantech; and the accelerators are those specific to energy or cleantech startups only.

Evangelists are organizations, associations, or individuals that promote or advocate energy and energy applications. These are RebootPH and Our Energy 2030, which are both youth-led coalitions advocating for awareness and capacity building on

renewable energy, the Electric Vehicle Association of the Philippines, and the Philippine Energy Efficiency Alliance.

Supporting Energy Startups

People associate cleantech with hardware products, where pilot projects will require years of research and product development; thus, supporting startups in this space will entail a lot of capital. There are also several institutional barriers, and the energy sector, being highly regulated, is also a challenge for new market entrants and startups. Lastly, there is also a notion that it is easier to support software startups because of their ability to scale compared to cleantech projects.

This report wants to highlight opportunities brought by energy policies in place for startups and innovators. The [Green Energy Option Program \(GEOP\)](#) provides end-users to choose RE sources as their source of energy; the [Energy Virtual One-Stop Shop \(EVOSS\)](#) intends to reduce red tape in the energy sector by streamlining permitting process of power generation, transmission, and distribution in the country; the [Senate Bill on Micro-grids](#) aims to solve the energy access problem in the country by removing barriers to private sector entry as a partner in delivering

electricity and improving the quality service in unserved and underserved areas; the [House Bill on EV and Charging Stations](#) seeks to create a national energy policy and regulatory framework for the registration of electric vehicles (EVs) and establishment of EV charging stations; and the [recent announcement of the Department of Energy on the moratorium of all upcoming coal projects moving forward](#). This is a validation that while there are institutional barriers, there are also clear signs of opportunities for new entrants.

Energy startups are not limited to energy harvesting equipment or resources. A study from the International RE Agency explained that aside from business model innovations, there are a number of applications for the energy sector for technologies such as [AI and IoT](#) (using networks of sensors through appliances and devices for optimized energy consumption), [Cryptocurrency](#) to reduce disputed energy transactions for quicker processing of payments and [Augmented and Virtual Reality](#), in improving the efficiency of energy companies in getting information from the field quickly.

Lastly, [New Energy Nexus' Accelerator-in-Box \(AiB\)](#) is a handy toolkit carefully curated from experiences and learning of more than 90 cleantech accelerators across the globe to empower more support organizations to train, capacitate and support energy startups who will then help us accelerate the country's transition to clean energy through innovation. AiB helps incubators and accelerators design programs for cleantech and clean energy startups. This includes guides for running hackathons, bootcamps, early-stage incubation, and later stage acceleration programs.

Conclusion

By increasing our efforts in enabling more startups to explore the energy sector and encouraging more people to build energy startups will help our country prepare for the massive energy transition ahead of us, and as well as increase our Global Innovation Index, albeit the interesting and exciting activities in the energy space. It is also important to note that incubators and accelerators should create capacity building programs on renewable energy skills development and energy entrepreneurship. This is to ensure a steady pipeline of energy entrepreneurs and innovators in the country. On the other hand, to close the energy access gap, the national stakeholders should innovate new financing solutions and encourage more institutions to deliver power to isolated populations in low-density areas.

Though COVID-19 has created an economic and public health crisis for the world and the government, it has had a [game-changing effect in accelerating the clean energy transition in the power sector](#). This provides an opportunity for Filipinos to find innovative energy solutions that will help us achieve a 100% clean energy economy for 100% of the population in the shortest time possible.

If you know an organization or entity that should be part of the new energy ecosystem map, kindly give us their details. Send your contribution to <http://bit.ly/PHNEEMContributor>.

Be part of the new energy movement! Help us build a vibrant New Energy Ecosystem in the Philippines.



100% clean energy economy for 100% of the population

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