

Clean Energy Finance and Investment Roadmap OF THE PHILIPPINES

POLICY HIGHLIGHTS





PREFACE

The Philippines has stepped up its efforts to reduce carbon dioxide emissions in recent years: The country submitted its first Nationally Determined Contribution (NDC) in April 2021, committing to a 75% emission reduction during the period 2020 – 2030, against a business-as-usual scenario. To achieve these emissions reductions, the country's National Renewable Energy Program 2020-2040 aims to more than double the electricity generated by renewable sources in its power mix by 2040 compared to today's levels, while reducing its economy-wide energy intensity by 3% over the same period.

Achieving these targets will require unlocking USD 337 billion in cumulative investments to 2040. The OECD Clean Energy Finance and Investment Mobilisation (CEFIM) Programme aims to strengthen domestic enabling conditions to attract finance and investments in renewables, energy efficiency and decarbonisation of industry in emerging economies. This Clean Energy Finance and Investment Roadmap of the Philippines ("the Roadmap") provides tailored recommendations for the Government of the Philippines to help unlock finance and investment in clean energy. The analyses also bring international experiences from other countries that can serve as examples for similar measures tailored to the Philippines' national circumstances.

The Roadmap focuses on two clean energy sectors that were identified and selected in consultation with the Department of Energy (DOE) of the Government of the Philippines: offshore wind power, and energy efficiency in the building sector, with a focus on public buildings. Offshore wind, with its vast untapped potential along the over 17 thousand kilometres of Philippine coastline, stands out as an opportunity to decarbonise the country's power sector, with the potential to supply 23% of the country's electricity by 2050. Promoting the benefits of energy efficiency in public buildings could help reduce energy consumption in the building sector, which is one of the largest consumers of electricity in the Philippines, and help institutionalise and promote energy efficiency and conservation across all sectors in the country.

Supporting the energy transition and the development of the energy efficiency market can also deliver strong economic benefits for the Philippines, including through raising economic growth, increased domestic tax revenues, and the restructuring and development of rural and coastal communities. It provides opportunities for human capacity development and the creation of long-term and highly skilled jobs, including through retraining the local workforce for careers across the green energy supply chain and incentivising skills transfers from the oil and gas sector.

The insights and recommendations presented in this Roadmap will help the Philippines strengthen conditions to attract the much-needed investments for the country's clean energy transition. Going forward, the OECD can support the Government of the Philippines in implementing the Roadmap's recommendations, including through tailored capacity building and knowledge sharing activities, to boost investments in offshore wind and energy efficiency.

A handwritten signature in black ink, consisting of stylized, cursive letters that appear to be 'M' and 'C'.

Mathias Cormann
Secretary-General

Clean Energy Finance and Investment Mobilisation Programme

The OECD Clean Energy Finance and Investment Mobilisation (CEFIM) Programme aims to strengthen domestic enabling conditions to attract finance and investment in renewables, energy efficiency and decarbonisation of industry (clean energy) in emerging economies. The programme supports countries in the development of policies and instruments to help scale up a pipeline of bankable clean energy projects.

The Clean Energy Finance and Investment Roadmap of the Philippines

The **Clean Energy Finance and Investment Roadmap of the Philippines** is a strategic plan that brings together government and private sector stakeholders to agree on key actions needed to unlock finance and investment in offshore wind and energy efficiency in public buildings in the Philippines. The two sectors were identified and selected in consultation with the Philippines Department of Energy (DOE) to accelerate the country's decarbonisation pathways.

The Roadmap process was launched in December 2021, under the guidance of a Steering Committee comprised of representatives from diverse ministries across the government of the Philippines and chaired by the Department of Energy (DOE).

In addition, two Technical Working Groups were formed under the Steering Committee on renewable energy and energy efficiency, thanks to co-ordination from the DOE. These working groups deliberated key issues for clean energy projects and provided valuable feedback throughout the Roadmap process. Representatives from government, industry, financial institutions, and policy advisors participated in the working groups.

The process for drafting the Roadmap included workshops with experts and key stakeholders to identify barriers and develop possible solutions. Thanks to the fruitful discussions in these workshops, key financing solutions were identified, roadmap findings were discussed, and consensus was reached on the roadmap actions and areas of recommendation. These have also been supported with data and analysis from other studies and research. Over the course of 2022 - 2024, three in-person workshops in the Philippines have been jointly held by the OECD and the DOE:

- Workshop I (May 2022) to assess critical barriers and opportunities to prioritise actions that improve clean energy finance and investments.
- Workshop II (November 2022) to identify solutions that improve enabling conditions and attract finance for offshore wind and energy efficiency in public buildings.
- Workshop III (March 2024) to discuss the recommendations of the Roadmap and the way forward towards their implementation, back-to-back with the Roadmap launch, relying on an open dialogue and exchange of good practices between key public and private stakeholders.

The Clean Energy Finance and Investment Roadmap of the Philippines was made possible with funding from the Government of Germany, under the Sustainable Infrastructure Programme in Asia (SIPA).

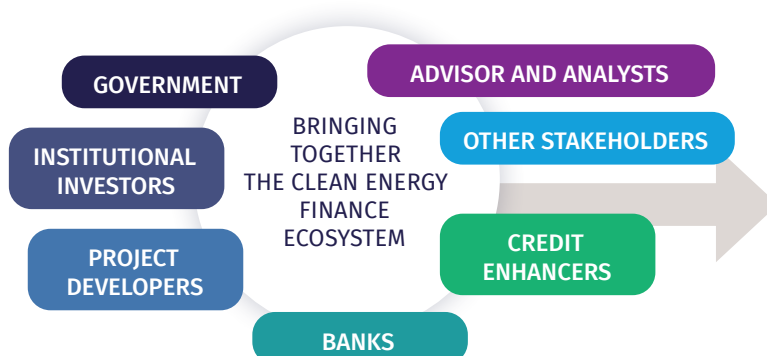


FIGURE 1

Roadmap objectives

Stakeholder engagement

To identify needs / challenges, highlight opportunities and build consensus on steps forward

Actionable recommendations

To implement innovative financing solutions and effective investment vehicles

Operationalisation

Of financial instruments, tools or projects to engage investors and attract capital at suitable scales

FIGURE 2

Roadmap process through stakeholder engagement

Outline priorities

Assess opportunities

Highlight challenges

Discuss best practices

Showcase projects

Improve project bankability

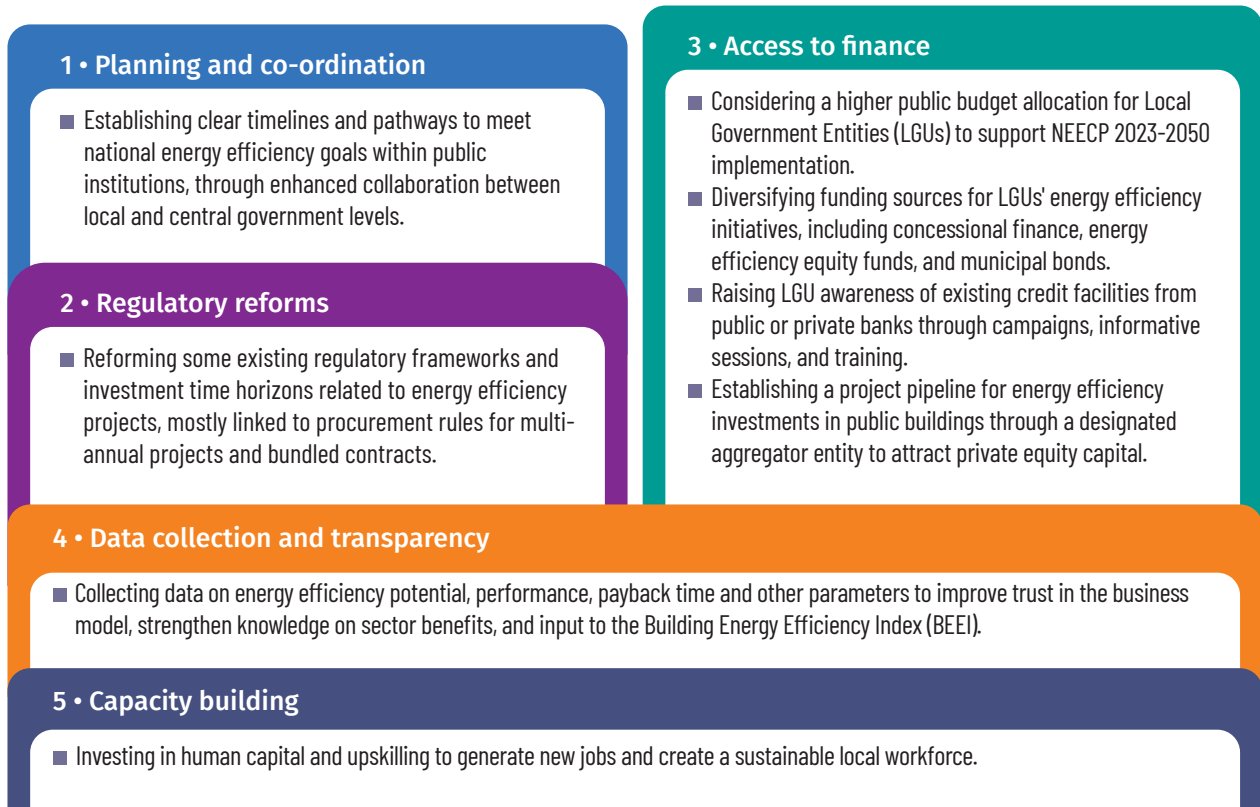
KEY RECOMMENDATIONS

The Philippines aims to achieve 50% renewable energy in its electricity mix by 2040, alongside a 24% economy-wide energy savings target. Reaching these targets necessitates significant investments, estimated at USD 337 billion by 2040, with substantial socio-economic benefits. Recognising the high investment needs and the opportunities they can unlock, the government has lifted Foreign Direct Investment restrictions in the energy sector since 2022. Alongside this open approach, developing a strong policy, regulatory, and investment environment is crucial to attract both domestic and international capital, aligning with the nation's clean energy ambitions.

This section outlines a summary and overview of a strategic framework for government action to unlock finance and investment for offshore wind projects and energy efficiency in public buildings. The actions outlined below can serve as guidance for the central and local government in the Philippines, international development community active in the country, as well as the private sector, on attracting finance and boosting clean energy investments.

FIGURE 3

Main recommendations for energy efficiency in public buildings



Policy

Supporting infrastructure

Regulatory

Finance

Capacity building

Key recommendations to unlock finance and investments in offshore wind in the Philippines

1 • Target setting and cross government collaboration

- Setting specific and time bound targets for fixed bottom and floating offshore wind.
- Formulating coherent, aligned and co-ordinated development plans across licensing, permitting, grid connection and supply chain.

2 • Data collection, resource assessment, zone allocation

- Consolidating and digitising existing baseline data for developer access.
- Progressively adding environmental and socioeconomic data, such as biodiversity, grids, and port infrastructure.
- Closely co-ordinating data collection with the industry to ensure relevance and avoid duplication.

3 • Offshore wind planning and permitting

- **Wind Energy Service Contracts (WESC):** clarifying any issues of tenurial rights and allocating realistic pre-development timelines.
- **One-stop-shop:** Providing digital and adequately staffed one-stop-shop structure with clear roles, responsibilities, and timelines for all agencies involved.

7 • Offshore wind finance

- Providing stable and predictable regulatory environment, with long term visibility for investors to attract low cost finance.
- Enhancing credibility in PPA contract policies with clear rules and responsibilities for all parties involved.
- Bringing a diversity of financiers with varying risk profiles to support project development and capital recycling.
- Early consideration of non-recourse finance to streamline fundraising and attract domestic and international capital, either through debt or equity.
- Focusing on role complementarity and collaboration between Multilateral Development Banks, International Financial Institutions and Export Credit Agencies.

8 • Capacity building

- Building a well-trained workforce and adequate skills during construction and installation to ensure industry competitiveness and local supply chain build-out.
- Providing targeted workshops, knowledge sharing and other capacity building activities to improve the understanding of banks and financiers on offshore wind market fundamentals in the Philippines.

4 • Transmission planning and grid upgrades

- Include offshore wind in the Competitive Renewable Energy Zones (CREZ) to match output with demand.
- Reforming and diversifying the project selection process and system impact studies.
- Clearer asset boundary classifications in the grid code to enhance ownership transparency across all project stages, including decommissioning.

5 • Onshore support facilities and port upgrades

- Conducting a readiness assessment of priority ports and establishing a baseline for required investments.
- Considering a multi-port strategy where different ports collaborate to provide different services during different stages of a project's lifecycle.
- Allocating specific development zones, timely planning and permitting, and frontloaded auction schedule can provide investment certainty and showcase future utilisation rates.

6 • Auction design and regulatory framework

- Designing an auction that addresses industry risks and aligns with regulatory frameworks for planning, permitting, transmission, and onshore support facilities. Some important features include:
 - I - Visibility on timing, volumes and pricing to improve the auction outcome.
 - II - Revenue stabilisation based on a transparent costing methodology to attract low-cost and long-term finance.
 - III - An inflation indexed tariff to mitigate some of the macro-economic risks in a project.
 - IV - Blending corporate Power Purchase Agreements (PPAs) with policy support, as an additional revenue stabilisation mechanism.



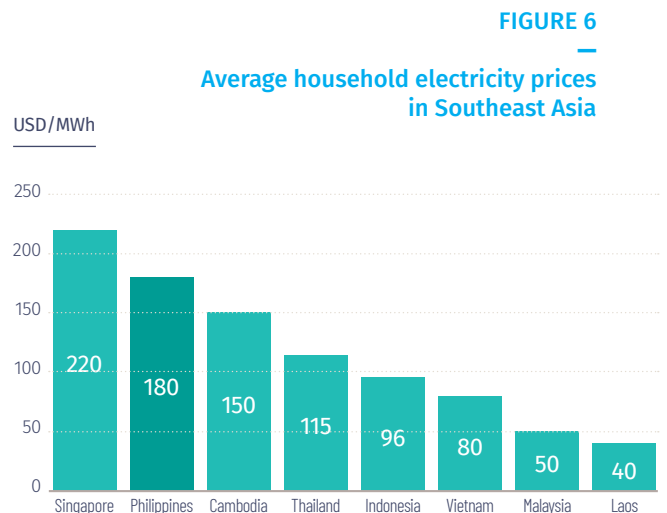
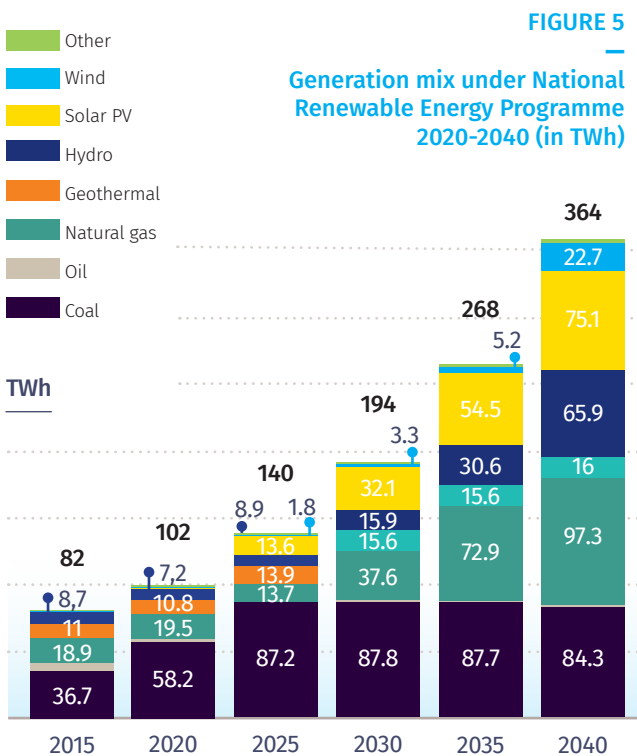
The Government of the Philippines is significantly stepping up efforts to reduce carbon emissions, transition towards a more sustainable economy and elevate the country to an upper middle-income economy. The country's growing economy will increase demand for energy, which can be met by fully leveraging its renewable energy potential and abundant natural capital.

THE POWER SECTOR AND REGIONAL CONTEXT IN THE PHILIPPINES

OVERVIEW OF THE POWER SECTOR IN THE PHILIPPINES

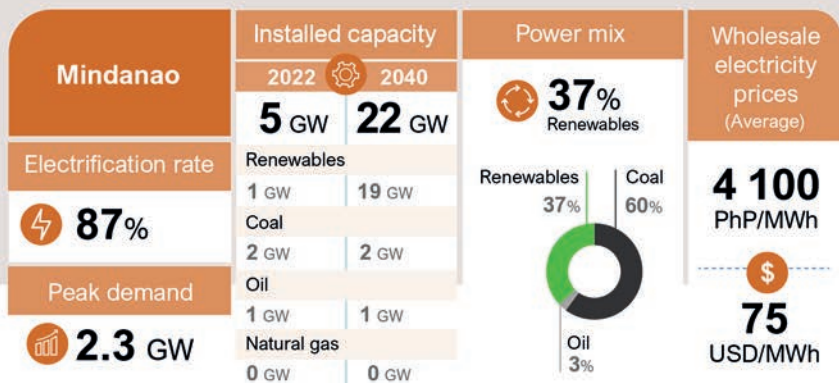
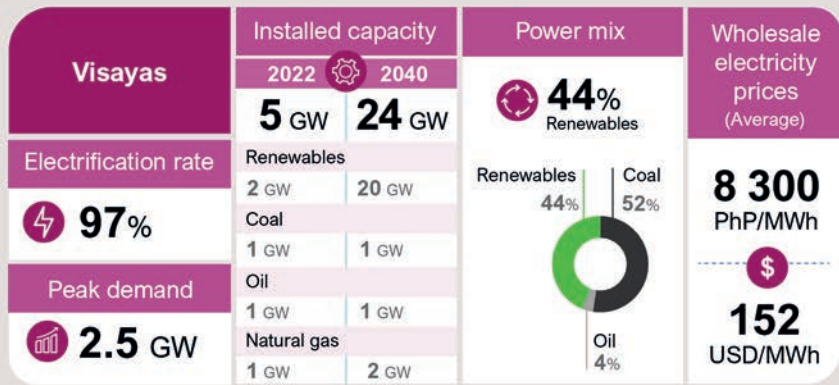
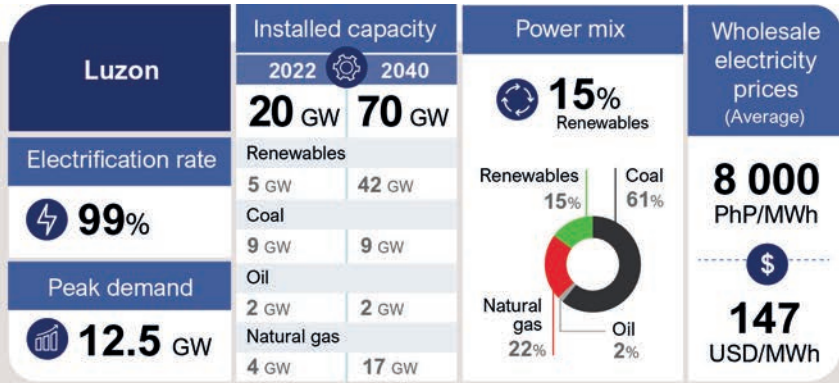
- The Philippines has one of the most liberalised power markets in Southeast Asia since 2001. The legislation unbundled generation, transmission and distribution of electricity, though regulated cross-ownership between generation and distribution businesses is permitted within defined limits.
- Despite domestic power producers owning most of the generating assets, the wind energy supply chain draws interest from many international players. The solar sector, however, is more weighted toward regional participants rather than global multinationals.

- The Philippines' power sector relies heavily on imported fossil fuels to meet its energy demands, with coal, renewables and gas as the primary sources.
 - Coal accounts for nearly 60% of the country's electricity supply, dominating generation for the past two decades.
 - Renewables contribute 22% of the electricity supply but have seen a decline in their share over time, as capacity installations have not been sufficient to meet increased electricity demand.
 - Gas-fired power plants provide 18% of the electricity supply.
- The Philippines has some of the highest electricity prices in the region, despite an abundant renewable energy potential. This is due to a high reliance on fossil fuel imports and a fragmented grid infrastructure that presents challenges for renewable energy integration.





**THE PHILIPPINES GRID
AND REGIONAL
CONTEXT IN 2022**



The Philippines' power market and transmission infrastructure must be viewed in light of its unique geography and archipelagic system. With over 7,200 islands and no centralised national grid, regional disparities in service quality, electrification rates, grid development and supply/demand management persist, leading to local issues like congestion and varying electricity prices.

The country comprises three main regions — Luzon, Visayas, and Mindanao — each with its own sub-grid. While Luzon and Visayas grids are interconnected, operating under a unified wholesale electricity market, the Mindanao grid is set to join the national network by 2024 through the "One Grid 2020" project. Challenges in transmission infrastructure persist on more than 120 small islands and isolated power grids beyond the main regions.



The Philippines is estimated to have a technical offshore wind potential of 178 GW, none tapped so far. With high and more consistent wind speeds and a reduced environmental impact, offshore wind can be a key technology for the country's energy transition. Offshore wind for the Philippines offers the prospect of better using the country's maritime resources, bringing additional investments in the local economy, jobs and knowledge transfer.

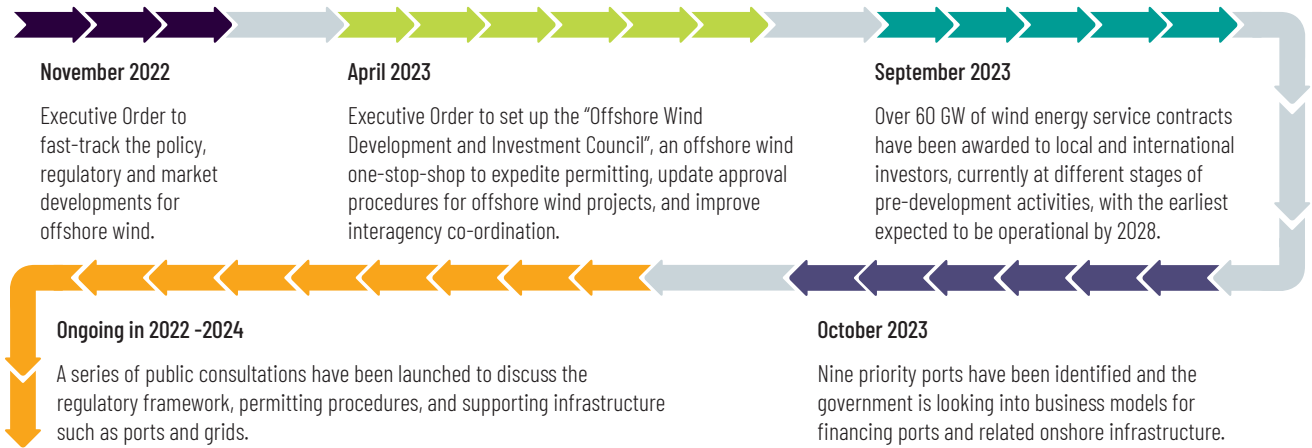
OFFSHORE WIND

OVERVIEW AND MARKET DEVELOPMENTS

The government of the Philippines is progressing quickly to establish the market rulebook for the country's future offshore wind industry. Several international partners are assisting key institutions in the Philippines to establish the right policies and incentives, drawing on global best practices and regulatory conditions across the offshore wind supply chain.

FIGURE 7

Offshore wind market developments





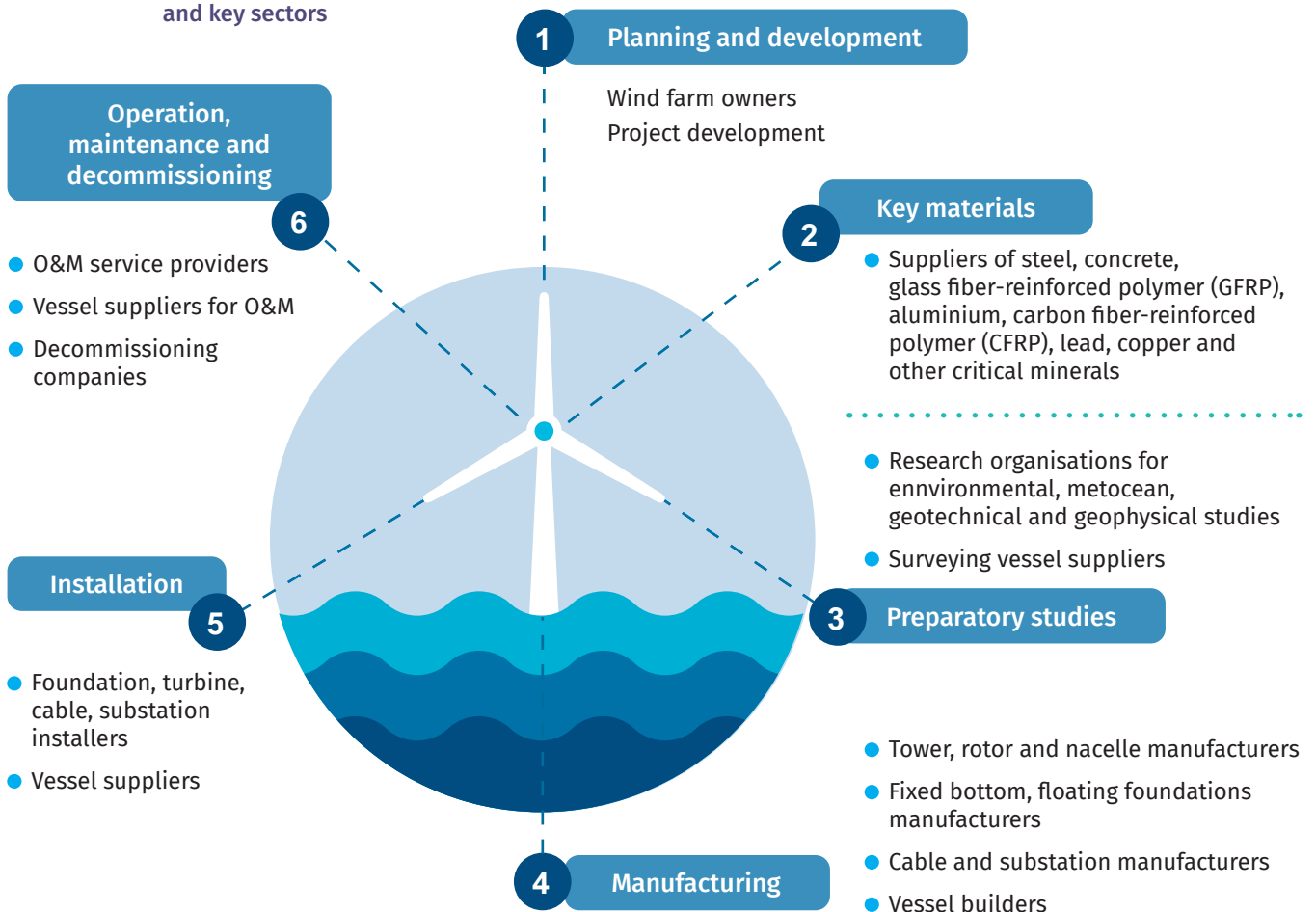
OFFSHORE WIND CHALLENGES AND MARKET DEVELOPMENT BARRIERS

Challenges specific to the offshore wind sector:

- Difficulties of installing heavy wind farm structures in deep waters.
- Very diverse supply chain bringing together various non-related industrial sectors in marine and non-marine environments, that require several interfaces with each other.
- Complexity of co-ordinating planning, project and risk management given the scale of operations needed to build an offshore wind farm.

FIGURE 8

Offshore wind supply chain and key sectors



Challenges specific to the Philippines regulatory context:

- Designing a policy and regulatory framework that provides the right investment signals for investors while allowing for projects to get built on time, cost effectively and with maximum local benefits.
- Planning for the necessary port and grid infrastructure that can support an emerging offshore wind market in the Philippines.
- Co-ordinating the involvement of over 20 agencies nationwide in a single permitting process based on a one-stop-shop approach.
- Recognising the role of finance in supporting cost reduction pathways and the impact on policies and regulations on the cost of finance for offshore wind.



OFFSHORE WIND FINANCE

OFFSHORE WIND FINANCE AND INVESTMENT POLICIES

Investment needs for offshore wind are significantly higher than the country's current average annual spending in clean energy.

- Meeting the Philippines' offshore wind target of 17 GW by 2050 will need an estimated USD 50 billion of investments.
- This means doubling the current average annual spending on renewable energy finance over the past decade.

To attract necessary investment, the government has revised restrictive laws on local content requirements and minimum paid capital.

- The removal of the 40% foreign ownership cap in the renewable energy sector allows foreign investors full control over exploration, development, and utilisation of renewable energy sources.
- This has already prompted investment pledges from private investors and technical assistance programmes from foreign governments.

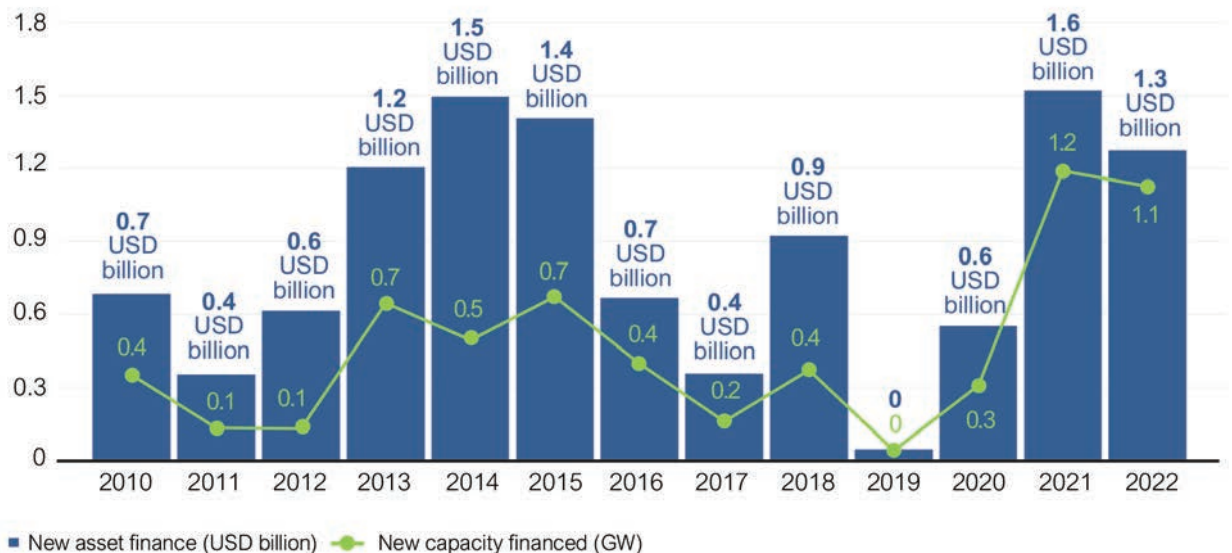
Financing plays a key role in capital intensive technologies like offshore wind.

- The nature of projects, with very high upfront costs and relatively low operational costs means that initial investment repayment is the primary driver of electricity production costs.
- Capital expenditures and associated financing costs make up about 80% of lifetime expenses for Western European offshore wind projects.
- Developer feedback suggests that a 1% change in the cost of capital could result in an 8% change in electricity costs for certain projects, as per OECD stakeholder consultations.

While liquidity in the Philippines has been relatively high, deploying it for offshore wind may present some challenges.

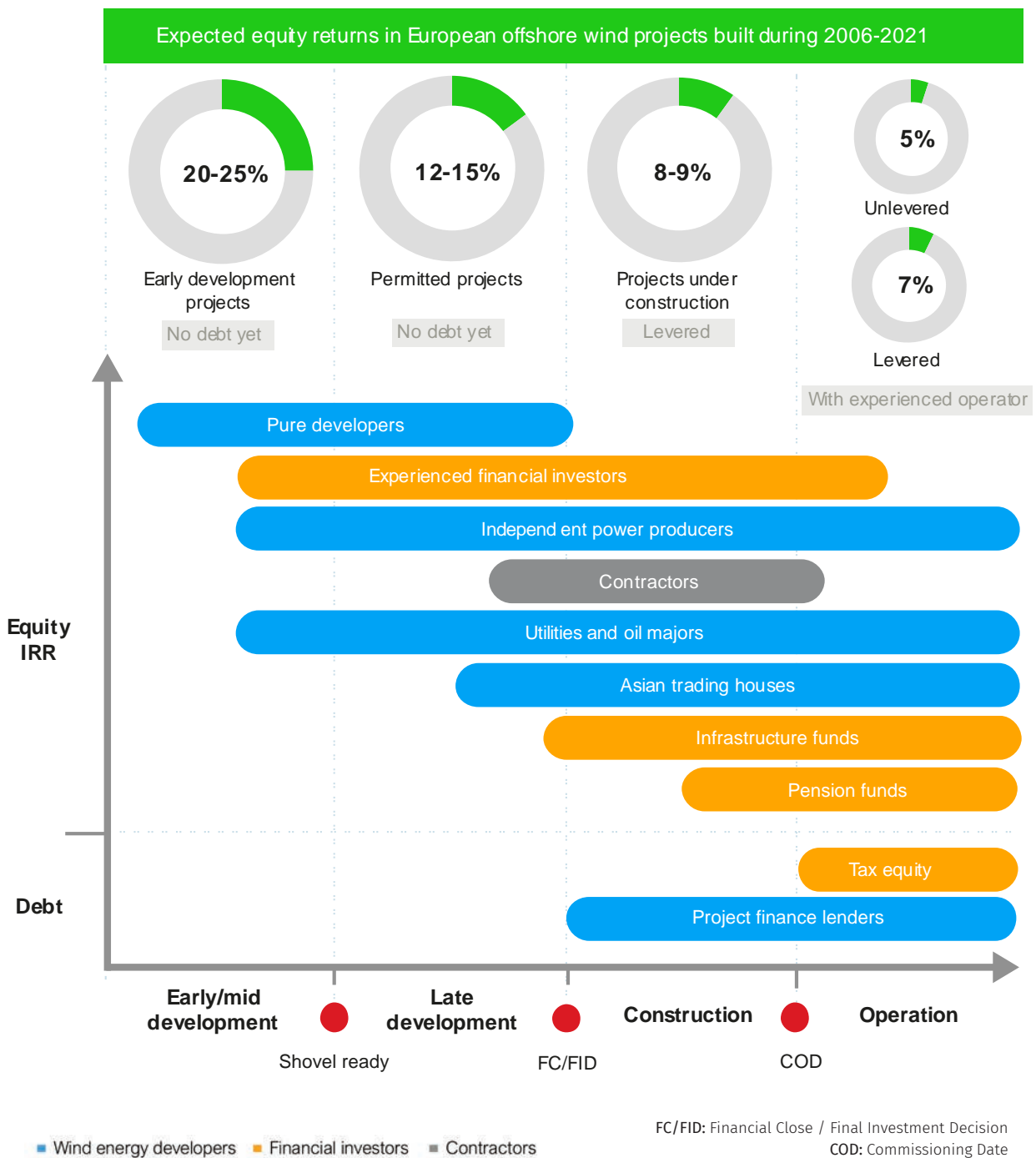
- The financing will largely depend on the regulatory framework, administrative set-up in planning and permitting, grid and port infrastructure development.
- Effective risk-sharing and understanding among the public sector, private sector, and financiers will improve the availability and cost of capital.
- The banking sector is concentrated, with the top five domestic banks holding 60% of assets.
- Overseas lenders have limited presence, comprising just 7% of banking assets in the country.
- Non-banking segments like insurance, pensions, and mutual funds are underdeveloped compared to global standards.
- Debt financing is critical, yet non-bank financial institutions also play an important role in helping the industry recycle capital and provide low-cost finance.

FIGURE 9
Investments in new renewable energy projects in the Philippines 2010-2022 (includes Battery Energy Storage)





EXAMPLES OF INVESTOR RISK PROFILES AND EXPECTED RETURNS FROM ESTABLISHED OFFSHORE WIND MARKETS





ENERGY EFFICIENCY IN PUBLIC BUILDINGS

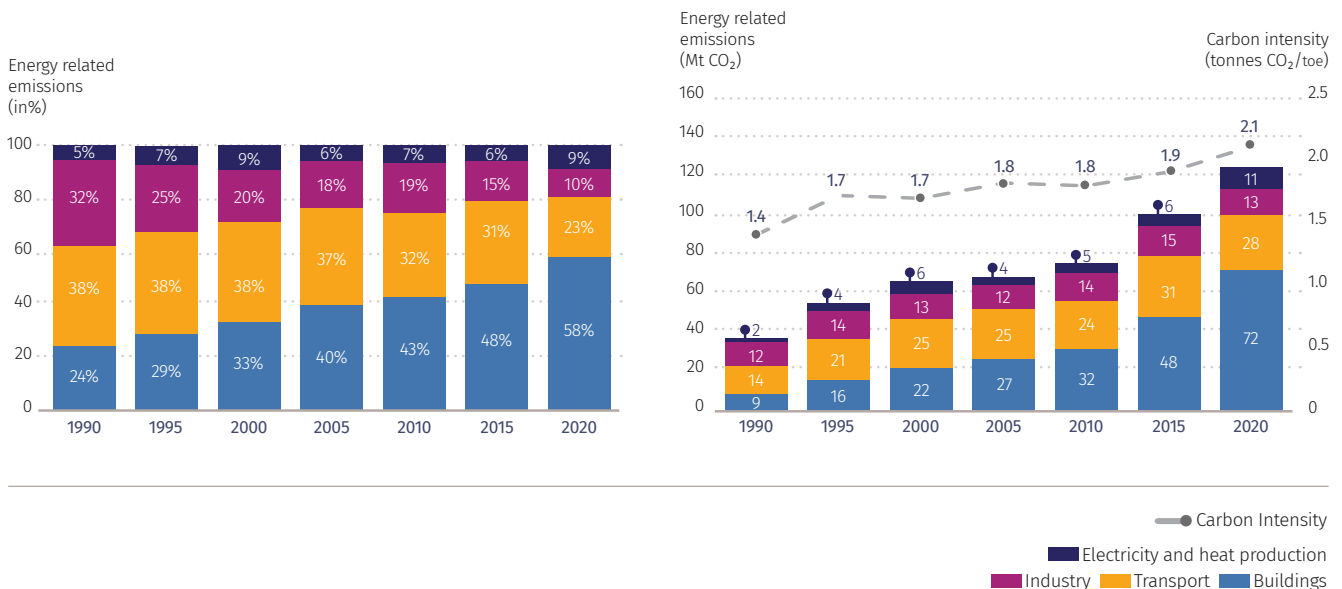
Energy efficiency is a key pillar in the Philippines' pursuit of its energy and climate objectives. With a rapidly expanding population and economy, the country's energy demand is expected to rise by 7% annually until 2040 under a business-as-usual scenario. Nearly half of the total final energy consumption is attributed to residential, commercial, and public services. Implementing energy efficiency and conservation measures in these sectors can significantly curb energy-related emissions and mitigate future energy demands.

OVERVIEW AND MARKET DEVELOPMENTS

- The energy efficiency market in the Philippines remains nascent but efforts are underway to promote the benefits of energy efficiency to help market scale-up.
- Clear and time-bound sectoral targets in the updated National Energy Efficiency and Conservation Plan (NEECP) 2023 – 2050 can guide decision making and create a unified direction for energy efficiency in public buildings.

- Updated Green Building Code mandates energy efficiency guidelines for larger structures. Buildings of over 10,000 square feet are mandated to have certified energy efficiency officers or managers.
- Government Energy Management Program (GEMP) targets 10% reduction in electricity and petroleum consumption compared to 2004 and 2005 averages, with just under half of entities compliant.
- Current government initiatives have saved an estimated USD 3.7 million as of Q1 2023, largely driven by LED adoption.
- As of the first half of 2023, only 42% of government entities are aware of GEMP and Energy Efficiency and Conservation measures.
- In the private sector, over four thousand establishments in commerce, industry and transport are actively pursuing energy-saving projects.

FIGURE 10
CO₂ emissions in the Philippines





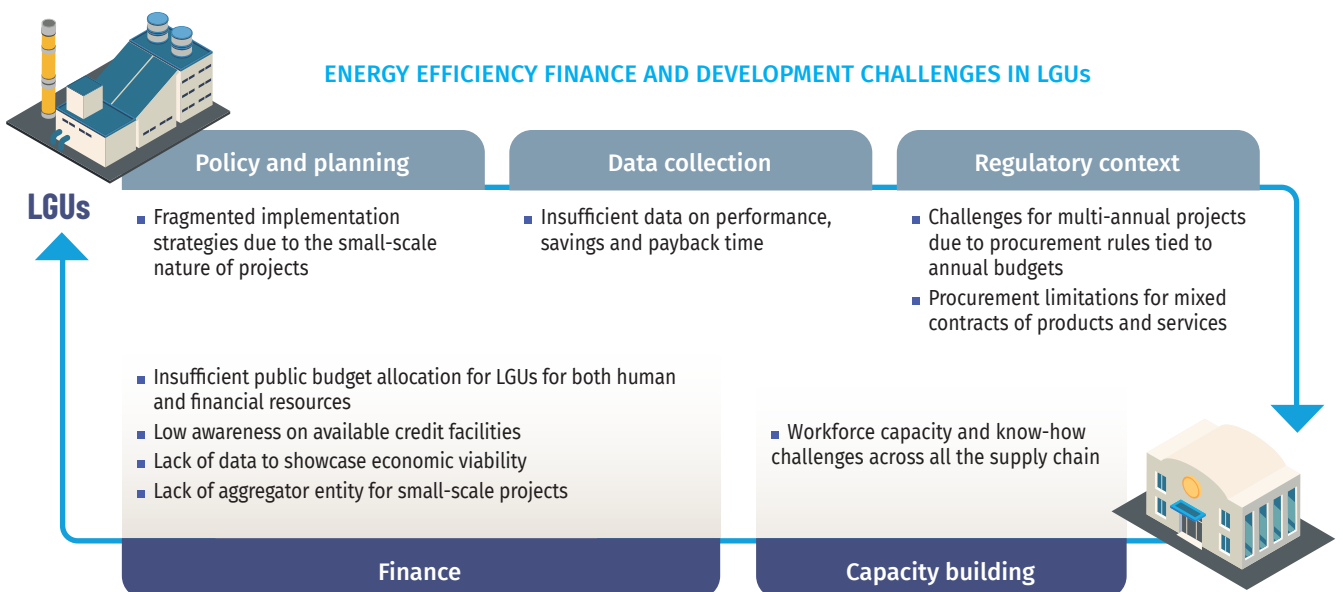
ENERGY EFFICIENCY FINANCE AND INVESTMENTS IN PUBLIC BUILDINGS

- The Philippines Energy Efficiency Alliance (PE2) estimates that investments over USD 243 billion could be needed by 2040, averaging USD 10.5 billion annually.
- Analysis of 178 public buildings suggests that upgrading lighting and air conditioning could yield:
 - An investment of USD 39 million
 - Average payback period of 3.5 years
 - Annual savings of USD 13 million, equivalent to a 33% reduction in electricity consumption or 85 million kWh.
- Actual energy savings in the public sector are likely to be higher, as this only represents a subset of all existing public buildings. Creating the right enabling conditions is thus crucial to reap the benefits of that potential.

ENERGY EFFICIENCY FINANCE AND DEVELOPMENT CHALLENGES IN LGUS

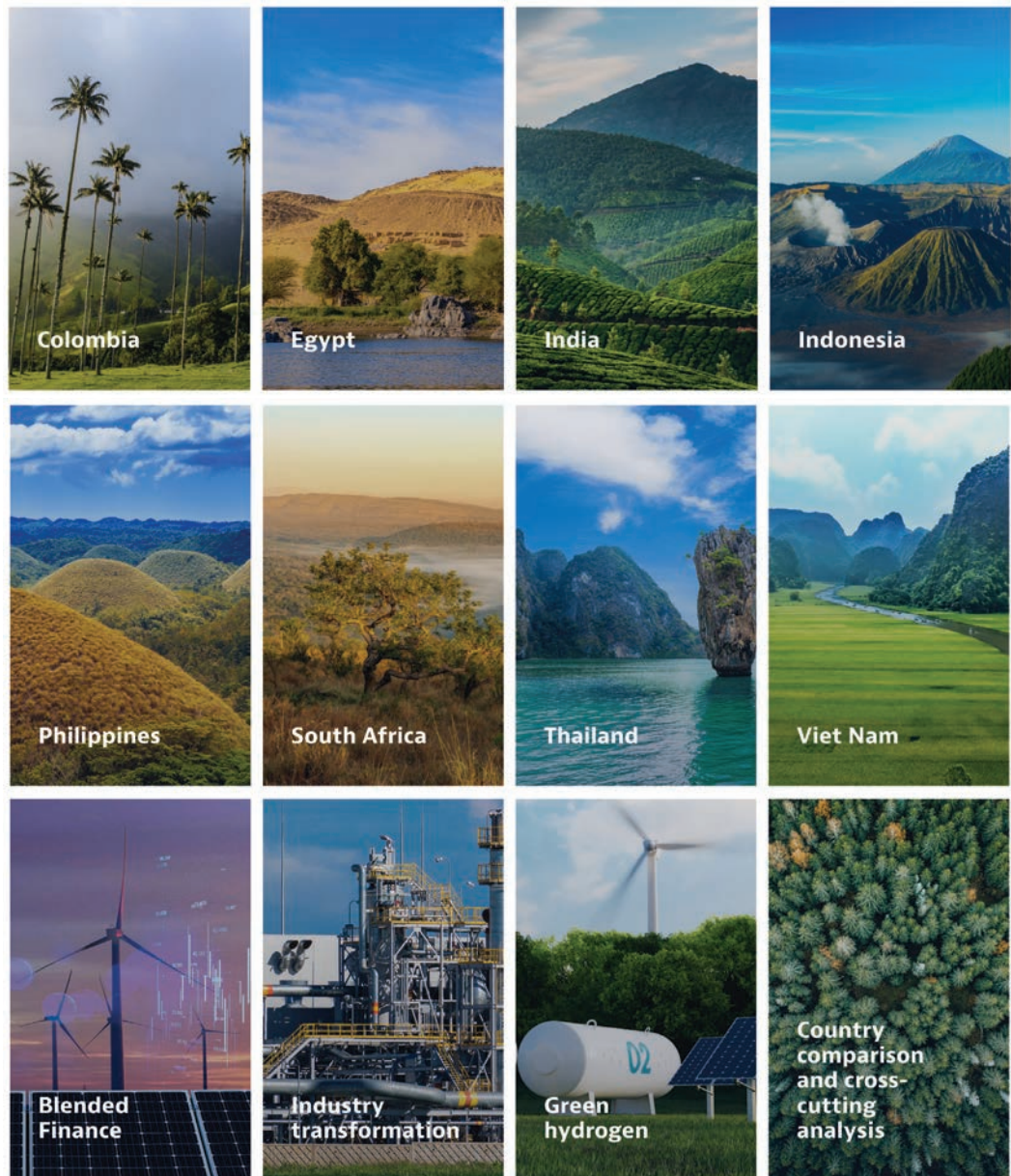
Local Government Entities (LGUs) in the Philippines can finance energy efficiency projects in two ways:

- A private sector-driven approach, using Energy Service Companies (ESCOs) through Energy Savings Performance Contracts (ESPCs).
- A public sector-led model, where LGUs independently implement, fund, and finance projects without engaging ESCOs or ESPCs.
- Both public and private led financing options available to LGUs face some challenges in the Philippines. The absence of standards, shortage of skills and workforce capacity, and the LGU budgetary limitations are some of the main barriers to funding energy efficiency projects in the public building sector.



CHECK OUT THE CEFIM WEBPAGE

- Visit www.oecd.org/cefim for on-going insights into CEFIM programme activities and events.
- This includes CEFIM *country pages* with interactive data and analysis on clean energy market trends, governance, finance and investments to provide investors, development partners, policy makers and related stakeholders with market intelligence on opportunities for clean energy investment in CEFIM partner countries.
- The website also includes *cross-cutting analysis*, including country comparison, global analysis on industry decarbonisation and green hydrogen, and guidance on blended finance for clean energy.



CHECK OUT THE CEFIM PHILIPPINES WEBPAGE

The Philippines country page builds upon the OECD's strong engagement with the Philippines and includes insights into the country's clean energy finance and investment context. It hosts interactive figures with on-going updates of market trends and outlooks, energy governance, policy highlights and the current state of sustainable finance for clean energy in the Philippines. There are also summaries and presentations from on-line and in-country CEFIM events, including background documents and summaries of workshops held throughout the development of the Roadmap.

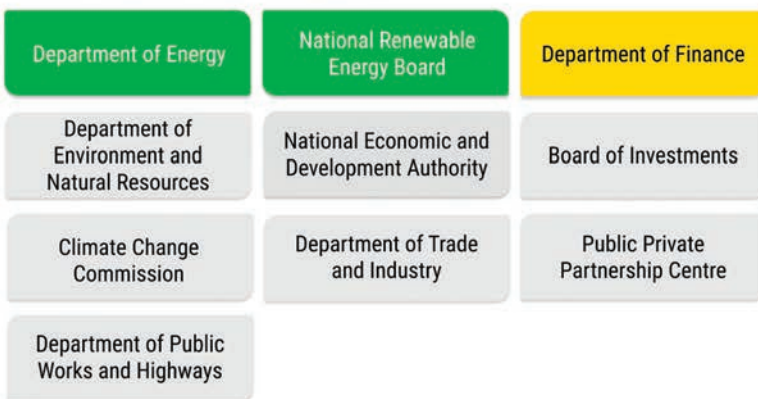
Energy market governance



1 of 3

The Department of Energy holds a central role in renewable and energy efficiency policy. A number of different government departments and independent public institutions are also involved in clean energy finance and investment policy.

Government of the Philippines



Public entities



● Power ● Renewables / energy efficiency ● Finance ● Other

Policy highlights

(Click to unselect) ● Cross Cutting ● Renewable Energy ● Energy Efficiency ● Sustainable Finance

<p>Department Circular No. DC2020-07-0017 on the Green Auction Programme 2020</p> <p>Department of Energy</p> <p>promulgates the guidelines governing the policy for the conduct of Green Energy Auction</p>	<p>Department Circular No. DC2020-06-0016 on Minimum Energy Performance for Products (MEPP) 2020</p> <p>Department of Energy</p> <p>Prescribes the Minimum Energy Performance for Products (MEPP) covered by the Philippine Energy Labeling Program (PELP) for Compliance of Importers, Manufacturers, Distributors, Dealers and Retailers of Energy-Consuming Products</p>	<p>Department Circular No. DC 2020-06-0015 on Compliance with the Philippine Energy Labelling Programme (PELP) 2020</p> <p>Department of Energy</p> <p>prescribes the guidelines of the Philippine Energy Labeling Program (PELP) for compliance of importers, manufacturers, distributors and dealers of electrical appliances and other Energy-Consuming Products (ECP)</p>	<p>Department Circular No. DC2019-12-0016 on Renewable Energy Market 2019</p> <p>Department of Energy</p> <p>promulgates the Renewable Energy Market rules (including the trading of Renewable Energy Certificates and an online trading platform).</p>	<p>The Energy Efficiency and Conservation Act of 11285 2019</p> <p>Department of Energy</p> <p>provides a framework for energy efficiency and conservation activities through institutionalising energy efficiency and conservation, enhancing the efficiency use of energy, and granting incentives to energy efficiency and conservation projects.</p>
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These Policy Highlights are based on the OECD publication:
Clean Energy Finance and Investment Roadmap of the Philippines.

In recent years, the Philippines has increased its commitment to climate action and its efforts to decarbonise the domestic economy. Its power sector accounts for 58% of the country's overall carbon emissions and will be an important driver of domestic emission reduction efforts to meet national climate and energy targets. Renewables, such as offshore wind, are expected to play a key role in the transition toward a low-carbon energy mix. With more than 17 thousand kilometers of coastline, the Philippines is estimated to have a technical offshore wind potential of 178 GW.

However, this potential has yet to be leveraged.

Alongside a changing power sector, progress on energy efficiency is needed to achieve the country's emission reduction goals, with energy savings estimated at approximately 2% annually for the residential and commercial sectors. To deliver a clean energy transition, the Philippines requires estimated cumulative investments of over USD 300 billion between now and 2040. This report outlines key actions needed to unlock finance and investment in offshore wind power and energy efficiency in public buildings in the Philippines. It also provides a comprehensive overview of the progress to date and the challenges to mobilise near-term finance in those sectors, assist the Philippines transition towards a low-carbon economy, and achieve broader development goals.

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