

**GWEC FINANCE PAPER**

# Innovative Finance Mechanisms for Southeast Asia's Offshore Wind Take-off

*A Study on Unlocking  
Blended Finance*

NOVEMBER 2025



**The Global Wind Energy Council (GWEC)** is the global trade association for the wind power industry, with over 1,500 members responsible for 70% of the world's wind capacity. Our members include major turbine manufacturers, energy companies, developers, and technology providers. GWEC advocates for the wind industry globally, collaborating with organizations like the IRENA, IEA, local associations and development banks to help governments and policymakers unlock wind energy's full potential.

GWEC's mission is to ensure that wind power fulfills its role as one of the key technology solutions to today's energy and climate challenges, forming the backbone of a new clean energy system and enabling trillions of dollars of investment while providing substantial economic and social benefits to host countries.

### Copyright © November 2025

This document contains forward-looking statements. These statements are based on current views, expectations, assumptions and information of the Authors. The Authors and their employees and representatives do not guarantee the accuracy of the data or conclusions of this work. They are not responsible for any adverse effects, loss or damage in any way resulting from this work.

### Permissions and Usage

This work is subject to copyright. Its content, including text and graphics, may be reproduced in part for non-commercial purposes, with full attribution.

### Attribution

Innovative Finance Mechanisms for Southeast Asia's Offshore Wind Take-off: A Study on Unlocking Blended Finance. 2025.

### Lead Authors

The lead authors of this report were Farzana Hoque, Karan Shah, and Irene Kyla Boholano from the Climate Smart Ventures (CSV) team. Lawrence Ang, Matthew A. Carpio, Ivan Mark C. Galura, and Alvin Prado from CSV provided guidance and essential research support.



Climate Smart Ventures (CSV) is a specialized advisory firm advancing the energy transition in Asia. Established in 2020, CSV has an ambitious goal of catalyzing the decarbonization of 2 GW of fossil-fuelled power to renewable energy (RE) by year-end 2025 and aspires to be a driving force for ESG transformation and scaling Asia's energy transition in a just and commercially viable manner. CSV's expertise and projects span coal to clean utility-level energy transition, industrial decarbonization, grid transformation, mobilizing transition finance, and government-level policy recommendations.

### Editors and Acknowledgements

This report was edited by the Global Wind Energy Council team: Janice Cheong, Mark Hutchinson, Liming Qiao, Ann Margret Francisco, Thang Vinh Bui, Juman Kim, Takeshi Matsuki.

# Contents

<b>Acknowledgement</b>	<b>3</b>
<b>Foreword</b>	<b>5</b>
<b>Executive Summary</b>	<b>6</b>
<b>1. Offshore Wind and the Asia Pacific – An Overview on Offshore Wind and the Key Features of a Bankable Offshore Wind Project</b>	<b>10</b>
Global Offshore Wind: A Brief Overview	10
The Bankability Checklist: The Key Features of a Bankable OFW Project	12
Defining Blended Finance	13
<b>2. Global Offshore Wind - Lessons Learned from International Offshore Wind Projects</b>	<b>15</b>
OFW Cases with Minimal or No Use of Blended Finance	15
OFW Cases with Blended Finance	17
Poland's Baltic Power Offshore Wind Farm (1.14GW)	18
<b>3. The State of Offshore Wind in the Philippines and Vietnam</b>	<b>22</b>
The Status of Offshore Wind	24
Institutional Stakeholders and their Roles in Offshore Wind	26
Challenges & Opportunities	27
<b>4. The Role of Blended Finance in Unlocking Bankability for Offshore Wind in the Philippines and Vietnam</b>	<b>33</b>
Development Finance Institutions and Multilateral Development Banks	33
Multilateral Climate Funds	35
<b>5. Designing a Capital Stack to Catalyse and Scale Offshore Wind Investment</b>	<b>37</b>
Introduction and Methodology: Framework for Analysing the Impact of Blended Finance on Offshore Wind Projects	38
Capital Stack Architecture and Financing Instruments	39
Scenario Development	41
Model Results and Discussion	43
<b>6. Conclusions and Recommendations</b>	<b>49</b>
Appendix A: Expanded Overview of Offshore Wind Cases with Minimal or No Use of Blended Finance	53
Appendix B: Expanded Overview of Offshore Wind Cases with Blended Finance	56
Appendix C: Stakeholders in Offshore Wind in the Philippines and Vietnam	59
Appendix D: Mapping on DFI/MDB Products that Have Been Extended to Offshore Wind	62
Appendix E: Illustrative Project Timeline for an Archetype 500 MW Offshore Wind Project	64
Appendix F: Key Assumptions Underpinning the Financial Model Results	65

# Foreword



**Rebecca Williams**  
Deputy CEO  
Global Wind Energy Council

The Asia Pacific region's holds significant offshore wind (OFW) potential, particular in emerging markets and developing economies (EMDE's) such as the Philippines and Vietnam. *Innovative Finance Mechanisms for Southeast Asia's Offshore Wind Take-off: A Study on Unlocking Blended Finance*, developed by the Global Wind Energy Council, identified key challenges and opportunities to unlock blended finance for OFW in the region and provides a practical, actionable roadmap for scaling investments.

Our analysis shows that when projects are commercially viable and risks are effectively managed, both domestic and international capital is ready to flow. Where gaps exist, innovative financing solutions—including blended finance, guarantees, concessional loans, and risk-sharing mechanisms—can unlock capital, lower costs, and accelerate project delivery. By combining strong macro-level enablers, such as infrastructure and clear policy frameworks, with deal-level features like long-term PPAs and credible developers, offshore wind can flourish as a highly attractive and viable investment in emerging markets.

This report provides a tailored strategy for financing gigawatt-scale offshore wind projects in EMDE's in APAC, considering local risks, resources and institutional realities. This offers a replicable framework for other regions with similar market characteristics. Public and private concessional finance is essential for moving projects from planning to delivery, reducing early-stage costs, improving affordability, lowering consumer tariffs, and expanding energy access—critical outcomes for EMDEs.

Ultimately, GWEC believes that offshore wind, supported by innovative finance mechanisms and multi-stakeholder cooperation, can drive energy security, accelerate renewable energy adoption, and create economic opportunities—turning Southeast Asia's vast potential into reality. To fully realize this opportunity, institutional support must be stepped up, providing solutions to de-risk projects and unlock scalable investment. This report offers a clear roadmap and a call to action for global partners to collaborate, invest, and accelerate the offshore wind transition in the region.

# Executive Summary

This report identifies key challenges and opportunities to unlock blended finance for offshore wind (OFW) in the Asia-Pacific (APAC) region, with a particular focus on the Philippines and Vietnam. However, the findings should also be applicable globally to other emerging economies. The findings are based on comprehensive desk research and consultations with various industry stakeholders, including development finance institutions (DFIs), multilateral development banks (MDBs), export credit agencies (ECAs), and commercial financial institutions.

This report develops a quantified capital stack to a model 500 MW offshore wind project in the APAC region, providing a replicable framework for future large-scale investments. **The analysis demonstrates that when offshore wind projects are bankable and risks are effectively mitigated and shared, both domestic and international capital can be mobilized for financing such projects. Where market or deal-level gaps exist, innovative instruments, such as blended finance, guarantees and other mechanisms from development finance institutions, multilateral development banks, and export credit agencies can play a pivotal role in bridging gaps and unlocking local and international capital.** By modelling a range of scenarios, the report quantifies the impact of blended finance on cost of capital, returns, levelized cost of energy (LCOE), and risk, offering a clear, actionable roadmap to maximize financial viability and accelerate offshore wind deployment across the APAC region.

Drawing on the capital stack analysis, case studies, stakeholder insights, and additional research, this report outlines targeted recommendations to unlock finance for OFW projects for key stakeholders, particularly DFIs/MDBs, ECAs, commercial financial institutions, and policymakers and regulators.

## Key Takeaways from the Report

- When offshore wind projects are considered bankable, both domestic and international partners are poised to invest in OFW projects. The key features of a bankable OFW project can be grouped into two categories: macro-level features and deal-level features.
  - ◇ **Macro-level features** include planned or completed physical infrastructure required for OFW (ports, grids, etc.), a developed supply chain, a clear and transparent national policy on offshore wind, and a viable market mechanism that enables competitive price determination.
  - ◇ **Deal-level features** encompass financial and non-financial terms. Financial terms include clear off-take arrangements, long-term power purchase agreements (PPA), competitive tariffs, commercial capital (debt and/or equity), robust risk-sharing mechanisms, and currency indexation, as appropriate. Non-financial terms include having a developer with good track record, creditworthy offtaker, and features like step-in rights for banks.

In the absence of these features, technical assistance and innovative finance instruments can step in to bridge these gaps.

- Most OFW wind capacity to date has been deployed in advanced markets, where DFI/MDB financing has played a limited role. In contrast, such support will be far more critical in emerging markets such as the Philippines and Vietnam. There is a need for tailored strategies in the Philippines and Vietnam, based on their specific contexts, resources, needs, and available DFI/MDB products.
- There is a wide range of DFI/MDB financing instruments, such as concessional loans and guarantees, that are available for renewable energy as a whole but are rarely targeted towards OFW specifically. DFI/MDB engagement in OFW finance is currently limited and sparse, which presents a challenge to scaling blended finance in the sector.
- Limited DFI/MDB engagement in OFW can be attributed to several challenges in financing OFW. These challenges can be grouped at the macro-level and deal-level:
  - ◇ **Macro-level challenges** include policy and regulatory uncertainty and infrastructure, grid, and supply chain constraints.
  - ◇ **Deal-level challenges** include large project size and capital requirements, local currency constraints, macroeconomic risks, first mover hesitation, the need for bankable PPAs with clear risk allocation, and the limited availability of DFI/MDB concessional finance, as well as the competing priorities and opportunities that they have.
- The quantified capital stack for a model 500MW OFW project, and its accompanying analysis, demonstrates that a fully blended financing mix combining commercial debt, concessional loans, export credit guarantees, and grants delivers the best results for offshore wind projects in both the Philippines and Vietnam. By optimizing the capital stack, the weighted average cost of capital can drop from 11.72% to 6.54% in the Philippines and from 12.23% to 6.82% in Vietnam across different scenarios based on the commercial viability of a project and the application of blended finance at varying degrees. This enables tariffs to decrease from 16.20 PHP/kWh (0.28 USD/kWh) to 10.50 PHP/kWh (0.18 USD/kWh) in Philippines and from 4,579.60 VND/kWh (0.17 USD/kWh) to 2,931.45 VND/kWh (0.11 USD/kWh) in Vietnam for fixed-bottom OFW, respectively, while the debt-service coverage ratio (DSCR) improves as well—creating a model for affordable project delivery, strong lender confidence, and scaling OFW investments in emerging markets.
- The following are the key recommendations for unlocking and scaling finance and blended finance for OFW in the Philippines and Vietnam, based on case studies, interviews, desk research, and capital stack modelling. While the report identifies several additional opportunities for stakeholders, these represent the most critical levers for impact.

**Governments:**

- **Create bankable offtake and pricing frameworks**
  - ◇ **Establish a Clear Offtake Framework:** Define a transparent and bankable offtake mechanism that ensures revenue predictability for developers and financiers.
  - ◇ **Formalize Revenue Frameworks through Viable PPAs:** Explore viable PPA mechanisms to help provide revenue certainty. This approach can help de-risk early-stage projects and crowd in private investment, particularly where market maturity or offtaker creditworthiness is still evolving.
  - ◇ **Consider Adopting Contracts for Difference (CfD):** Consider implementing CfD models, as used in the UK and Poland, to stabilize electricity prices for off-takers and reduce revenue risk for developers and financiers, improving project bankability.
  - ◇ **Update Frameworks as the Market Evolves:** Regularly assess and update frameworks to adapt to external market conditions and technology changes.

**Developers:**

- **Collaborate to shape policy**
  - ◇ Collaborate with policymakers to shape policies that realistically balances cost, risk and market needs.
  - ◇ Share project experience and appropriate data to inform tariff benchmarking and design of next-generation auction packages.
- **Innovate project structuring and partnerships**
  - ◇ Develop consortium structures to pool expertise and diversify project risks among commercial and development partners.

**Development Finance Institutions and Multilateral Development Banks:**

- **Provide concessional debt for first mover OFW projects**
  - ◇ Analysis from research and the capital stack modelling demonstrated that an essential form of support from DFIs/MDBs to unlock financing for OFW in the Philippines and Vietnam is the provision of concessional (below market) debt<sup>1</sup> to enhance a project's financial viability. Even when DFIs/MDBs provide loans at market terms, their involvement remains highly valuable due to the "halo effect," or other financial institutions interested in participating because of the due diligence and credibility provided by DFIs/MDBs.
- **Provide concessional funding for infrastructure**
  - ◇ DFIs/MDBs should extend concessional funding to support essential OFW infrastructure, namely port and grid upgrades and development. This provides catalytic value, contributing to industry-wide impact beyond just one OFW project.

<sup>1</sup> This report uses Convergence's definition of concessional capital, "Public or philanthropic investors provide funds on below-market terms within the capital structure to lower the overall cost of capital or to provide an additional layer of protection to private investors (referred to as concessional capital..." <https://www.convergence.finance/blended-finance>

- **Expand technical assistance and capacity-building**

- ◇ DFIs/MDBs also have an opportunity to double down on the technical assistance they provide for macro-level gaps. This would further help governments utilize MDBs' technical assistance programmes to guide policy development, PPA design, and analytical work. Conducting technical studies to help governments plan for new or upgraded infrastructure, such as ports and grids, is also valuable.

#### **Multilateral Climate Funds:**

- **Provide first loss capital and other concessional funding**

- ◇ Multilateral climate funds such as the Green Climate Fund, Global Environment Facility, and Climate Investment Funds should expand the use of blended finance instruments, such as grants, concessional funding, and first-loss capital, to catalyse investment in OFW as an important contributor to the growth of renewable energy. This can contribute to the availability of concessional capital deployed through DFIs/MDBs and other investment vehicles.

#### **Export Credit Agencies:**

- **Provide credit guarantees as part of a consortium**

- ◇ ECAs should provide credit guarantees as part of a consortium to de-risk OFW projects and crowd in private capital at scale. Case studies from Taiwan's Hai Long and Poland's Baltic Power projects show that ECA-backed guarantees improve debt affordability and help maintain high debt service coverage ratios. By covering up to 90–95% of project risks, ECA consortia can enable longer loan tenors, reduce perceived country and commercial risks, and attract risk-averse lenders.

- **Facilitate cross-border partnerships**

- ◇ Support parent country exports of turbines, cables, and other supply chain components through ECA-backed loans and insurance, strengthening bilateral ties and technology transfer.



# 1. Offshore Wind and the Asia Pacific

## An Overview on Offshore Wind and the Key Features of a Bankable Offshore Wind Project

This section provides a brief overview of offshore wind globally, defines concepts used in this report, and outlines the key features of a bankable offshore wind project via a tabulated checklist.

### KEY HIGHLIGHTS

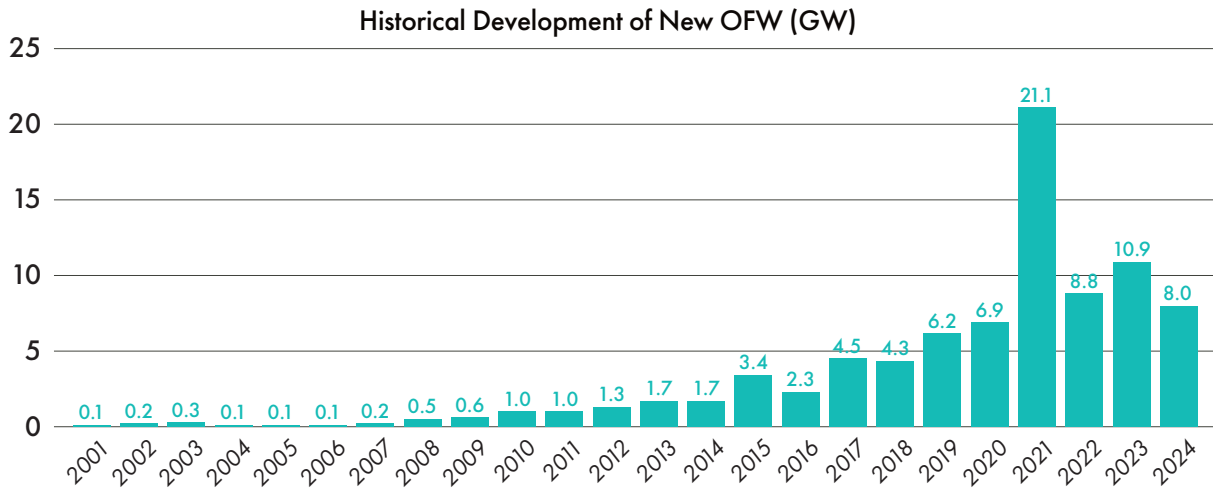
- Global offshore wind capacity has made strides over the past two decades, increasing from 2.5 gigawatts (GW) in 2010 to 64 GW in 2022, reaching 83 GW by the end of 2024.
- The Asia Pacific (APAC) has particular drive and potential for offshore wind. As of year-end 2024, 98.9% of global OFW capacity came from APAC and Europe, with APAC being the largest market, and China accounting for 90% of APAC.
- The bankability and overall project success of an offshore wind project is dependent on the presence of several key features, divided into macro-level features and deal-level features.
- This report suggests that if offshore wind projects are bankable, both domestic and international partners will be encouraged to participate. Where gaps persist, innovative finance – particularly from DFIs/MDBs and ECAs, can bridge them.

## Global Offshore Wind: A Brief Overview

Global offshore wind capacity has made strides over the past two decades, increasing from 2.5 GW in 2010 to 64 GW in 2022, reaching 83 GW by the end of 2024. The sector saw record growth in 2021, with 21.1 GW of new capacity installed. While momentum has moderated due to various challenges, the focus remains on navigating a complex environment. Financial and macroeconomic factors such as rising commodity prices, increased labour and logistics costs, and higher costs of capital driven by interest rate hikes and risk premiums have placed significant pressures on project economics. These pressures have led to stalled developments and undersubscribed auctions. Annual additions were 8.8 GW in 2022, increased to 10.9 GW in 2023, and adjusted to 8 GW in 2024, with a promising pipeline shaping up for 2025 that points to stronger growth ahead.

**Figure 1.**

Historical Development of New OFW (GW)



Source: Global Wind Energy Council

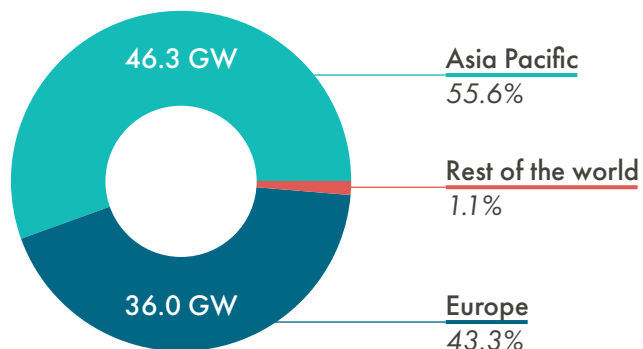
Estimates from the International Renewable Energy Agency (IRENA) suggest that 2 terawatts (TW) of offshore wind will be needed globally by 2050 to deliver the energy transition and limit temperature rise to well below 1.5 degrees Celsius.<sup>2</sup>

Moreover, analysis from the World Bank of offshore wind technical potential across 75 emerging markets estimates a combined wind resource potential of +16.2 TW, including more than 5.5 TW of fixed-bottom potential and 10.7 TW of floating potential.<sup>3</sup>

APAC has particular drive and potential for OFW. As of year-end 2024, 98.9% of global OFW capacity came from APAC and Europe, with APAC being the largest market. 46.3 GW of OFW capacity was in operation in APAC, and 36 GW in Europe. China led total installed capacity in 2024 with 4.0 GW added, bringing their total operating capacity to 41.8 GW. Three other markets in Asia commissioned new OFW capacity in 2024: Taiwan 933 MW, Japan 112 MW, and South Korea 100 MW.<sup>4</sup>

**Figure 2.**

Operational Global OFW Capacity, 2024



Source: Global Wind Energy Council

<sup>2</sup> World Bank, The Role of Concessional Climate Finance in Accelerating the Deployment of Offshore Wind in Emerging Markets (2023), pviii <https://documents1.worldbank.org/curated/en/099083123080513936/pdf/P1700900c9a8350770ae980d59d4a9edce0.pdf>.

<sup>3</sup> Ibid, 5.

<sup>4</sup> Global Wind Energy Council, Global Offshore Wind Report 2025, p47.

## The Bankability Checklist: The Key Features of a Bankable OFW Project

Based on the report's research, case studies, and interviews, the table below outlines key features of a bankable offshore wind project.

**Table 1.**

The Bankability Checklist: Key Features of a Bankable Offshore Wind Project

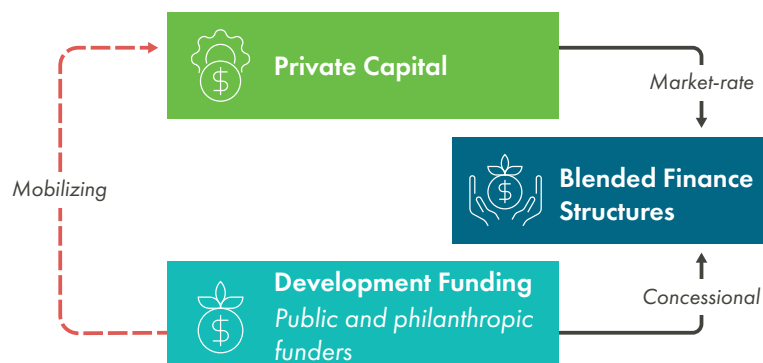
Criteria	Description
<b>Macro-level Features</b>	
Planned or Completed Infrastructure (ports, grids, etc.)	Readiness and capacity of existing ports and grids required to support the construction, operation, and maintenance of the wind farm.
Developed Local Supply Chain	Availability of local suppliers, specialized vessels, and skilled labour for project execution and maintenance.
Clear and Transparent National Policy on OFW	Stable and predictable regulatory and legal environment.
Market Mechanism that Enables Competitive Price Determination	The price of the electricity generated by the wind farm is established in a fair, efficient, and economically viable manner.
<b>Deal-level Features</b>	
<b>Financial Terms</b>	
Clear Offtake Arrangement	A defined and reliable mechanism for selling the generated electricity.
Long-term PPA	Long-term contracts with creditworthy off-takers to ensure sustained investor confidence via revenue predictability.
Competitive Tariff	Indicates that the project is capable of delivering power at a price that is attractive to off-takers and competitive within the energy market.
Commercial Capital (Debt and/or Equity)	Significant financial investment from private, profit-seeking entities (e.g., commercial banks, private equity funds, etc.).
Robust Risk-sharing Mechanism	A set of contractual arrangements and financial instruments designed to allocate and mitigate various project risks among different stakeholders.
Currency Indexation	Adjusting the key financial parameter in the project's financial model to account for fluctuations in exchange rates, particularly crucial for developing economies with volatile or non-tradable exchange rates.
<b>Non-Financial Terms</b>	
Credible Developer	A developer who possesses a strong track record of successfully developing and delivering similar energy projects, instilling investor confidence.
Creditworthy Offtaker	Typically a utility, government agency, or large corporation that has robust financial and regulatory standing to enter into a long-term agreement or PPA to purchase electricity generated by the OFW project.
Step-in Rights	A contractual provision allowing lenders, under specific circumstances (i.e., material default, failure to cure a default, etc.) to "step in" and take control of the project's management, operations, or ownership.

An offshore wind project is considered bankable when all key features are met. If not, innovative financial products can play a vital role in filling gaps and enabling projects to succeed (see Tables 2 and 3 for examples).

## Defining Blended Finance

This section provides a brief overview of the definition of blended finance. The report adopts the definition of blended finance as “the use of catalytic capital from public or philanthropic sources to increase private sector investment in sustainable development.”<sup>5</sup>

**Figure 3.**  
Blended Finance Explained



Source: Convergence

Blended finance structures typically range from the following:<sup>6</sup>

1. **Lowering Cost of Capital:** Public or philanthropic investors provide funds on below-market terms within the capital structure to lower the overall cost of capital or to provide an additional layer of protection to private investors, referred to as concessional capital.<sup>7</sup> First-loss capital is a specific form of concessional capital that is structured to absorb the earliest losses in a transaction or portfolio.<sup>8</sup>
2. **Credit Support:** Public or philanthropic investors provide credit enhancement through guarantees or insurance on below-market terms, referred to as guarantee / risk insurance.
3. **Technical Assistance.** A transaction is associated with a grant-funded technical assistance facility that can be utilized pre- or post-investment to strengthen commercial viability and developmental impact, referred to as technical assistance funds.
4. **Project Design and Preparation:** Transaction design or preparation is grant funded (including project preparation or design-stage grants), referred to as design-stage or project design and development grants.

In emerging markets like the Philippines and Vietnam, blended finance relies on concessional<sup>9</sup> specifically to address market failures that prevent private capital from participating at the scale and terms required. Market failure arises when commercial lenders and investors are deterred by high perceived and actual risks such as regulatory uncertainty, currency volatility, lack of long-term revenue certainty, weak off-taker creditworthiness or underdeveloped local debt markets. As a result, projects face prohibitively high financing costs or cannot access long-tenor debt at all. In these cases, the private sector alone cannot deliver affordable tariffs or bankable projects.

<sup>5</sup> Convergence, Blended Finance, accessed June 17, 2025

<https://www.convergence.finance/blended-finance>

<sup>6</sup> Ibid.

<sup>7</sup> Convergence, Blended Finance, accessed June 17, 2025

<https://www.convergence.finance/blended-finance>

<sup>8</sup> Definition crafted from information from Convergence, *Blended Finance*, <https://www.convergence.finance/blended-finance> and the Global Impact Investing Network, *Catalytic First-Loss Capital*,

<https://thegiin.org/publication/research/catalytic-first-loss-capital/>

<sup>9</sup> Concessional finance, one of the common components of blended finance, is defined by the World Bank as below market rate finance provided by major financial institutions, such as development banks and multilateral funds, to developing countries to accelerate development objectives.

Source: World Bank, *Climate Explorer: Concessional Finance*, accessed July 25, 2025

Concessional finance is warranted only when clear gaps exist, for example, when viable projects cannot proceed due to high-risk premiums, a lack of suitable credit enhancement, or insufficient financial market depth. The criteria for deploying concessional support thus include demonstrable evidence that private capital is either unavailable or only available at cost levels that undermine project affordability. By accepting greater risks or offering below-market rates, concessional funds and guarantees directly correct this market failure lowering the overall cost of capital, mitigating risk for commercial lenders, and enabling affordable, policy-aligned power pricing. In this way, blended finance becomes a targeted, market-corrective intervention that is justified not as a subsidy, but as a necessary catalyst for enabling investments which otherwise would not materialize under purely commercial conditions.

Concessional finance can be either public or private concessional finance, differentiated by their primary recipient and implicit objective.<sup>10</sup> Public concessional finance is typically provided to governments of developing countries, public entities, or projects with public good characteristics (e.g., infrastructure). It provides direct aid and assistance driven by governmental mandates. Meanwhile private concessional finance is directed towards private sector projects, businesses, or initiatives that contribute to development goals but might struggle to secure purely commercial financing. It is meant to serve as a catalyst, using favourable terms to mobilize or “de-risk” private capital.

In the context of this report, public concessional finance is the financing required by governments to prepare the macro environment (ports, grids, etc.) for a bankable offshore wind project. This is because such finance is often directed to public entities, such as national utilities, transmission companies, or energy regulators. In contrast, private concessional finance supports project development or deal-level activities, with the objective of crowding in additional project financing.

A 2023 World Bank report highlighted the challenges of kickstarting OFW and the value of concessional finance for accelerating its deployment in emerging markets such as the Philippines and Vietnam.<sup>11</sup>

*“Despite the [OFW] industry’s cost reductions, the first projects in any new market will come at a cost premium as developers, investors, and lenders factor in a wide range of uncertainties, higher costs, and risks. These factors include different physical conditions, uncertain regulatory regimes, a lack of clarity on long-term market potential, inexperienced local supply chains, and commercial risks such as off-taker creditworthiness or currency convertibility. The majority of these issues can eventually be addressed through the experience and confidence gained from large-scale deployment.”<sup>12</sup>*

– The World Bank

Governments in emerging markets can find it hard to justify this higher initial cost of OFW, even if they are aware of the rapid cost declines that will occur as the market matures in the country. This has been a pattern consistently seen in all established OFW markets.

The World Bank argues that using concessional finance to reduce the initial cost premium is a “high impact opportunity” to help emerging market governments commit to OFW and fast-track country-level decarbonization.<sup>13</sup> Providing financial support to reduce tariffs for early projects can be tied to robust offshore wind policies designed to stimulate the investment needed to drive down costs for subsequent projects and foster the growth of a local industry.

<sup>10</sup> Open Library on Green Economy, *What is Concessional Finance?*, accessed July 25, 2025, <https://openlibrary.substack.com/p/what-is-concessional-finance>.

<sup>11</sup> See: World Bank, *The Role of Concessional Climate Finance in Accelerating the Deployment of Offshore Wind in Emerging Markets* (2023)

<sup>12</sup> *Ibid.*, viii.

<sup>13</sup> *Ibid.*, vii.

2.

# Global Offshore Wind

## Lessons Learned from International OFW Projects

This section examines case studies on international offshore wind projects, both with and without blended finance. Specifically, it looks into four OFW projects, namely: South Korea's Jeonnam 1 Project, the Netherlands' Borssele III and IV, Taiwan's Hai Long Offshore Wind Project, and Poland's Baltic Power Offshore Wind Farm.

### KEY HIGHLIGHTS

- Projects without blended finance, such as South Korea's Jeonnam 1 and the Netherlands' Borssele III & IV, demonstrate successful financing through a combination of international partnerships and commercial financing.
- Projects with blended finance, such as Taiwan's Hai Long Offshore Wind Project and Poland's Baltic Power, show how innovative finance mechanisms such as concessional loans and ECA-backed facilities can bridge financing gaps and attract diverse capital.

## OFW Cases with Minimal or No Use of Blended Finance

China dominates the global OFW market with large-scale deployment and strong domestic financing, with limited participation from DFIs/MDBs and ECAs. Japan aims for significant OFW capacity by 2030 and beyond, with a developing market supported by improving regulatory frameworks. ECA support within Japan has been limited, and by mandate, Japan does not qualify for DFI/MDB support as a developed country.

South Korea had only 355 MW of operational offshore wind capacity, as of 2025, despite a 2030 target of 14.3 GW. Regulatory hurdles in permitting and market design have hindered progress, leaving most projects in early development. While international developers have entered the market through joint ventures, ECA participation remains limited. Like Japan, South Korea does not qualify for DFI/MDB support by mandate.

South Korea's first non-recourse, project-financed offshore wind farm, Jeonnam 1 (99MW), with total project costs of around US\$470 million, started operations in 2025. The debt financing was secured from a consortium of nine commercial banks, with Sumitomo Mitsui Banking Corporation (SMBC) acting as the mandated lead arranger, documentation bank, and deal-contingent hedge provider. Equity investments were provided by offshore wind developers SK E&S and Copenhagen Infrastructure Partners (CIP), through its development platform Copenhagen Offshore Partners (COP). Along with the 800 MW Jeonnam 2 and 3 projects, these projects highlight the role of international partnerships and commercial financing in advancing Korea's offshore wind sector and energy transition.

In the Netherlands, a major European OFW market, projects do not rely on DFI/ MDB and ECA financing. The Borssele III & IV project (731.5 MW) serves as an example of a successful project that was supported by a government subsidy scheme and commercial lending. By securing a competitive 15-year government subsidy through the SDE+ scheme, and then transitioning to merchant sales, the project successfully attracted a diverse pool of domestic and international commercial lenders. The SDE+ scheme was launched in 2011 and designed to support the development of renewable energy projects. It provided a feed-in premium<sup>14</sup> subsidy that covered the difference between wholesale market prices of electricity and the cost price of electricity from renewable sources.<sup>15</sup> The SDE+ has since been replaced by a revised version.

Debt financing was provided by a consortium of twelve commercial banks, while equity contributions came from a group of four developers and an institutional investor. This approach highlights that significant private and commercial finance can be mobilized with targeted government support, providing a viable blueprint for emerging markets like Vietnam and the Philippines to develop their offshore wind sectors.

Details of these country and project snapshots are expanded upon in Appendix A.

<sup>14</sup> A feed-in premium is "...a type of support scheme that provides an additional payment on top of the market price for electricity. Unlike FiTs, which guarantee a fixed payment, FiPs allow renewable energy producers to sell their electricity on the open market and receive a premium over the market price." Source: Synerics, Electricity Market Concepts: Feed-in Premiums, <https://synerics.io/blog/144/electricity-market-concepts-feed-in-premiums>, October 8, 2024.

<sup>15</sup> International Energy Agency, Feed-in Premium Programme SDE+ (Stimulerend Duurzame Energie +), July 19, 2018, <https://www.iea.org/policies/5012-feed-in-premium-programme-sde-stimulerend-duurzame-energie>.



## OFW Cases with Blended Finance

### Taiwan's Hai Long Offshore Wind Project (1.22 GW)

The Hai Long Offshore Wind project employs a multi-tranche financing structure comprising a market-rate loan from the Japan Bank for International Cooperation (JBIC), ECA-backed facilities, and commercial equity and debt, each with distinct risk, tenor, and pricing profiles, coordinated to fully fund the project and mitigate investment risks. Strong offtake agreements and blended financing models in Taiwan have enabled large-scale offshore wind development, offering a replicable strategy for emerging markets such as Vietnam and Philippines.

Table 2 is an evaluation of the project against the Bankability Checklist.

**Table 2.**  
Taiwan Hai Long Offshore Wind Project's Bankability Checklist

Criteria	Yes/No	Remarks
<b>Macro Features</b>		
Preparedness of Infrastructure (ports, grids, etc.)	Yes	Financed by the Taiwan International Ports Corporation.
Developed Local Supply Chain	Yes	Initially driven by local content requirements (LCRs), which mandated developers to meet specific localization targets. This policy ended at year-end 2024.
Clear and Transparent National Policy on OFW	Yes	<i>Taiwan's Pathway to Net Zero Emissions in 2050</i> includes targets to reach 13.1 GW by 2030 and 40-55 GW by 2050. OFW is a key strategy of the plan, with a focus on policy promotion, industrial development, technology development, and local talent cultivation.
Market Mechanism that Enables Competitive Price Determination	Yes	Used feed-in tariff (FiT) for first projects, and then competitive bidding.
<b>Deal-level Features</b>		
<b>Financial Terms</b>		
Clear Off-take Arrangement	Yes	Offtake agreements with Taiwan Power Company (Taipower), a state-owned energy company, and with a corporate.
Long-term PPA	Yes	Hai Long 2A has a 20-year PPA with Taipower under a FiT, and Hai Long 2B and 3 benefits from a 30-year Corporate Power Purchase Agreement (CPPA) with an investment grade counterparty.
Competitive Tariff	Yes	After the initial FiT, used competitive bidding.
Commercial Capital (Debt and/or Equity)	Yes	Debt financing was provided by a consortium of 14 commercial banks, while equity contributions came from two developers. JBIC also provided a market-rate loan.
Robust Risk-sharing Mechanism	Yes	Credit guarantees provided by ECAs. JBIC also provided a guarantee.
Currency Indexation	Yes	Foreign currency hedges provided by Credit Agricole CIB (Corporate and Investment Bank).
<b>Non-Financial Terms</b>		
Credible Developer	Yes	Developers include Canada's Northland Power, Malaysia's Gentari International, and Japan's Mitsui & Co.
Creditworthy Offtaker	Yes	Offtakers are the state-owned distribution company Taipower and an investment grade corporate.
Step-in Rights	Yes	While no source explicitly confirms step-in rights, it is assumed they are included based on the banking participants and their established project finance practices for large-scale offshore wind developments.

Based on this evaluation, the Taiwan Hai Long OFW Project was able to become bankable with the support of innovative financial instruments, including a loan and guarantee from JBIC, credit guarantees from multiple ECAs, and foreign currency exchange hedging from Credit Agricole CIB. While the loan from JBIC was not described as below-market rate, JBIC's involvement is still seen as highly valuable due to the "halo effect," or other financial institutions interested in participating because of the due diligence and credibility provided by DFIs/MDBs.

The following are some of the challenges faced by the Hai Long OFW Project in Taiwan, and the rationale for its ability to proceed, nonetheless.

- Strict local content requirements and supply chain bottlenecks increased complexity, costs, and risk of delays.
- The project faced technical and environmental challenges as the site is exposed to deep and seismic waters, frequent typhoons, and required innovative solutions for foundation and jacket structure installation. Adverse ground and weather conditions necessitated flexible engineering and design.
- Cathay United Bank's withdrawal from the project's loan syndicate temporarily threatened delays, as it disrupted established local lender coordination and created uncertainty in finalizing financial close.
- The project achieved financial close in late 2023 after navigating sector-wide challenges such as inflation, supply chain pressures, and the need for long-tenor, multi-currency financing against a backdrop of wider industry financial caution following problems at other Taiwanese projects like Yunlin. The strong presence of export credit agencies and international banks was key to building confidence in the project, helping it overcome local banking uncertainties.

## Poland's Baltic Power Offshore Wind Farm (1.14GW)

Poland's first large-scale OFW project, Baltic Power (1.14 GW), demonstrates the nation's ambition to reach 5.9 GW of offshore wind by 2030 and up to 18 GW by 2040. Situated 23 km off the Baltic coast and costing €4.5 billion, the project is led by Orlen (51%) and Northland Power (49%), with construction commencing in 2024 and full operations planned for 2026. The project secured a 25-year inflation-indexed contract for difference (CfD), supporting stable revenues and facilitating financing. See Box 1 for information on CfDs. The financing attracted 25 global and local banks and ECAs, making Baltic Power a landmark model for future offshore wind projects in Poland, and possibly elsewhere.

The Baltic Power offshore wind project in Poland illustrates the critical importance of currency denomination in securing project bankability. Initially, the CfD was denominated in Polish zloty (PLN), which deterred investor interest due to a mismatch between the project's revenue currency and its cost base. Since major supply contracts and debt financing are typically denominated in euros, having revenues in PLN exposed the project to exchange rate volatility, which risked eroding returns and creating uncertainty in debt servicing. By switching to euro-denominated payments, the project aligned its revenue stream with costs and financing, reducing foreign exchange risk, enabling better hedging and indexation, and improving cash flow stability. This, in turn, enhanced investor confidence, broadened access to deeper euro financing markets, and significantly improved the project's bankability and financial viability.

## What is a Contract for Difference (CfD)?

A Contract for Difference (CfD) is a contract signed between an electricity generator and a state, which sets a strike price, usually by a competitive tender. Instead of offering a fixed price premium, the state guarantees the generator a minimum revenue when market prices fall below the strike price. CfDs can be distinguished as one-sided or two-sided.

- If the market price (usually the wholesale electricity price) falls below the strike price, the state pays the generator the difference. This is the case for both one-sided and two-sided CfDs.
- If the market price is above the strike price, the generator returns the difference to the state, but only in a two-sided CfD.

As such, the two-sided CfD distributes risk and profit between the state and the generator, while the one-sided CfD favours the generator to a greater extent. Poland's Baltic Power OFW has a two-sided CfD.

Sources: The Oxford Institute for Energy Studies and Kromann Reumert

Below is an evaluation of the Poland Baltic Power OFW project against the Bankability Checklist.

**Table 3.**

Poland's Baltic Power's Bankability Checklist

Criteria	Yes/No	Remarks
<b>Macro Features</b>		
Preparedness of Infrastructure (ports, grids, etc.)	Yes	Supported with financing from EU's "Connecting Europe Facility 2021-2027" via a grant.
Developed Local Supply Chain	Yes	Driven by the Polish Offshore Wind Sector Deal, setting targets for localization in OFW projects.
Clear and Transparent National Policy on OFW	Yes	Poland's Offshore Wind Act (effective as of 2021) establishes the legal support regime for offshore wind farms in Poland's Baltic Sea. The government aims to have 5.9 GW of OFW capacity by 2030 as part of its first phase of projects and up to 18 GW by 2040.
Market Mechanism that Enables Competitive Price Determination	Yes	The Baltic offshore wind projects in Poland have received CfDs through both administrative allocation and competitive auctions, depending on the phase and project maturity. In the first phase, the most advanced projects (such as Bałtyk 2 and 3, Baltic Power, and Baltica 2 and 3) received their CfDs directly via administrative decision, not through a competitive auction; this was available for up to 5.9 GW of capacity.

**Table 3 (continued)**

## Poland's Baltic Power's Bankability Checklist

Criteria	Yes/No	Remarks
<b>Deal-level Features</b>		
<b>Financial Terms</b>		
Clear Off-take Arrangement	Yes	The offtake arrangement is a long-term, government-backed CfD, offering investment-grade revenue stability.
Long-term PPA	No, but the CfD in effect serves a similar function.	Baltic Power has a long-term CfD as its power offtake arrangement. While this is not structured as a traditional PPA, the CfD serves a similar function by providing revenue certainty for the project.
Competitive Tariff		The Baltic offshore wind projects in Poland have received CfDs through both administrative allocation and auctions, depending on the phase and project maturity. In the first phase, the most advanced projects, including Baltic Power, received their CfDs directly via administrative decision, not through a competitive auction; this was available for up to 5.9 GW of capacity.
Commercial Capital (Debt and/or Equity)	Yes	Debt financing was provided by a consortium of over 20 commercial banks, while equity contributions came from two developers. The European Investment Bank (EIB) and European Bank for Reconstruction and Development (EBRD) provided multilateral financing, but this was not in the form of below-market debt.
Robust Risk-sharing Mechanism	Yes	Credit insurance and guarantees from ECAs.
Currency Indexation	Yes	Used Euro-pegged CfD.
<b>Non-Financial Terms</b>		
Credible Developer	Yes	Development is a joint venture project of two experienced companies: PKN ORLEN (Poland) and Northland Power (Canada).
Creditworthy Offtaker	Yes	The Polish government through a 25-year CfD mechanism administered by the Energy Regulatory Office (URE).
Step-in Rights	Yes	While no source explicitly confirms step-in rights, it is assumed they are included based on the banking participants and their established project finance practices for large-scale offshore wind developments.

Based on this evaluation, the Poland Baltic OFW Project was able to become bankable with the support of innovative financial instruments, including financing from MDBs, credit insurance and guarantees from ECAs, and using a Euro-pegged CfD. Although the MDB financing was not below-market rate, it still likely provided a "halo effect," giving confidence to other financial institutions to participate.

Challenges faced by the Poland Baltic OFW Project, and the rationale for its ability to proceed nonetheless, include the following:

- The project faced significant cost escalations and inflationary pressures, alongside supply chain volatility, which required sponsors to revise financial assumptions and secure additional funding. Despite these challenges, Baltic Power managed to maintain lender confidence and project stability through strong ECA support and robust contract structuring, with no reported lender withdrawals or syndicate breakdowns.

The case studies offer valuable lessons learned for APAC, specifically the Philippines and Vietnam.

- A relatively stable policy and regulatory environment in Taiwan, South Korea, Poland, and the Netherlands, for example through having clear, bankable offtake and pricing frameworks, has helped projects in those markets secure financing.
- Limited government subsidies alongside strong private and commercial finance, as seen with the Netherlands' Borssele III and IV, has shown to create a bankable model for offshore wind projects, a replicable approach well suited for Vietnam and the Philippines.
- Additionally, carefully evaluating currency denomination strategies is important, as shown in the Poland Baltic 1 project. Adopting strong currency-denominated (USD, Euro, etc.) offtake agreements and transparently managing currency risk can unlock access to international capital and reduce financing costs for OFW projects.
- Blended finance also played an important role. ECA consortiums can cover up to 90 - 95% of project risks, enabling longer loan tenors and attracting more cautious banks. Involvement from DFIs, while not below-market rate loans in these cases, likely enhanced the projects' financial viability through its "halo effect." JBIC also provided a guarantee for the Hai Long OFW project. Taiwan and Poland stand out as relevant examples where DFI/MDB and ECA blended finance support were effectively mobilized.
- Most offshore wind capacity to date has been deployed in advanced markets, where DFI/MDB financing has played a limited role. In contrast, such support will be far more critical in emerging markets.

At the same time, the country highlights and case studies show that each market and project adopts distinct financing approaches. This reinforces the need for tailored strategies for OFW developing in APAC, specifically the Philippines and Vietnam, based on their specific contexts, resources, and needs.

Further details about Taiwan's and Poland's OFW cases are expanded upon in Appendix B.



### 3.

# The State of Offshore Wind in the Philippines and Vietnam

This section outlines the current status of OFW development in the Philippines and Vietnam, the institutional stakeholders involved in OFW development, and country-specific challenges and opportunities they face.

## KEY HIGHLIGHTS

- Currently, neither the Philippines nor Vietnam has OFW installations underway, and therefore no financing transactions or blended finance mechanisms have been utilized. However, each has shown clear commitment to OFW development.
- The main stakeholder categories on OFW projects include policymakers and regulators, DFIs/ MDBs, ECAs, commercial financial institutions (both local and international), and insurance providers.
- In the Philippines, key stakeholders include the following, with potential institutions also added based on relevance:
  - ◇ Policy and regulators: Department of Energy (DOE), Department of Natural Resources (DENR), and the Energy Regulatory Commission (ERC)
  - ◇ Developers: Local and international private developers
  - ◇ ECAs: Export and Investment Fund of Denmark (EIFO), UK Export Finance, and SACE (Italy)
  - ◇ DFIs/MDBs: Asian Development Bank (ADB), World Bank and International Finance Corporation (IFC), and Asian Infrastructure Investment Bank (AIIB)
  - ◇ International commercial financial institutions include HSBC, DBS, MUFG, and Standard Chartered among other international financial institutions, while local ones would include BDO, BPI and Metrobank
  - ◇ Grid operator: The National Grid Corporation of the Philippines (NGCP)

## KEY HIGHLIGHTS (continued)

- In Vietnam, the key stakeholders include the following, with potential institutions also added based on relevance:
  - ◇ Policy and regulators: The Ministry of Industry and Trade (MOIT) and Ministry of Agriculture & Environment (MoAE)
  - ◇ Developers: State-owned entities, local private developers and international developers.
  - ◇ ECAs: EIFO, K-SURE/KEXIM (South Korea), UKEF, KFW, FMO, etc
  - ◇ DFIs/MDBs: ADB, World Bank and IFC, and JBIC among others
  - ◇ International commercial financial institutions include HSBC, Standard Chartered, and BNP Paribas among other international financial institutions, while local ones could include Vietcombank, VietinBank, and Techcombank
  - ◇ Grid operator: Vietnam Electricity (EVN), NSMO
- Challenges and opportunities of financing OFW are categorized into two levels – the macro-level and deal-level.
- Challenges
  - ◇ Macro-level challenges include policy and regulatory uncertainty and infrastructure, grid, and supply chain constraints.
  - ◇ Deal-level challenges include large project size and capital requirements, local currency constraints, macroeconomic risks, first mover hesitation, the need for bankable PPAs with clear and reasonable risk allocation, and the limited availability of private concessional finance from DFIs/MDBs as well as the competing priorities and opportunities that they have.
- Opportunities
  - ◇ There are a wide range of opportunities for DFIs/MDBs, ECAs, policymakers and regulators, and developers to unlock financing for OFW, outlined in this section. For instance, DFIs/MDBs can support deal structuring and offer concessional loans or mezzanine financing. ECAs can contribute through direct loans and/or guarantees. However, recognizing resource constraints, and informed by stakeholder feedback, case studies, and capital stack modelling, a more targeted set of recommendations is presented at the end of this report.

## The Status of Offshore Wind

Currently, neither the Philippines nor Vietnam has OFW installations underway, and therefore no financing transactions or blended finance mechanisms have been utilized. This section outlines each country's clear commitment to OFW development and the progress they have made so far. It also highlights key reasons why blended finance could play a beneficial role in supporting the governments' anticipated OFW initiatives.

### Philippines

In the Philippines, OFW is considered critical by the government to meet its fast growing domestic demand and to create a sustainable economy. As of April 2025, the Philippines Department of Energy (DOE) had approved 59 offshore wind energy service contracts (OWESCs) with a combined potential capacity of more than 51 GW.

In June 2025, the DOE launched its Fifth Green Energy Auction (GEA-5), marking the first auction including offshore wind. The tender offered 3,300 MW of fixed-bottom offshore wind capacity, with project delivery scheduled between 2028 and 2030.<sup>16</sup> GEA-5 is a key component of the DOE's broader roadmap to meet renewable energy goals under the Philippine Energy Plan 2025–2050 and the National Renewable Energy Program.

This is a promising development in terms of setting clear capacity targets and price expectations for the medium- to long-term. This would provide a stable revenue stream outlook for developers and create confidence from lenders to assess risk and mobilize funds specific to OFW. The government has also taken steps in finalizing key frameworks such as the Permitting Framework, Marine Spatial Planning, and Port Feasibility studies.

The ADB has supported the development of OFW in the Philippines. In 2021, ADB extended technical assistance (TA) support for the Philippines DOE and DENR to develop environmental regulations and environmental and social (E&S) safeguards for OFW.<sup>17</sup> The DENR has since issued guidelines for issuance of Environmental Compliance Certificates for OFW projects, and executed a Memorandum of Agreement with the DOE providing clarity on the grant of tenurial rights over offshore areas covered by OWESCs issued by the DOE.<sup>18</sup>

In February 2024, the ADB awarded TA support to the DOE to develop port infrastructure, specifically conducting a technical study to help the DOE develop a plan for upgrading select ports for the use of OFW. The TA includes three outputs: (1) prefeasibility study reports for OFW ports, (2) list of priority ports for OFW development, and (3) OFW port development time-bound action plan to enable OFW build out from 2028 onwards.<sup>19</sup>

The prefeasibility study report was released in June 2025 and identified two ports as the most suitable for full feasibility studies and future base ports for OFW development. These are Bulalacao (Oriental Mindoro) and San Carlos (Negros Occidental).<sup>20</sup> The PPA, however, will move forward with the following ports for priority developments: Port Of Currimao in Ilocos, Port of Mercedes in Camarines Norte and Port of Sta. Clara in Batangas. The DOE has continued to hold dialogues and engagements with the Philippine Ports Authority and other stakeholders to modernize the country's port facilities through port planning and alignment with the Green Port Program and the Port Development Plan.<sup>21</sup>



<sup>16</sup> "First Offshore Wind-Focused Auction Launched in Philippines" OffshoreWIND.biz, June 12, 2025, <https://www.offshorewind.biz/2025/06/12/first-offshore-wind-focused-auction-launched-in-philippines/>

<sup>17</sup> "PH boosts renewable energy, nature-based solutions initiatives to accelerate climate mitigation efforts," Department of Environment and Natural Resources, April 24, 2024, <https://denr.gov.ph/news-events/ph-boosts-renewable-energy-nature-based-solutions-initiatives-to-accelerate-climate-mitigation-efforts/>

<sup>18</sup> "Regional: Southeast Asia Energy Sector Development, Investment Planning and Capacity Building Facility, Phase 2" Asian Development Bank, <https://www.adb.org/projects/55140-001/main> and "DOE and DENR Sign Agreement to Accelerate Offshore Wind Energy Development," Department of Energy, October 6, 2024, <https://legacy.doe.gov.ph/press-releases/doe-and-denr-sign-agreement-accelerate-offshore-wind-energy-development>.

<sup>19</sup> Asian Development Bank, Technical Assistance Report: Republic of the Philippines: Supporting Offshore Wind Port Development Planning, February 2024, <https://www.adb.org/sites/default/files/project-documents/57280/57280-001-tar-en.pdf>.

<sup>20</sup> "Philippines advances offshore wind plans with port pre-feasibility study" WorldCargo News, July 16, 2025, <https://www.worldcargonews.com/ports-terminals/2025/07/philippines-advances-offshore-wind-plans-with-port-pre-feasibility-study/?gdpr=deny>.

<sup>21</sup> See "DOE and PPA strengthen partnership for OSW development with port infrastructure upgrades" Department of Energy, September 22, 2024, <https://legacy.doe.gov.ph/press-releases/doe-and-ppa-strengthen-partnership-osw-development-port-infrastructure-upgrades> and "PPA to Launch Offshore Wind Energy Projects with DOE," Department of Energy, September 25, 2024, <https://www.ppa.com.ph/node/18450>.



## Vietnam

Vietnam has a large potential pipeline but remains in the early stages of OFW development, with no operational OFW projects currently. The government announced its commitment to OFW development through its national Power Development Plan 8 (PDP 8), which initially targeted 6,000 MW of OFW installations by 2030. The Amended PDP 8 updates this target, envisioning OFW projects with a combined capacity of 6,000 MW to 17,032 MW coming online between 2030 and 2035, slightly extending beyond PDP 8's original timeframe.<sup>22</sup> International developers have to partner with an SOE (or a joint venture of an SOE & a local company) to develop OFW projects in Vietnam, in which the SOE (or a joint venture of an SOE & a local company) have to own at least 5% stake of any project.

Policy and regulatory frameworks for OFW in Vietnam are still relatively nascent and have faced challenges, but recent developments have been positive. The revised electricity law published in 2024 laid the ground for offshore wind development.

Additionally, a new Vietnamese government regulation — Decree No. 58/2025, issued earlier this year — sets out the framework for developing large-scale OFW projects and is expected to unlock new investment opportunities while bringing greater clarity to the market. The decree introduces several incentives for projects approved before January 2031, including: a three-year exemption from maritime area usage fees during the construction phase, a 50% reduction in those fees for the subsequent 12 years, and a government commitment to purchase at least 80% of a project's eligible output over a 15-year period, unless alternative power purchase agreements are arranged between buyers and sellers.<sup>23</sup>

<sup>22</sup> Vietnam's PDP8 gets a makeover, A&O Shearman, June 25, 2025, <https://www.aoshearman.com/en/insights/vietnams-pdp8-gets-a-makeover>.

<sup>23</sup> Pincet Masons, Vietnam energy decree creates offshore wind investment opportunities, March 16, 2025, <https://www.pincetmasons.com/out-law/news/vietnamese-energy-decree>

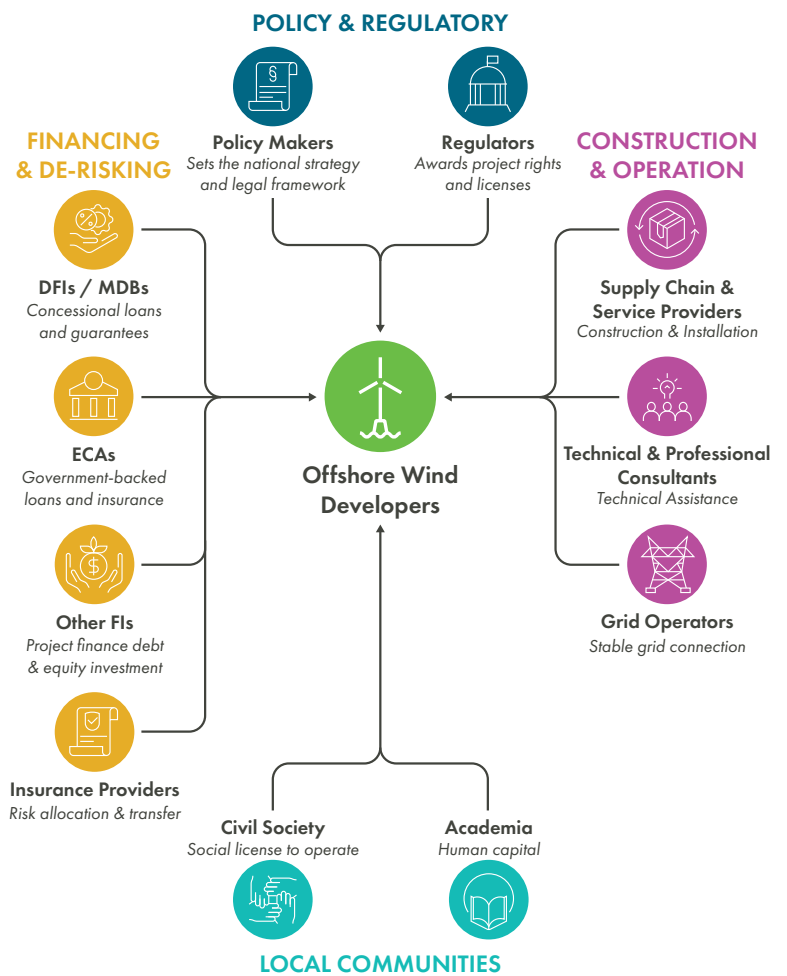


Nearshore Wind Farm  
Bac Lieu, Vietnam

## Institutional Stakeholders and their Roles in Offshore Wind

The main stakeholder categories for OFW project development include policymakers and regulators, ECAs, DFIs and MDBs, commercial financial institutions, and insurance providers. The following figure depicts the role that key stakeholders as well as additional stakeholders play in an OFW project.

**Figure 4.**  
Roles of Stakeholders in OFW Development



Policymakers and regulators define the enabling environment for OFW in each country. They are responsible for setting national energy targets and establishing the legal and regulatory frameworks that govern offshore wind. This includes renewable energy legislation, executive orders, and rules related to foreign investment. They also manage the awarding of project rights, issue permits and licenses, and determine tariff structures and market rules for electricity sales.

Developers lead and manage all stages of OFW projects. They are responsible for securing financing and technical expertise while assuming the primary risks during development, construction, and operations.

ECAs and DFIs or MDBs are the main providers of blended finance instruments and other forms of support. ECAs offer government-backed loans and insurance, often tied to the procurement of goods and services from their home countries. These instruments help reduce the overall cost of capital. DFIs and MDBs help de-risk projects by offering loans (market or below-market rate) and guarantees, providing technical assistance for policy development and planning, and serving as anchor investors to attract private capital.

Commercial banks, both local and international, provide the majority of project finance debt for offshore wind. They play a central role in structuring transactions and offering risk management tools such as hedging. They also facilitate access to large-scale capital through syndicated loans and financing structures backed by export credit agencies.

Insurance companies are central to risk mitigation in OFW development. They assess and underwrite the significant risks associated with both construction and operation. Their financial backing is often essential for achieving financial close, as they offer protection against potential losses in exchange for premiums.

See Appendix C for a table on stakeholders in OFW in the Philippines and Vietnam.

## Challenges & Opportunities

Despite the significant potential of concessional and blended finance, the research and stakeholder insights gathered for this report identified key challenges that restrict access to these funding sources more broadly, thereby limiting the potential growth of OFW in the Philippines and Vietnam.

### Challenges

Challenges of financing OFW are categorized into two levels – the macro-level and deal-level.

#### Macro-level Challenges

1. **Policy and regulatory uncertainty:** Investment in offshore wind, particularly in Vietnam, is being significantly hampered by political and regulatory uncertainty. There is a lack of visibility and a streamlined approach on the requirements for OFW projects, with multiple requirements across government agencies.
2. **Infrastructure, grid, and supply chain constraints:** Inadequate port infrastructure and robust transmission lines are critical obstacles in both the Philippines and Vietnam, and the domestic supply chain capabilities in both countries are nascent with dependence on international suppliers. Vietnam is comparatively well positioned, given its existing oil and gas industry that could be leveraged to support the development of offshore wind.

### Deal-level Challenges

1. **Large project size and capital requirements:** Offshore wind projects are significantly larger and more expensive than typical renewable energy projects, often costing billions of US dollars, which poses substantial financing challenges, especially in high-interest rate environments.
2. **Local currency constraints:** Given the size of the project financing needs, local currency lending is often not sufficient for OFW projects. Limitations in local currency lending often require a mix of domestic and international lenders to structure viable financing.
3. **Macroeconomic risks:** Macroeconomic challenges, namely currency depreciation and inflation risks, further complicate financing dynamics.
4. **First-mover hesitation:** Financing for OFW remains constrained by first-mover hesitation and risk-sharing dynamics. For example, local banks are generally unwilling to lead on complex, large-scale projects without the participation of experienced international banks or ECAs. Yet international financiers are also cautious, typically requiring the involvement of ECAs or MDBs to de-risk their participation. As a result, each institution is hesitant to move first, even when blended finance solutions are on the table.
5. **Need for bankable PPAs with clear risk allocation:** Accessing long-term financing for offshore wind depends on the availability of well-structured PPAs that clearly allocate risks and ensure predictable revenue streams. Stakeholders have raised concerns about the financial strength of local utilities, currency mismatches between tariff payments and project financing, the absence of foreign currency indexation, and unclear provisions for termination payments. This structural gap is widely seen as the primary reason for the slow pace of offshore wind development in both countries.
6. **Limited private concessional finance from DFIs/MDBs and competing priorities:** All DFIs and MDBs offer a range of instruments to support renewable energy, such as private concessional loans and guarantees, but their application to offshore wind projects has been minimal. Blended finance is more often directed toward mature technologies like solar, onshore wind, or priorities like energy access and storage in markets where structural or other issues remain. Offshore wind must demonstrate strong strategic and catalytic value to attract greater attention. Moreover, the scale of capital needed—billions per project—far exceeds the limited concessional funding currently available.

## Opportunities

Despite existing challenges, stakeholders recognize that the Philippines and Vietnam offer strong potential for OFW development. Both countries benefit from favourable geographic conditions. Vietnam has set national targets for offshore wind, while the Philippines has set high renewable energy targets. Leading developers, both domestic and international, are already actively exploring opportunities in these markets.

Efforts to strengthen the regulatory environment are also underway. In Vietnam, Decree No. 58/2025, issued earlier this year, establishes a framework for large-scale OFW projects and is expected to attract new investment by providing greater clarity and structure.

In the Philippines, the DOE is introducing market mechanisms to support sector growth. Notably, the GEA-5 marks the country's first auction dedicated exclusively to offshore wind. GEA-5 is part of a broader roadmap to achieve renewable energy goals outlined in the Philippine Energy Plan 2025–2050 and the National Renewable Energy Program.

DFIs and MDBs have also expressed growing interest in the sector, noting that both markets are in the early stages but show momentum and increasing activity.

There is a need to focus on market creation, rather than attempting to correct market failures, in nascent offshore wind markets. High tariffs in early stage OFW markets should be considered as a symptom of market creation, not market failure. The first projects are more expensive due to undeveloped supply chains and infrastructure. Cost reduction only occurs when significant market volume incentivizes supply chain investment that lowers costs and builds confidence that projects can be delivered.

A range of opportunities are presented based on the macro-level and deal-level challenges.

## Macro-level Opportunities

- **DFIs/MDBs**
  - ◇ **Government Technical Assistance and Capacity Building:** DFIs/MDBs have an opportunity to expand the technical and capacity building assistance they provide for macro-level gaps. This would further help governments utilize MDBs' technical assistance programmes to guide policy development, PPA design, and analytical work. The ADB has already provided valuable technical assistance to the Philippines to develop port infrastructure and environmental regulations for OFW. Many other DFIs/MDBs also offer technical assistance for renewable energy projects, such as IFC/World Bank, BII, KfW, FMO, and JICA, and these can be targeted to OFW.
  - ◇ **Concessional Funding for Infrastructure:** DFIs/MDBs could extend concessional funding to support essential OFW infrastructure, such as port and grid development. This provides catalytic value, contributing to industry-wide impact beyond just one OFW project.

- **Export Credit Agencies**
  - ◇ **Knowledge Sharing:** Bolstering knowledge-sharing efforts, such as those led by EIFO with local governments and banks, could be expanded to strengthen local financial ecosystems and build capacity for offshore wind financing, with ECAs playing a catalytic role in rallying and mentoring local banks through syndication and negotiation.
  - ◇ **Cross-Border Partnerships:** ECAs should support parent country exports of turbines, cables, and other supply chain components through ECA-backed loans and insurance, strengthening bilateral ties and technology transfer.
- **Government**
  - ◇ **Policy and Regulatory Certainty:** Ensure alignment between government and industry to establish a stable and transparent policy environment for OFW development. This includes confidence in long-term infrastructure planning, grid integration, and supply chain readiness. Governments should also lead preparatory measures that reduce early-stage project risk and send strong signals of commitment to investors and developers.
  - ◇ **Bankable Offtake and Pricing Frameworks**
    - » Establish a Clear Offtake Framework: A top opportunity is to define a transparent and bankable offtake mechanism that ensures revenue predictability for developers and financiers.
    - » Formalize Revenue Frameworks via Viable PPAs: Governments should explore viable PPA mechanisms to help provide revenue certainty. This approach can help de-risk early-stage projects and crowd in private investment, particularly where market maturity or offtaker credibility is still evolving.
    - » Consider Adopting Contracts for Difference (CfD): Consider implementing CfD models, as used in the UK and Poland, to stabilize electricity prices for off-takers and reduce revenue risk for developers and financiers, improving project bankability.
    - » Update Frameworks as the Market Evolves: Regularly assess and update frameworks to adapt to external market conditions and technology changes.
  - ◇ **De-risking and Investment Enablement:** Government finance agencies can play a catalytic role by: facilitating access to climate and concessional finance; ensuring adherence to international standards for risk allocation and contractual design; providing mechanisms such as arbitration, sovereign guarantees, and security packages for lenders; engaging early with MDBs to co-design guarantee schemes, credit enhancements, or first-loss arrangements that crowd in private finance.
- **Developers**
  - ◇ **Collaboration to Shape Policy:** Developers should collaborate with policymakers to shape policies that realistically balance cost, risk and market needs. They should also share project experience and appropriate data to inform tariff benchmarking and design of next-generation auction packages.

## Deal-level Opportunities

- **DFIs/MDBs**
  - ◇ DFIs/MDBs can finance projects as co-participants or through other forms of blended finance to help close the viability gap of new technologies and reduce risks for private banks. With limited concessional funding available, they can leverage additional tools to catalyse and attract private investment, such as through project development support and providing guarantees.
    - » **Deal Structuring & Project Development:** DFIs and MDBs can play a catalytic role by creatively structuring deals and supporting project development, complementing domestic and international lenders where needed.
    - » **Concessional Loans:** Provide concessional loans, including first-loss debt, to enhance a project's financial viability. Even with below-market-rate concessional loans, DFI participation can still create a "halo effect" — boosting investor confidence and improving the project's overall credibility.
    - » **Platform Investments:** Participate in blended finance platforms that pool concessional and commercial capital, deploying senior and junior debt/equity to support marginally bankable projects (e.g. Monetary Authority of Singapore's Financing Asia's Transition Partnership).
    - » **Direct Company Investments:** Provide direct equity to developers or supply chain companies involved in offshore wind.
    - » **Mezzanine Financing:** Provide mezzanine debt to bridge the gap between senior loans and equity, improving project bankability.
    - » **Guarantees:** Offer flexible, long-term credit guarantees to de-risk investments and mobilize private capital.
  
- **Multilateral Climate Funds**
  - ◇ **Expanding Blended Finance:** Multilateral climate funds such as the Green Climate Fund (GCF), Global Environment Facility (GEF), and Climate Investment Funds (CIF) can play a pivotal role in expanding the use of blended finance instruments, such as grants, concessional funding, and first-loss capital, to catalyse investment in OFW. This can contribute to the availability of concessional capital deployed through DFIs/MDBs and other investment vehicles.

- **Export Credit Agencies<sup>24</sup>**
  - ◇ ECAs have an opportunity to take a leading role in financing OFW projects in the Philippines and Vietnam. ECAs can cover up to 90–95% of project risk, enabling longer loan tenors and drawing in cautious commercial banks.
    - » **Direct Financing:** Provide direct loans to OFW projects in the Philippines and Vietnam, either *tied* to contracts involving home-country turbine manufacturers, engineering, procurement and construction (EPCs) companies, or service providers, or *untied*, where projects align with broader national interests (e.g., securing strategic supply chains or global competitiveness).
    - » **Guarantees:** Provide credit guarantees to reduce risks for private lenders and unlock additional capital for OFW projects. Credit enhancement is a key area of support.
    - » **Insurance Instruments:** Support with credit and political risk insurance to protect investors and contractors against non-payment, expropriation, or other sovereign risks.
    - » **De-risking Project Finance:** Play a key role in de-risking large-scale OFW investments by enabling access to long-tenor, lower-cost capital, particularly in emerging or frontier markets.
  
- **Developers**
  - ◇ **Project Structuring and Partnerships:** Developers should seek to create consortium structures to pool expertise and diversify project risks among commercial and development partners.

<sup>24</sup> This information has largely been supported by information from the following report - PwC, *Key Issues for Project Management: Export Credit Agency Financing - Investing in Energy Transition Projects (2024)*, <https://www.pwc.com/m1/en/blogs/pdf/export-credit-agency-financing.pdf>



4.

# The Role of Blended Finance in Unlocking Bankability for Offshore Wind in the Philippines and Vietnam

This report analysed the policies and activities of 10 Development Finance Institutions (DFIs) and Multilateral Development Banks (MDBs), along with three multilateral climate funds, to assess their contributions to blended finance for OFW projects.

## KEY HIGHLIGHTS

- While many DFIs/MDBs have established renewable energy targets and policies, explicit references and targets for OFW remain limited.
- A wide range of instruments, such as concessional loans and guarantees, are available for renewable energy more broadly, though few have been specifically applied to OFW to date.
- The relatively limited and dispersed nature of current DFI/MDB engagement in OFW presents a challenge to scaling blended finance in the sector.
- Similarly, OFW has not yet featured prominently in the portfolios of major multilateral climate funds, such as the Climate Investment Funds and the Global Environment Facility.

## Development Finance Institutions and Multilateral Development Banks

Table 4 summarizes Development Finance Institutions (DFIs) / Multilateral Development Banks (MDBs) support to date for OFW through their various products and services. Best efforts were made to ensure the accuracy of information, drawing primarily from publicly available sources and interviews when provided permission; however, some inaccuracies may remain despite these efforts. The full table may be found in Appendix D.

**Table 4.**

DFI/MDB Available Products that have Supported Offshore Wind

Product Targeted for OFW	Key Feature it bridges	DFI / MDB Availability							
		ADB	AIIB	BII	FMO	JICA	JBIC	KfW / DEG	WB / IFC
Industry research to support OFW development	<i>Supplements Macro Features</i>	✓	✓	X	X	X	✓	X	✓
Grants	<i>Supplements Macro &amp; Deal-level Features</i>	X	X	X	X	X	X	X	X
Technical assistance		✓	X	X	X	X	X	X	✓
Technical assistance for climate infrastructure design and preparation	<i>Preparedness of Infrastructure (ports, grids, etc.)</i>	✓	X	X	X	X	X	X	X
Trade and supply chain finance	<i>Developed Local Supply Chain</i>	X	X	X	X	X	X	X	X
Financing for OFW farm vessels		X	✓	X	X	X	X	X	X
Concessional finance	<i>Commercial Capital (Debt and/or Equity)</i>	X	X	X	X	X	X	X	X
Debt and/or Equity		X	X	X <sup>A</sup>	X <sup>A</sup>	X	✓	✓ <sup>B</sup>	X
Guarantees	<i>Robust Risk-sharing Mechanism</i>	X	X	X	X	X	✓	X	X

**Legend****A:** But invested in onshore wind**B:** Unknown if concessional**Abbreviations****ADB:** Asian Development Bank**AIIB:** Asian Infrastructure Investment Bank**BII:** British International Investment**FMO:** FMO Dutch Development Bank**JICA:** Japan International Cooperation Agency**JBIC:** Japan Bank for International Cooperation**KfW / DEG:** KfW Development Bank / German Investment Corporation**WB / IFC:** World Bank and International Finance Corporation

A general trend for DFIs/MDBs is that publicly disclosed investment targets specifically mentioning OFW are sparse. A wide range of instruments—such as concessional loans and guarantees—are available for renewable energy in general, but few are tailored specifically to the characteristics of offshore wind, and most have yet to be applied concessionally to any offshore wind projects. There are, however, cases where DFIs and MDBs have offered market-rate loans that still provided the added benefit of a “halo effect.” DFIs and MDBs offer essential blended finance and support for OFW in specific areas, but their involvement is often limited, uncoordinated and fragmented overall.

For example, the World Bank and IFC provide valuable, early-stage research and technical assistance for OFW. The joint ESMAP-IFC Offshore Wind Development Program’s sole objective is to accelerate the uptake of OFW in emerging markets. It supports the inclusion of OFW into the energy sector policies and strategies of World Bank Group client countries. The World Bank and IFC also conduct industry research to advance financing for OFW. In 2023 they released a report *Concessional Climate Finance Essential to Catalyzing Offshore Wind Development in Emerging Markets*, which has informed the research in this report.

The ADB has also provided valuable industry research to advance OFW. More importantly, it is involved in technical assistance projects and prefeasibility studies to support OFW, particularly in the Philippines. It has specifically extended technical assistance support for the Philippines DOE and DENR to develop environmental regulations and environmental and social safeguards for OFW. As mentioned earlier, ADB also provided technical assistance to the Philippines DOE, conducting a study to help plan port upgrades for OFW use.

The Asian Infrastructure Investment Bank (AIIB) has conducted research and made investments to specifically support OFW farm vessels to help support and grow the industry. They noted that despite the rapid growth in the market for offshore wind globally, there is a shortage in offshore wind vessels. Thus, AIIB has committed to investing USD750 million in the Seraya SEA Energy Transition and DI Fund with the objective of servicing 10GW of wind farms through the underlying vessel assets by 2027, with 50% of the vessels to possess green credentials.

The Japan Bank for International Cooperation (JBIC) is one of the DFIs/MDBs with the biggest track record in terms of providing financing for OFW projects, as seen in Taiwan's Hai Long OFW Project. KfW also is actively engaged in providing finance for OFW projects in Germany.

## Multilateral Climate Funds

While their structures and mandates sometimes overlap with those of DFIs and MDBs, multilateral climate funds—such as the Green Climate Fund (GCF), the Global Environment Facility (GEF), and the Climate Investment Funds (CIF)—hold distinct potential to accelerate blended finance for OFW, particularly as global climate ambition rises.

### Green Climate Fund

The Green Climate Fund (GCF), an official funding mechanism of the UNFCCC and the official financing mechanism under the Paris Agreement to support climate change mitigation and adaptation projects in developing countries, doesn't only operate through DFIs/MDBs, but rather through accredited entities and nationally designated authorities. The GCF supports energy generation and energy access projects, among other climate areas.

A 2024 independent evaluation of the GCF found that it had supported three projects using offshore wind technology, noting the high risks associated with offshore logistics and power delivery. The assessment observed that the GCF's energy portfolio shows limited willingness to take on higher-risk, transformational technologies like offshore wind, green hydrogen, and energy storage. Its reliance on senior loans points to a cautious, risk-averse approach that falls short of its stated ambitions for the energy sector, underscoring a clear opportunity to embrace greater risk in order to more fully support offshore wind.<sup>25</sup> In other words, even though GCF's stated goal is to support transformational technologies like OFW, catalytic funding for the area has been limited.

<sup>25</sup> Green Climate Fund, *Independent Evaluation of Green Climate Fund's Energy Sector Portfolio and Approach* (2024), [https://ieu.greenclimate.fund/sites/default/files/document/070924-energy-sector-evaluation-final-report\\_0.pdf](https://ieu.greenclimate.fund/sites/default/files/document/070924-energy-sector-evaluation-final-report_0.pdf)

### Global Environment Facility

The Global Environment Facility (GEF) is also an official funding mechanism under the UNFCCC, using both grants and other forms of concessional funding. Its energy related focus area is the promotion of innovation and technology transfer for sustainable energy breakthroughs. The GEF is a catalyst to promoting renewable energy on many fronts – from removing barriers and building capacity to direct financing of investments in renewable energy technologies. Since its inception, the GEF has invested more than US\$1.1 billion in 249 stand-alone renewable energy projects, as well as US\$277 million in 54 mixed projects with renewable energy components, in 160 developing and transition countries. However, to date, there has been no dedicated focus or direct project financing for offshore wind.

### Climate Investment Funds

The Climate Investment Funds (CIF) was jointly established by the World Bank and regional MDBs, outside of the UNFCCC. Funding comes from donor countries. The CIF channels concessional finance through six MDBs for both upstream advisory and downstream investment activities to support climate action. The World Bank Group, including the International Finance Corporation, the African Development Bank, the Asian Development Bank, the European Development Bank, and the Inter-American Development Bank, are the implementing partners of CIF's investments. While CIF has played a vital role in piloting and scaling climate finance instruments across renewable sectors, it has not yet financed an offshore wind project, indicating a gap—and an opportunity for future engagement in this area.



## 5.

# Designing a Capital Stack to Catalyse and Scale Offshore Wind Investment

The quantified capital stack for a model 500MW OFW project presented in this section, and its accompanying analysis, demonstrates how blended finance mechanisms can serve as a catalytic tool in improving the bankability of an offshore wind project. By drawing on real project data and regional case studies, this section assesses the impact of different financing stacks and policy scenarios, reinforcing the report's central thesis: blended finance can substantially reduce the Levelized Cost of Electricity (LCOE), enhance debt serviceability, and unlock private capital in markets facing affordability and bankability constraints.

## KEY HIGHLIGHTS

- The analysis explores four financing scenarios, ranging from high-cost debt and shorter PPA/loan tenors of an imperfect commercially viable case, to projects that are funded by blended finance composed of commercial debt, concessional loans, grants, and export credit guarantees, showing how enhanced access to concessional finance and risk mitigation progressively improves lender confidence and project bankability.
- The financial model assumes a 15-year PPA tenor for imperfect commercially viable PPAs and extends up to 25 years for commercially viable PPAs, using back-ended debt amortization profiles to stabilize early cash flows.
- It is assumed that incorporating concessional loans and risk mitigation measures like export credit guarantees into the capital structure reduces the all-in debt interest rates by 120 basis points, reflecting lowered risk. Tariffs were back-solved based on a target equity internal rate of return (IRR), with the assumption that the equity IRR is equal to the cost of equity specific to the market.
- Implementing blended finance solutions reduces tariffs dramatically from a high of 16.20 PHP/kWh (0.28 USD/kWh) in the Philippines and 4,579.60 VND/kWh (0.17 USD/kWh) in Vietnam to affordable, policy-aligned rates as low as 10.50 PHP/kWh (0.18 USD/kWh) and 2,931.45 VND/kWh (0.11 USD/kWh), respectively, highlighting the critical role of structured finance in enabling market growth.



# Introduction and Methodology: Framework for Analysing the Impact of Blended Finance on Offshore Wind Projects

## **Introduction**

Offshore wind is a pivotal technology in the global transition to clean energy, yet financing such projects in emerging markets like the Philippines and Vietnam remains challenging due to high perceived risks, underdeveloped regulatory frameworks, and limited access to concessional capital. In addition to broader enabling environment challenges, this report's research and stakeholder insights highlighted several deal-level barriers specific to OFW in the Philippines and Vietnam. These include local currency limitations and macroeconomic risks such as inflation and currency depreciation.

To address these barriers, and weigh the available opportunities identified, the analysis proposes a structured capital stack that integrates blended finance instruments comprising concessional loans, commercial debt, sponsor equity, and targeted credit guarantees through ECAs. The objective is to demonstrate how this capital structure can reduce the levelised cost of energy (LCOE), making offshore wind projects more commercially viable and supporting the scaling of investments in the region.

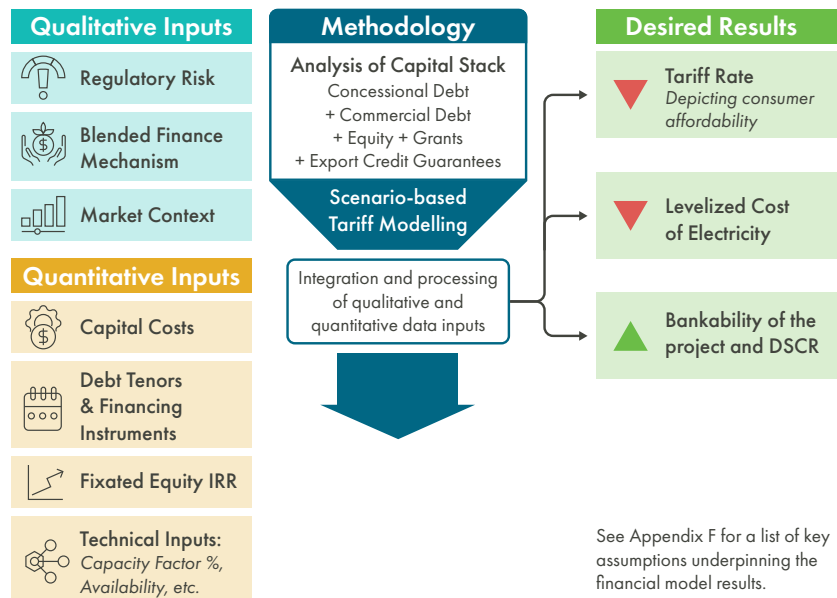
## **Methodology and Key Assumptions**

This section delineates the framework and core assumptions underpinning the financial model for a 500 MW offshore wind project in the Philippines and Vietnam. Tailored to the unique market dynamics of these emerging economies, the methodology integrates an analysis of the capital stack, financing instruments, and scenario-based tariff modelling. By combining qualitative insights such as regulatory risk and blended finance mechanisms with quantitative inputs like capital costs and debt tenors, it offers transparent, robust projections.

This approach highlights how concessional finance, grants, commercial debt, and export credit guarantees collectively reduce the weighted average cost of capital and enhance bankability, thereby lowering the LCOE and enabling scalable OFW investments in these regions.

**Figure 5.**

Financial Model Methodology: Analysing Capital Stack, Risk and Tariff Dynamics



## Capital Stack Architecture and Financing Instruments

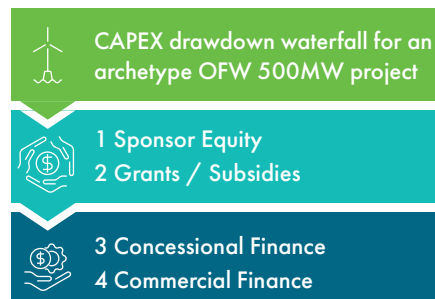
The financial model is based on a carefully structured capital stack designed to optimize cost, risk distribution, and tenor, leveraging both commercial and concessional sources of capital. Key components include:

- **Senior Debt:** A mix of commercial and concessional debt designed to optimize cost and tenor.
- **Equity (Common):** Sponsor-level equity serving as the primary risk capital.
- **Blended Finance Mechanisms:** This includes concessional capital and risk-mitigating guarantees issued by ECAs, which collectively reduce the overall cost of debt and improve investor confidence.
- **Grants/Subsidies:** Modelled at 5% of capital expenditure under a scenario where the PPAs are commercially viable and funded through a blended finance mechanism, these non-repayable contributions ease upfront investment pressure. Given their limited availability in practice, capital subsidies from climate transition facilities, climate-focused funds, or results-based climate financing mechanisms are proposed as viable alternatives.

Preferred equity was excluded based on industry precedents, given its potential to dilute equity returns without improving the risk profile.

**Figure 6.**

Capex Drawdown Order



Export credit guarantees (ECGs) are typically applied to the commercial-debt portion of offshore wind power financing to reduce lender risk, strengthen the overall financial structure, and enhance the bankability of capital-intensive ventures. Global export credit agencies offer a broad suite of guarantee products, each tailored to address specific financing and risk-mitigation needs at both the project and corporate levels:

- For large offshore wind projects, the **buyer credit guarantee** is most employed, directly supporting commercial bank loans used for project procurement, and is often paired with other instruments (e.g., performance bonds, political risk insurance).
- **Performance guarantees and supplier credit facilities** address risk at various points in the construction and supply chain, providing flexibility for multi-party contractual structures.
- **Direct loans and untied loan programmes** can further reduce borrowing costs, especially when equipment is sourced from the ECA's sponsor country or region.
- **Political risk insurance** is highly relevant in emerging markets like the Philippines and Vietnam, mitigating sovereign and macroeconomic risks.

See Appendix E for an illustrative project timeline for an archetype 500MW OFW project.



## Scenario Development

The study evaluates four capital stack configurations across the two geographies.

**Table 5.**

Overview of Four Financial Scenarios for OFW

Scenarios	Description	Capital Stack Mix
<b>Imperfect, commercially viable PPA with elevated risk premiums</b>  (Scenario 1)	<ul style="list-style-type: none"> <li>This scenario assumes a higher cost of debt and a shorter 15-year PPA tenor, with a 10-year loan tenor, resulting in a steep increase in LCOE and tariffs, making the project financially unattractive and uncompetitive against market benchmarks. The elevated financing cost, coupled with limited tenor, constrains debt servicing flexibility and heightens project cash flow pressure throughout the operating period.</li> <li>Moreover, the structure reflects limited lender confidence and insufficient risk-sharing mechanisms, with potential recourse to sponsors for cost overruns. The high cost of debt also reflects perceived risks such as uncertain dispatch, non-creditworthy off-takers, and broader market volatility, all of which collectively deter financing appetite and undermine project bankability.</li> </ul>	<b>60%: 0%: 40%: 0%</b> Commercial Debt: 60% Concessional Debt: 0% Equity: 40% Grant: 0%
<b>Commercially viable PPA – Only Commercial debt + equity</b>  (Scenario 2)	<ul style="list-style-type: none"> <li>This scenario assumes a project setup where the PPA and regulatory framework provide enough confidence for commercial banks to lend, enabling a typical 70:30 debt-to-equity structure.</li> <li>Financing is fully market-based, with no concessional or grant support, so risk is mainly shared between sponsors and commercial lenders.</li> <li>The 20-year PPA tenor and 15-year debt tenor provide sufficient bankability to enable debt access. However, in the absence of concessional capital, the risk premium remains relatively high, limiting pricing flexibility.</li> </ul>	<b>70%: 0%: 30%: 0%</b> Commercial Debt: 70% Concessional Debt: 0% Equity: 30% Grant: 0%
<b>Imperfect, commercially viable PPA with concessional support</b>  (Scenario 3)	<ul style="list-style-type: none"> <li>Under this scenario, an otherwise non-commercially viable PPA becomes feasible owing to enhanced support from MDBs through increased concessional financing. This blended structure helps reduce the overall cost of capital, and LCOE compared to the base case, improving project bankability.</li> <li>The concessional finance support from MDBs instils greater confidence among commercial lenders, enabling them to participate in the project on improved terms. The blended financing structure allows for a longer PPA tenor of 20 years, providing better revenue visibility and repayment flexibility.</li> <li>However, the debt component remains relatively high cost, reflecting continued exposure to market risks. While MDB participation improves confidence and reduces equity burden, the project still relies on a careful balance between concessional and commercial tranches to sustain long-term viability.</li> </ul>	<b>30%: 40%: 30%: 0%</b> Commercial Debt: 30% Concessional Debt: 40% Equity: 30% Grant: 0%
<b>Commercially viable PPA - concessional + commercial + equity + ECA guarantee</b>  (Scenario 4)	<ul style="list-style-type: none"> <li>This scenario features a fully bankable project with an extended tenor of 25 years, aligning debt repayment with a significant portion of offshore wind asset's economic life.</li> <li>It ensures competitive tariffs below market ceilings, supporting consumer affordability while maintaining financial viability.</li> <li>The structure incorporates strong risk-sharing through concessional debt, export-credit guarantees, grant funding from government or climate funds, backed by credible sponsors and Export Credit Agency (ECA) involvement.</li> </ul>	<b>20%: 55%: 20%: 5%</b> Commercial Debt: 20% Concessional Debt: 55% Equity: 20% Grant: 5%

**Table 6.**

Selected List of Financial Assumptions Incorporated in the Financial Model

Particulars	Imperfect, commercially viable PPA with elevated risk premiums	Commercially viable PPA - Only commercial + equity	Imperfect, commercially viable PPA with concessional support	Commercially viable PPA - concessional + commercial + equity + ECA guarantee
	Scenario 1	Scenario 2	Scenario 3	Scenario 4
<b>Total Capex<sup>26</sup> (in \$ mn) including interest capitalized during construction phase</b>				
Philippines	2,176	2,200	2,143	2,169
Vietnam	2,185	2,213	2,145	2,177
<b>Technical Assumptions</b>				
Installed Capacity	500 MW			
Net Capacity Factor (%)				
Philippines	35.60% <sup>27</sup>			
Vietnam	49.60% <sup>28</sup>			
<b>Mode of Funding (% of Total Capex):</b>				
Commercial Debt	60%	70%	30%	55%
Concessional Debt		0%	40%	20%
Equity capital	40%	30%	30%	20%
Grant/ subsidy		0%		5%
<b>Fixed Equity IRR (%) - Based on Cost of equity arrived for both regional projects</b>				
Philippines	14.70%			
Vietnam	15.00%			
<b>Rate of Interest (%):</b>				
Commercial Debt* <sup>29</sup>				
Philippines	9.32%	8.32%	9.32%	8.32%
Vietnam	10.19%	9.19%	10.19%	9.19%
Improvement in Basis Points due to use of ECG	0%			1.2%
Concessional Debt* <sup>30</sup>	0%		3.4%	
<b>Loan Tenor (Years)</b>				
Commercial Debt	10		15	
Concessional Debt		0		20
<b>Other Expenses</b>				
OPEX (in \$ Mn)	~0.08 \$ Mn/ MW/Year (2025 terms)			
Decommissioning Cost (in \$ Mn)	~0.57 \$ Mn/MW (2025 terms)			
Insurance - Operational All-Risk	~0.02 \$ Mn//MW/Year (2025 terms)			
<b>Guarantee Arrangement</b>				
Export Credit Guarantee Cover (%):	0% of commercial financing tranche			80% of commercial financing tranche
Upfront guarantee fee	0%			2%
Annual recurring fee	0%			0.75%
<b>Working Capital assessment:</b>				
Accounts Receivables Days	60 Days			
Accounts Payables Days	50 days			
<b>Inflation Rate<sup>31</sup>:</b>				
Philippines	1.70%			
Vietnam	3.38%			
<b>Tax rate:</b>				
Philippines	25%			
Vietnam	20%			

\*Refer to Appendix F for details on how the interest rates are derived for both commercial and concessional debt

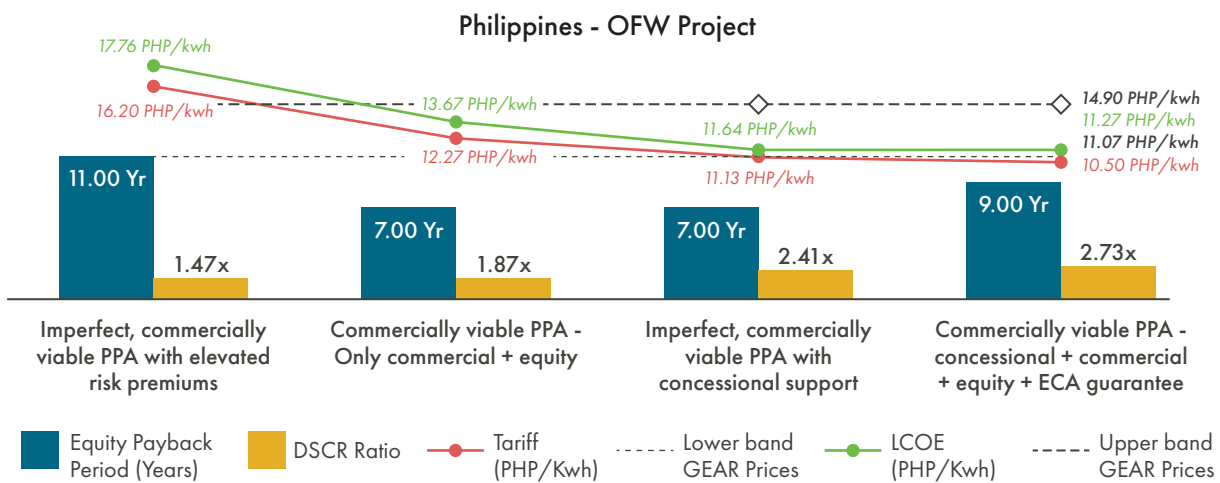
## Model Results and Discussion

Implementing the methodology and assumptions across the scenarios detailed above, this section discusses the results of the detailed financial model, highlighting the impact of commercial viability and the application of blended finance tools to indicative tariff levels and key financial metrics, including LCOEs, DSCRs, and payback periods, which align with the equity IRR expected by investors.

### Model Results and Implications for the Philippines

**Figure 7.**

Results for Indicative Tariff, LCOEs, Equity Payback Periods, and DSCRs based on a Minimum Fixed Equity IRR for an Archetype 500 MW Offshore Wind Project in the Philippines



- Blended Finance Cuts Tariffs and LCOE to Affordable Levels**

Transitioning from Scenario 1 characterized by high-cost debt and a structure requiring significant equity contribution (tariff: 16.20 PHP/kWh or 0.28 USD/kWh; LCOE: 17.76 PHP/kWh or 0.31 USD/kWh) to a fully blended finance structure (Scenario 4) incorporating concessional funding and ECA guarantees reduces tariffs to 10.50 PHP/kWh (0.18 USD/kWh) and LCOE to 11.27 PHP/kWh (0.19 USD/kWh). These reductions are well aligned with the Green Energy Auction Reserve (GEAR) price range of 11.07–14.90PHP/kWh (0.19–0.26 USD/kWh), directly addressing consumer affordability.

- WACC Declined Through Structuring**

The WACC drops sharply from 11.72% in Scenario 1 to just 6.54% in the best-case blended finance structure (Scenario 4), underscoring how capital stack optimization including concessional tranches and credit guarantees translates into real, bankable cost reductions and enhances project viability.

- Risk Mitigation and Credit Enhancement Substantially Boost Debt Metrics**

The debt-service coverage ratio (DSCR) improves from 1.47x to a robust 2.73x at optimal structuring, reflecting de-risked cash flow profiles that give lenders the confidence to extend debt on favourable terms confirmed by equity payback periods stabilizing around 7-8 years across scenarios despite falling tariffs.

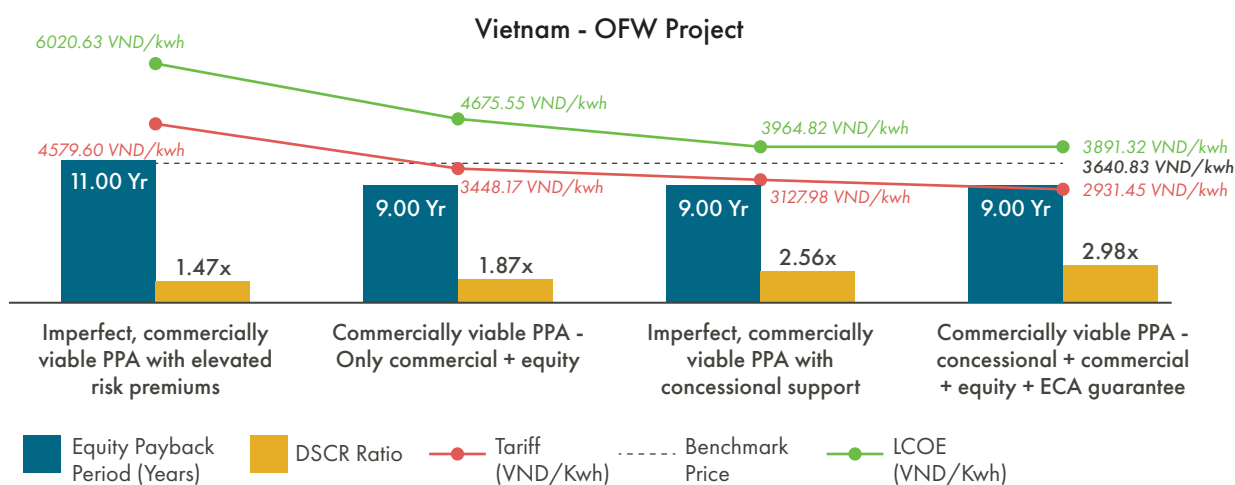
<sup>26</sup> The variation in Capex is primarily driven by changes in IDC, while the hard costs for equipment and other components remain unchanged.  
<sup>27</sup> The Lantau Group, Offshore Wind Consultants Limited, & Centro Elettrotecnico Sperimentale Italiano SpA. (2024). *Offshore wind regulatory Framework in the Philippines* (Asian Development Bank, Ed.). Asian Development Bank. [https://www.adb.org/sites/default/files/project-documents/55140/55140-001-tacr-en\\_6.pdf](https://www.adb.org/sites/default/files/project-documents/55140/55140-001-tacr-en_6.pdf). Note that the net capacity factor is taken from the average of the 5 sites listed in the report.  
<sup>28</sup> Figure taken from a report by the Ministry of Industry and Trade, Vietnam.  
<sup>29</sup> Refer to Appendix F for details on how the interest rates are derived for both commercial and concessional debt. The appendix also describes how we arrived at capacity factor for both regions.  
<sup>30</sup> Refer to Appendix F.  
<sup>31</sup> Philippine Statistics Authority. (2025, October). *Summary Inflation Report Consumer Price Index (2018=100): September 2025* <https://psa.gov.ph/price-indices/cpi-ir>  
 National Statistics Office, Vietnam. (2025, October). *Consumer price Index, gold price index and USD price index for September, third quarter and 9 months of 2025.* <https://www.nso.gov.vn/en/data-and-statistics/2025/10/consumer-price-index-gold-price-index-and-usd-price-index-for-september-third-quarter-and-9-months-of-2025/>

- Export Credit and Concessional Debt Deliver Systemic Lender Confidence**  
 For a commercially viable PPA, concessional debt and ECA facilities not only reduce borrowing costs (by up to 120 bps, as assumed) but also enable a higher proportion of project financing to be sourced through commercial debt. This directly addresses a primary barrier for commercial banks' participation in emerging markets and is evident in the project's ability to meet or exceed all key bankability criteria.

### Model Results and Implications for Vietnam

**Figure 8.**

Illustrative Results for Indicative Tariff, Equity IRRs, LCOEs, Equity Payback Periods, and DSCRs based on a Minimum Fixed Equity IRR for an Archetype 500 MW Offshore Wind Project in Vietnam



Note: The benchmark price shown in Figure 8 represents the average of three regional tariffs: the Northern region at 3,975 VND/kWh excluding value-added tax (VAT), the South-Central region at 3,079 VND/kWh, and the Southern region at 3,869 VND/kWh.

- Blended Finance and Concessional Funding Compress Tariffs and LCOE**  
 Blended finance and concessional funding compress tariffs and LCOE from unaffordable levels, dropping tariffs from from 4,579.60 VND/kWh (0.17 USD/kWh) and LCOE from 6,020.63 VND/kWh (0.23 USD/kWh) in Scenario 1 to tariff ~ 2,931.45.26 VND/kWh (0.11 USD/kWh) and LCOE 3,891.32 VND/kWh (0.15 USD/kWh) in the fully blended structure (Scenario 4), positioning the project close to Vietnam's approved tariff ceilings range from 3,079 VND/kWh to 3,975 VND/kWh.
- Blended Finance Significantly Lowers Project WACC**  
 WACC drops significantly from 12.23% in the imperfect commercially viable PPA scenario to 6.82% with blended finance, driven by concessional loans and export credit guarantees. This reduction lowers financing costs, improves bankability, and enables more affordable tariffs to consumers and sustainable investment.
- Risk Mitigation Sharply Enhances Lender Confidence**  
 Risk mitigation through concessional finance and export credit guarantees boosts lender confidence, raising the DSCR from 1.73x to 2.98x while maintaining stable equity payback periods around 9 years. This ensures strong debt repayment capacity without compromising investor returns..

- **Strategic Use of Export Credit Guarantees, Concessional Loans, and Longer Debt Tenors Aligns Outcomes with Vietnam's Policy-Driven Tariff Ceilings**

Strategically leveraging export credit guarantees, concessional loans, and extended debt tenors of up to 20 years enables project outcomes that align closely with Vietnam's policy-driven tariff ceilings. This combination supports regulatory compliance while enhancing consumer affordability by lowering financing costs and improving cash flow profiles.

### Cross-Country Model Results and Implications

The value proposition of blended finance based on the analysis is summarized here.

- **Blended Finance Enables Stepwise Financial Optimization:** By progressively layering commercial debt, concessional debt, and export credit guarantees, blended finance enables each incremental improvement in the capital structure to deliver significant reductions in both project tariff and the LCOE, directly aligning with market and policy affordability targets in both countries.
- **Blended Finance Enhances Bankability and Attracts Private Investment:** Incorporating concessional and ECA-backed finance elements transforms projects with elevated risk premiums into bankable, investment-grade opportunities with long-term PPA and loan tenors, robust DSCRs, and commercially competitive pricing, giving both local and international lenders the confidence to participate.
- **Blended Finance Reduces Consumer Costs and Expands Energy Access:** Lowering the WACC through blended structures sharply cuts end-consumer tariffs, making clean electricity more accessible and affordable for emerging market consumers while supporting government policy goals.
- **Blended Finance Provides a Replicable Framework for Market Scaling:** The structured, stepwise approach to blended finance creates a financial engineering model that can be replicated for future projects, accelerating market maturity and enabling gigawatt-scale offshore wind deployment in the Philippines, Vietnam, and similar markets.
- **Blended Finance Mitigates Key Market, Regulatory, and Political Risks:** The use of concessional funding, credit enhancement via ECAs, and targeted grants not only reduces project risk but also addresses country-specific barriers, such as local currency constraints and underdeveloped financial markets, unlocking sustainable private capital flows and ensuring the long-term bankability of offshore wind assets.

## Recommended Capital Stack for an Archetype 500 MW OFW Project in Philippines and Vietnam Resulting in Optimized Tariffs

Financial modelling, scenario analysis, and the bankability checklist indicate that the optimal capital structures for 500 MW OFW projects in the Philippines and Vietnam, whether in commercially viable or unviable contexts, can be achieved by leveraging blended finance to reduce LCOE and deliver competitive tariffs. Deal level features focus on financial structuring, while non deal level features ensure alignment with international offshore wind bankability standards.

### Recommended Capital Stack for Imperfect Commercially Viable OFW Projects Supported by Blended Finance:

In settings where offtaker creditworthiness, regulatory certainty, or contract structures are not yet fully matured, the capital stack mix may employ concessional finance as a catalytic resource to strategically overcome bankability barriers and optimize the tariff.

- **Deal-Level Features:**
  - ◇ **Capital Mix:**  
Sponsor Equity: 30%, Concessional Loans: 40% (below-market rates, long tenor, grace period), and Commercial Debt: 30% (typically limited at this risk stage).
  - ◇ **Project Tenor:**  
Introducing concessional financing into the capital mix enhances the credibility of the PPA and can extend the tenor from a short-term duration, typical of an imperfect commercially viable PPA, to 20 years.
  - ◇ **No ECG or Grant Support:**  
In this scenario, there is no involvement of an export credit agency or grants, as the PPA is still considered to carry a level of associated risks.
- **Non-Deal Level Features:**
  - ◇ Regulatory framework and policy support in place but still evolving, which initially constrained full bankability
  - ◇ Assignable PPA with some protections under enhancement to align with international lender requirements
  - ◇ Grid and port infrastructure under development and local supply chain expanding, previously posing execution risks
  - ◇ Offtaker with foundational credit support but limited large-scale offshore wind track record, elevating perceived offtake risk
  - ◇ Risk-sharing mechanisms established among sponsors, with concessional finance bridging residual bankability gaps and enabling optimized tariffs

### Recommended Capital Stack for Commercially Viable OFW Projects Supported by Blended Finance:

In project contexts where a project has a robust PPA, credible offtaker, and regulatory certainty, a fully blended finance stack anchored in commercial and ECA-backed lending provides the added benefit of substantially lowering tariffs and enhancing scalability.

- **Deal-Level Features:**

- ◇ **Capital Mix:**

- Commercial Debt: 55% (reflects enhanced lender confidence and risk transfer), Concessional/DFI Loans: 20% (now catalytic rather than foundational), Sponsor Equity: 20%, Grant: Up to 5% if needed for affordability, often phased out at this stage.

- ◇ **Project Tenor:**

- A typical commercially viable PPA spans 20-25 years and reflects strong commitments from the offtaker, along with streamlined and predictable revenue streams.

- ◇ **ECG or Grant Support:**

- These PPAs often benefit from facilities such as export credit guarantees, which can reduce the all-in cost (by 120 bps in this case).

- **Non-Deal Level Features:**

- ◇ Strong, transparent policy and clear regulatory frameworks

- ◇ Fully bankable, assignable PPA with credible termination and step-in rights for lenders

- ◇ Proven grid and port infrastructure; advanced local supply chain readiness

- ◇ Creditworthy, experienced offtaker and reputable developer consortium

- ◇ Comprehensive contractual risk-sharing with robust enforcement mechanisms

For imperfect commercially viable PPAs, the capital stack relies on high-cost commercial debt and concessional debt, with no ECA or grant support feasible. This results in higher tariffs due to elevated project risk and limited leverage. For fully commercially viable PPAs, a shift to high-leverage blended finance with ECA backed commercial debt, reduced equity, and full checklist compliance enables optimal tariffs, strong lender participation, and scalable, affordable offshore wind growth aligned with policy objectives.

**Table 7.**

Optimized Capital Stack, Financing Cost Assumptions, and Resulting Tariffs for 500 MW Offshore Wind Projects in the Philippines and Vietnam

Particulars	Imperfect, commercially viable PPA with concessional support	Imperfect, commercially viable PPA with concessional support	Imperfect, commercially viable PPA with concessional support	Imperfect, commercially viable PPA with concessional support
	Scenario 3	Scenario 4	Scenario 3	Scenario 4
Cost of Equity (Ke)	14.70%		15.00%	
<b>All in Cost of Debt:</b>				
Commercial Finance	~9.0%	~7.0%	~10.0%	~8.0%
Concessional Finance	3.4%			
Effective Cost of Interest (kd)	3.1%	3.4%	3.3%	4.1%
Capital Mix (Concessional Debt : Commercial Debt : Equity : Grant)	40%: 30%: 30%	20%: 55%: 20%: 5%	40%: 30%: 30%	20%: 55%: 20%: 5%
WACC (%)	6.6%	6.5%	6.8%	
<b>Resulting Tariff</b>	<b>11.13 PHP/kWh</b> (0.19 USD/kWh)	<b>10.50 PHP/kWh</b> (0.18 USD/kWh)	<b>3,127.98 VND/kWh</b> (0.12 USD/kWh)	<b>2,931.45 VND/kWh</b> (0.11 USD/kWh)



Rudong Offshore Wind Farm  
Jiangsu, China

## 6.

# Conclusion and Recommendations

Offshore wind can be a transformative driver of the energy transition in emerging markets such as the Philippines and Vietnam. When offshore wind projects are considered bankable – supported by sound macro conditions and robust deal structures - both domestic and international partners stand ready to commit capital.

Based on the results of this report's research, case study analysis, and stakeholder interviews, the key features of a bankable OFW project can be grouped into two categories: macro-level features and deal-level features.

- a. **Macro-level features** include prepared or planned infrastructure required for OFW (ports, grids, etc.), a developed supply chain, a clear and transparent national policy on offshore wind, and a viable market mechanism that enables competitive price determination.
- b. **Deal-level features** encompass financial and non-financial terms. Financial terms include clear off-take arrangements, long-term power purchase agreements (PPA), competitive tariffs, commercial capital (debt and/or equity), robust risk-sharing mechanisms, and currency indexation, as appropriate. Non-financial terms include having a credible developer, creditworthy offtaker, and features like step-in rights for banks.

In the absence of these features, technical assistance and innovative finance instruments can step in to bridge these gaps. In emerging markets like the Philippines and Vietnam, where these key features of a bankable OFW project may not be fully met in the initial development phase, blended finance solutions play a crucial role in bridging gaps and enabling project success.

The following are the top recommendations for unlocking and scaling finance and blended finance for OFW in the Philippines and Vietnam, gleaned insights from case studies, interviews, desk research, and capital stack modelling. While the report identified several additional opportunities for stakeholders, these represent the most critical levers for impact.

## Government

- **Create bankable offtake and pricing frameworks**
  - ◇ **Establish a Clear Offtake Framework:** Define a transparent and bankable offtake mechanism that ensures revenue predictability for developers and financiers.
  - ◇ **Formalize Revenue Frameworks through Viable PPAs:** Explore viable PPA mechanisms to help provide revenue certainty. This approach can help de-risk early-stage projects and crowd in private investment, particularly where market maturity or offtaker credibility is still evolving.
  - ◇ **Consider Adopting Contracts for Difference (CfD):** Consider implementing CfD models, as used in the UK and Poland, to stabilize electricity prices for off-takers and reduce revenue risk for developers and financiers, improving project bankability.
  - ◇ **Update Frameworks as the Market Evolves:** Regularly assess and update frameworks to adapt to external market conditions and technology changes.

## Developers

- **Collaborate to shape policy**
  - ◇ Collaborate with policymakers to shape policies that realistically balances cost, risk and market needs.
  - ◇ Share project experience and appropriate data to inform tariff benchmarking and design of next-generation auction packages.
- **Innovate project structuring and partnerships**
  - ◇ Develop consortium structures to pool expertise and diversify project risks among commercial and development partners.

## DFIs / MDBs

- **Provide concessional debt for first mover OFW projects**
  - ◇ Analysis from research and the capital stack modelling demonstrated that an essential form of support from DFIs/MDBs to unlock financing for OFW in the Philippines and Vietnam is the provision of concessional (below market) debt<sup>1</sup> to enhance a project's financial viability. Even when DFIs/MDBs provide loans at market terms, their involvement remains highly valuable due to the "halo effect," or other financial institutions interested in participating because of the due diligence and credibility provided by DFIs/MDBs.

- **Provide concessional funding for infrastructure**
  - ◇ DFIs/MDBs should extend concessional funding to support essential OFW infrastructure, namely port and grid upgrades and development. This provides catalytic value, contributing to industry-wide impact beyond just one OFW project.
- **Expand technical assistance and capacity-building**
  - ◇ DFIs/MDBs also have an opportunity to double down on the technical assistance they provide for macro-level gaps. This would further help governments utilize MDBs' technical assistance programmes to guide policy development, PPA design, and analytical work. Conducting technical studies to help governments plan for new or upgraded infrastructure, such as ports and grids, is also valuable.

#### Multilateral Climate Funds

- **Provide first loss capital and other concessional funding**
  - ◇ Multilateral climate funds such as the Green Climate Fund, Global Environment Facility, and Climate Investment Funds should expand the use of blended finance instruments, such as grants, concessional funding, and first-loss capital, to catalyse investment in OFW as an important contributor to the growth of renewable energy. This can contribute to the availability of concessional capital deployed through DFIs/MDBs and other investment vehicles.

#### Export Credit Agencies

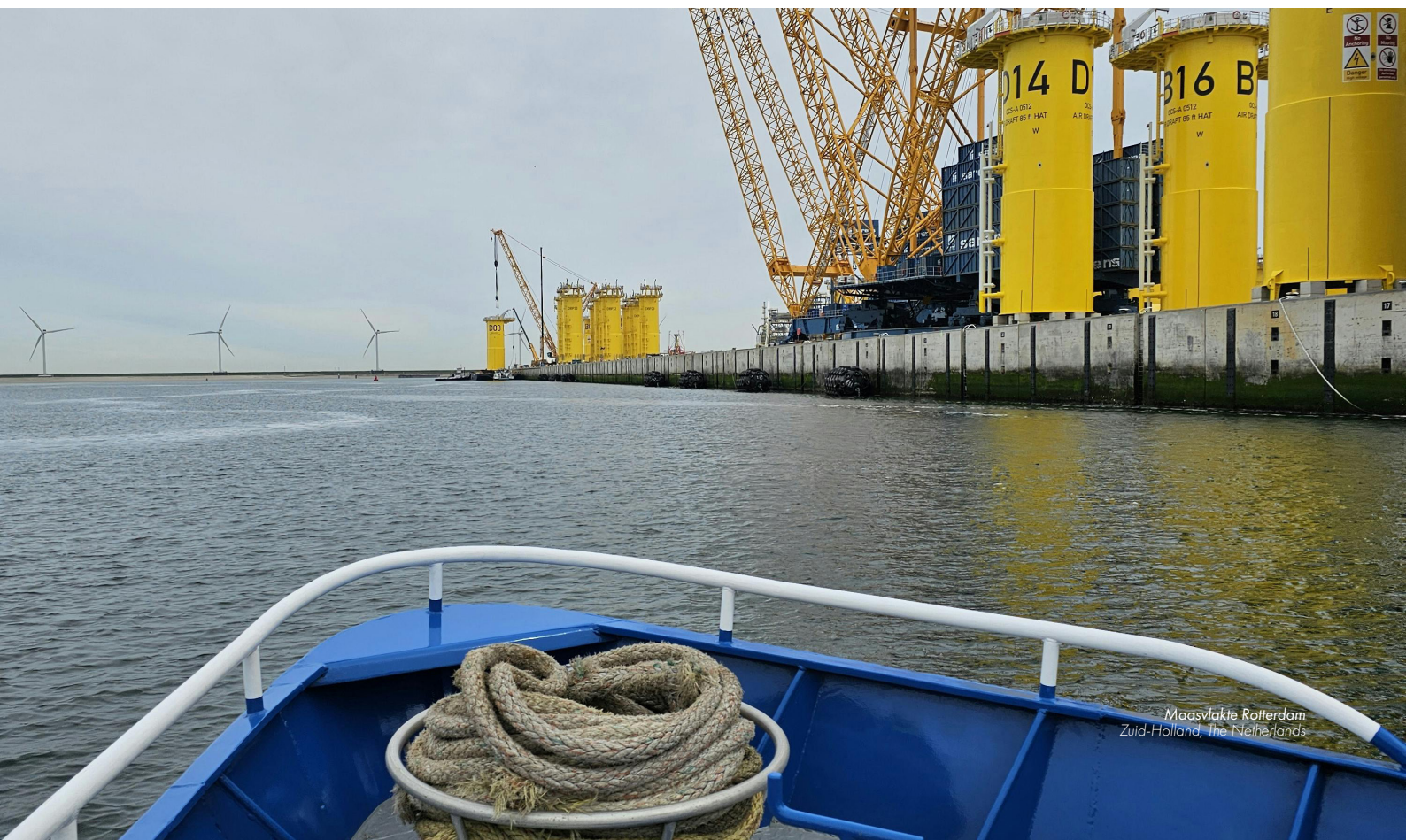
- **Provide credit guarantees as part of a consortium**
  - ◇ ECAs should provide credit guarantees as part of a consortium to de-risk OFW projects and crowd in private capital at scale. Case studies from Taiwan's Hai Long and Poland's Baltic Power projects show that ECA-backed guarantees improve debt affordability and help maintain high debt service coverage ratios. By covering up to 90–95% of project risks, ECA consortia can enable longer loan tenors, reduce perceived country and commercial risks, and attract risk-averse lenders.
- **Facilitate cross-border partnerships**
  - ◇ DFIs/MDBs should extend concessional funding to support essential OFW infrastructure, namely port and grid upgrades and development. This provides catalytic value, contributing to industry-wide impact beyond just one OFW project.

Offshore wind presents a compelling value proposition for the Philippines and Vietnam. It offers reliable, utility-scale power with a high-capacity factor, stabilizes long-term energy costs by reducing exposure to fossil fuel price volatility, and strengthens energy security by minimizing dependence on water resources and imported fuels.

Both countries are well-positioned to scale offshore wind, supported by favourable geography, national targets, and increasing developer interest. Regulatory and market reforms are already underway, such as Vietnam's Decree No. 58/2025 and the Philippines' GEA-5, to attract investment and accelerate sector growth, drawing increased attention from DFIs, MDBs, and other financiers.

With coordinated, early, and decisive action from key stakeholders including DFIs, MDBs, ECAs, developers, and policymakers, the findings and recommendations in this report can catalyse the next wave of offshore wind development in emerging markets. By strategically harnessing blended finance mechanisms that integrate concessional loans, export credit guarantees, commercial debt, and targeted grants, these markets can break through long-standing financial barriers. This approach not only sharply reduces financing costs and transforms project bankability, but also lowers tariffs to affordable, policy-aligned levels, driving clean energy growth that benefits both investors and consumers.

Crucially, blended finance bridges critical gaps in risk mitigation and market confidence, unlocking sustainable capital and creating a scalable, replicable blueprint for offshore wind expansion across the Asia-Pacific region. Adopting this dynamic financing mechanism is imperative to realizing offshore wind's full potential as a cornerstone of the sustainable energy transition in emerging economies.



**APPENDIX A**

# Expanded Overview of Offshore Wind Cases with Minimal or No Use of Blended Finance



## China

China dominates the global offshore wind market through large-scale deployment and strong domestic financing. Government support has been extensive, including favourable policies and substantial investment in infrastructure. However, the majority of projects are funded by domestic banks and state-owned enterprises, with limited participation from DFIs/MDBs and ECAs. ECA involvement does occur, typically when projects incorporate foreign technology or international consortiums, but such cases are relatively rare. Despite its scale and rapid expansion, China's offshore wind sector has seen minimal blended finance activity and remains relatively closed to large-scale foreign-financed ventures, aside from a few early-stage demonstration projects.



## Japan

Japan has an offshore wind target of 10 GW by 2030 and 30-45 GW by 2040 and had a cumulative installed offshore wind capacity of 253.5 MW at the end of 2024. The market has developed cautiously, supported by gradual improvements in regulatory frameworks and legal structures. Notably, a bill passed by Japan's House of Representatives in June 2025 will allow OFW development within the country's Exclusive Economic Zone (EEZ), extending beyond the 22-kilometre boundary of its territorial waters. The country has also reformed its rules for OFW power auctions at the beginning of the year.<sup>32</sup> ECA support within Japan has been limited, and by mandate, Japan does not qualify for DFI/MDB support as a developed country. JBIC has provided financing for OFW projects outside of Japan.



## South Korea

The South Korean government has set a target of 14.3 GW of offshore wind capacity by 2030, yet as of 2025, only 355 MW was operational across seven offshore wind farms as a result of ongoing challenges related to regulation on permitting and market design. Most projects remain in the planning or early development stages. While international developers have entered the market through joint ventures, ECA participation remains limited. Like Japan, South Korea does not qualify for DFI/MDB support by mandate.

<sup>32</sup> Japan revises rules for offshore wind power auctions, Reuters, January 29, 2025, <https://www.reuters.com/business/energy/japan-revises-rules-offshore-wind-power-auctions-2025-01-29/>



Source: OffshoreWIND.biz, 2025

## CASE STUDY

### Jeonnam 1 (99MW), South Korea

Jeonnam 1, the country's first fully non-recourse, project-financed offshore wind farm, began operations in 2025. The total project cost was US\$470 million (approx. KRW 615 billion). Alongside the planned Jeonnam 2 and 3 projects (totalling 800 MW and under development), these initiatives illustrate the role of international partnerships and commercial financing in advancing Korea's offshore wind sector and supporting its energy transition objectives.

#### South Korea Jeonnam 1 Financing

<b>Concessional Finance</b>	No concessional or policy-driven subsidised tranche was used in this financing
<b>Export Credit Agencies</b>	No ECA-backed loans or guarantees were used in this project
<b>Commercial Financing</b>	<ul style="list-style-type: none"> <li>• Non-recourse debt facility</li> <li>• Financial close in early 2023; 20-year fixed-price offtake agreement with Korea Hydro and Nuclear Power</li> <li>• Structured using European offshore wind precedents but tailored to Korean market specifics</li> <li>• Participating banks (nine in total)                         <ul style="list-style-type: none"> <li>◇ Sumitomo Mitsui Banking Corporation (SMBC)                                 <ul style="list-style-type: none"> <li>– mandated lead arranger, documentation bank, deal-contingent hedge provider (IRS &amp; FX)</li> </ul> </li> <li>◇ Crédit Agricole Corporate and Investment Bank (Crédit Agricole CIB)                                   <ul style="list-style-type: none"> <li>– also acted as financial advisor</li> </ul> </li> <li>◇ Korea Development Bank (KDB) – also acted as financial advisor</li> <li>◇ Mizuho Bank</li> <li>◇ MUFG</li> <li>◇ Société Générale</li> <li>◇ Standard Chartered Bank</li> <li>◇ Bank of America</li> <li>◇ NH-Amundi Green New Deal Infrastructure ESG Fund (Korean domestic lender)</li> </ul> </li> </ul>
<b>Equity Financing</b>	<ul style="list-style-type: none"> <li>• SK E&amp;S Company (SK E&amp;S) – 51%</li> <li>• Copenhagen Infrastructure Partners (CIP) through Copenhagen Offshore Partners (COP – an exclusive offshore wind development partner to CIP) – 49%</li> </ul>

Source: Climate Smart Ventures



### The Netherlands

Over the past five years, the Netherlands has installed 3.8 GW of offshore wind, second only to the UK in Europe. In 2024, another 4 GW was awarded but plans are being scaled back in the short term due to low bid competition and cost concerns. To meet the EU's CO2 emissions reduction target, the country has increased its 2030 offshore wind target from 11.5 GW to 22.2 GW, since delayed to 2032. A critical enabler of OFW projects in the Netherlands was its SDE+ scheme, launched in 2011, which was a government subsidy programme designed to support the development of RE projects. It has since been replaced by a revised version.

In the Netherlands, a major European OFW market, projects do not rely on DFI/ MDB and ECA financing. Instead, the financing approach typically has been quite distinct and tailored project-by-project. Corporate balance sheet financing was more common in earlier projects. Project finance has been used in larger and more recent projects.



## CASE STUDY

### Borssele III and IV (731.5 MW), The Netherlands

The Borssele III & IV offshore wind farms, located 22 km off the Dutch North Sea coast, represent a major milestone in the Netherlands’ renewable energy transition. Developed by the Blauwwind consortium (Partners Group, Shell, Diamond Generating Europe, Eneco, and Van Oord), the 731.5 MW project comprises 77 MHI Vestas 9.5 MW turbines and is expected to generate approximately 3,000 GWh annually—enough to power around 825,000 households.

While it didn’t use blended finance, the project benefits from a 15-year SDE+ scheme contract at €54.49/MWh, after which electricity will be sold on a merchant basis. With a total construction CAPEX of €1.44 billion, Borssele III & IV reached financial close in June 2018 and began commercial operations in early 2021. The project stands out for its competitive low subsidy level and innovative use of large-scale turbine technology, and for attracting a strong mix of domestic and international commercial lenders.

### Netherlands Borssele III and IV Financing

<b>Concessional Finance</b>	None. European Investment Bank (EIB) was originally considered but ultimately did not participate												
<b>Export Credit Agencies</b>	None. No ECA financing or guarantees included in the final funding structure												
<b>Commercial Financing</b>	<ul style="list-style-type: none"> <li>• US\$ 1.47 billion (approximately EUR 1.35 billion, including EUR 1.07 billion in senior debt and EUR 180 billion in letter of credit facilities) with a maturity date in 2035 and a legal maturity in 2038. The pricing is set at 155 basis points over Euribor during the construction phase, then adjusts to 135-175 basis points over the various operational phases.</li> <li>• Shell and Eneco Group signed a 15-year PPA to each purchase 50% of the generated energy.</li> <li>• Arranged by the following lenders:                         <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">◇ ABN Amro</td> <td style="width: 50%;">◇ Mizuho</td> </tr> <tr> <td>◇ Bank of China</td> <td>◇ MUFG Bank</td> </tr> <tr> <td>◇ BNG</td> <td>◇ Rabobank</td> </tr> <tr> <td>◇ BNP Paribas</td> <td>◇ SMBC</td> </tr> <tr> <td>◇ ICBC</td> <td>◇ Sumitomo Mitsui Trust Bank</td> </tr> <tr> <td>◇ ING</td> <td>◇ Société Générale</td> </tr> </table> </li> </ul>	◇ ABN Amro	◇ Mizuho	◇ Bank of China	◇ MUFG Bank	◇ BNG	◇ Rabobank	◇ BNP Paribas	◇ SMBC	◇ ICBC	◇ Sumitomo Mitsui Trust Bank	◇ ING	◇ Société Générale
◇ ABN Amro	◇ Mizuho												
◇ Bank of China	◇ MUFG Bank												
◇ BNG	◇ Rabobank												
◇ BNP Paribas	◇ SMBC												
◇ ICBC	◇ Sumitomo Mitsui Trust Bank												
◇ ING	◇ Société Générale												
<b>Equity Financing</b>	<ul style="list-style-type: none"> <li>• All Partners:                         <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">◇ Partners Group – 45%</td> <td style="width: 50%;">◇ Eneco – 10%</td> </tr> <tr> <td>◇ Shell – 20%</td> <td>◇ Van Oord – 10%</td> </tr> <tr> <td>◇ DGE – 15%</td> <td></td> </tr> </table> </li> </ul>	◇ Partners Group – 45%	◇ Eneco – 10%	◇ Shell – 20%	◇ Van Oord – 10%	◇ DGE – 15%							
◇ Partners Group – 45%	◇ Eneco – 10%												
◇ Shell – 20%	◇ Van Oord – 10%												
◇ DGE – 15%													

Source: Climate Smart Ventures

**APPENDIX B**

# Expanded Overview of Offshore Wind Cases with Blended Finance



## Taiwan

Taiwan's grid connected nearly 2 GW of new offshore wind capacity in the 2021–2023 period, making it the second-largest offshore wind market in the APAC region. It commissioned 933 MW of new OFW capacity in 2024. It is a leader in Asia's offshore wind market in activity and deployment scale and is widely regarded as the most open OFW market in Asia for foreign capital and expertise. It is cited as an illustrative example of multisource funding for projects, robust solutions for shared infrastructure (centrally planned grid development), and discussions around PPA (power purchase agreement) bankability. Major projects have been supported by ECAs from Denmark, the UK, Germany, and Japan. Among DFIs/MDBs, the Japan Bank for International Cooperation (JBIC) has supported.



Source: CREDENDO, 2023

## CASE STUDY

### The Hai Long Offshore Wind Project (1,022 MW), Taiwan

The Hai Long Offshore Wind project employs a multi-tranche financing structure comprising a loan from JBIC, ECA-backed facilities, and commercial equity and debt, each with distinct risk, tenor, and pricing profiles, coordinated to fully fund the project and mitigate investment risks. Strong offtake agreements and blended financing models in Taiwan have enabled large-scale offshore wind development, offering a replicable strategy for emerging markets such as Vietnam and Philippines.

### Taiwan Hai Long Offshore Wind Project Financing

<b>Multilateral Financing*</b>	JBIC provided a loan tranche valued at approximately JPY 101.2 billion (~US\$ 677 million)
<b>Export Credit Agencies</b>	<ul style="list-style-type: none"> <li>• Multiple ECAs provided credit guarantees and insurance to minimise risks associated with the procurement of foreign equipment and services.</li> <li>• Their involvement facilitated broader private sector participation and mitigated country and commercial risks.</li> <li>• The ECAs collectively covered over 80% of the financing, marking the highest coverage rate for offshore wind projects in Taiwan.</li> <li>• Key participating ECAs:                         <ul style="list-style-type: none"> <li>◇ Nippon Export and Investment Insurance (NEXI) – Japan</li> <li>◇ UK Export Finance (UKEF) – UK</li> <li>◇ Export Development Canada (EDC) – Canada</li> <li>◇ Bpifrance Assurance Export (formerly EFA) – France</li> <li>◇ Export Finance Norway (Eksfin) – Norway</li> <li>◇ Credendo – Belgium</li> <li>◇ Japan Bank for International Cooperation (JBC) – Japan</li> </ul> </li> </ul>

\*Non-concessional loan

Taiwan Hai Long Offshore Wind Project Financing (continued)

<b>Commercial Financing</b>	<ul style="list-style-type: none"> <li>• Participating Commercial Banks                             <ul style="list-style-type: none"> <li>◇ Cr�dit Agricole CIB – Mandated lead arranger, bookrunner, FX hedge, green guarantee provider</li> <li>◇ HSBC</li> <li>◇ SMBC</li> <li>◇ Mitsubishi UFJ Financial Group (MUFG)</li> <li>◇ Mizuho</li> <li>◇ Deutsche Bank</li> <li>◇ ANZ</li> <li>◇ Standard Chartered</li> <li>◇ DBS</li> <li>◇ Korea Development Bank (KDB)</li> <li>◇ Shinsei Bank</li> <li>◇ CTBC Bank</li> <li>◇ Fubon Bank / Fubon Life</li> <li>◇ Taiwan Life Insurance</li> </ul> </li> <li>• Financial Details                             <ul style="list-style-type: none"> <li>◇ Total amount – US\$ 3.6 billion</li> <li>◇ Type: Long-term, non-recourse green financing</li> <li>◇ Tenor: 20-year duration - the longest in Taiwan offshore wind industry</li> </ul> </li> </ul>
<b>Equity Financing</b>	<ul style="list-style-type: none"> <li>• Northland Power, Inc. (NPI) – 60%</li> <li>• Mitsui &amp; Co (“Mitsui”) – 40%</li> </ul>

Source: Climate Smart Ventures



**Poland**

Poland has set offshore wind targets of 5.9 GW by 2030 and between 8 and 11 GW by 2040, though these are expected to be revised upward. The first wave of offshore wind projects is in the late stage of development and pre-construction. The government has announced multiple auctions aimed at building a pipeline of up to 18 GW of offshore wind capacity at various stages of development by the end of the decade. While Poland currently has no operational offshore wind turbines, the 1.1 GW Baltic Power project reached financial close in 2023 and is expected to begin operations in 2026.

Poland’s nascent offshore wind industry has attracted blended finance, with support from DFIs/MDBs and ECAs, helping to reassure international lenders and local commercial banks, as illustrated by the Baltic Power case.

**CASE STUDY**

**Baltic Power (1,140 MW), Poland**

Poland’s first large-scale OFW project, Baltic Power (1.14 GW), demonstrates the nation’s ambition to reach 5.9 GW of offshore wind by 2030 and up to 11 GW by 2040. Situated 23 km off the Baltic coast and costing €4.5 billion, the project is led by Orlen (51%) and Northland Power (49%), with construction commencing in 2024 and full operations planned for 2026. The project secured a 25-year inflation-indexed contract for difference (CfD), supporting stable revenues and facilitating financing. The financing attracted 25 global and local banks and ECAs, making Baltic Power a landmark model for future offshore wind projects in Poland. Although the MDB financing was not below-market rate, it still likely provided a “halo effect,” encouraging other financial institutions to participate.



Source: Cadeler, 2023

### CASE STUDY: Baltic Power (continued)

The Baltic Power project clearly demonstrates how crucial the choice of currency denomination is in making large-scale renewable projects bankable. Initially, the Polish Zloty-denominated CfD structure did not attract sufficient investor interest due to concerns about exchange rate volatility and limited local currency liquidity. By switching to a Euro-denominated CfD, Poland was able to tap into deeper and more affordable Euro financing markets, facilitating strong international participation and competitive project financing.

#### Poland Baltic Power Financing

<b>Multilateral Financing*</b>	<ul style="list-style-type: none"> <li>• European Investment Bank (EIB): US\$ 664 million (approximately EUR 610 million) backed by InvestEU</li> <li>• European Bank for Reconstruction and Development (EBRD): US\$ 272 million (approximately EUR 250 million)</li> </ul>																				
<b>Export Credit Agencies</b>	<ul style="list-style-type: none"> <li>• ECA-backed tranche included, supported by:                             <ul style="list-style-type: none"> <li>◊ Export Development Canada (EDC)</li> <li>◊ Export and Investment Fund of Denmark (EIFO)</li> <li>◊ Euler Hermes (now Allianz Trade) for Germany</li> </ul> </li> </ul>																				
<b>Commercial Financing</b>	<ul style="list-style-type: none"> <li>• US\$ 2.98 billion (approximately EUR 2.74 billion) with a 20-year tenor, reportedly priced at a spread of 170 to 190 basis points over the reference rate.</li> <li>• The project operates under a 25-year Euro-pegged and inflation-indexed Contract for Difference (CfD) revenue arrangement with a strike price of PLN 319.6/MWh (EUR 7.81/MWh)</li> <li>• Arranged by the following lenders:                             <table border="0" style="width: 100%; margin-left: 20px;"> <tr> <td>◊ Bank Gospodarstwa Krajowego (BGK)</td> <td>◊ HSBC</td> </tr> <tr> <td>◊ Bank Pekao</td> <td>◊ ING</td> </tr> <tr> <td>◊ BayernLB</td> <td>◊ KfW IPEX</td> </tr> <tr> <td>◊ BNP Paribas</td> <td>◊ Helaba</td> </tr> <tr> <td>◊ Banco Santander</td> <td>◊ National Bank of Canada</td> </tr> <tr> <td>◊ Caixa</td> <td>◊ PKO Bank</td> </tr> <tr> <td>◊ Rabobank</td> <td>◊ Santander</td> </tr> <tr> <td>◊ Crédit Agricole</td> <td>◊ SMBC</td> </tr> <tr> <td>◊ DNB</td> <td>◊ Société Générale</td> </tr> <tr> <td>◊ Erste Group Bank</td> <td>◊ Standard Chartered</td> </tr> </table> </li> </ul>	◊ Bank Gospodarstwa Krajowego (BGK)	◊ HSBC	◊ Bank Pekao	◊ ING	◊ BayernLB	◊ KfW IPEX	◊ BNP Paribas	◊ Helaba	◊ Banco Santander	◊ National Bank of Canada	◊ Caixa	◊ PKO Bank	◊ Rabobank	◊ Santander	◊ Crédit Agricole	◊ SMBC	◊ DNB	◊ Société Générale	◊ Erste Group Bank	◊ Standard Chartered
◊ Bank Gospodarstwa Krajowego (BGK)	◊ HSBC																				
◊ Bank Pekao	◊ ING																				
◊ BayernLB	◊ KfW IPEX																				
◊ BNP Paribas	◊ Helaba																				
◊ Banco Santander	◊ National Bank of Canada																				
◊ Caixa	◊ PKO Bank																				
◊ Rabobank	◊ Santander																				
◊ Crédit Agricole	◊ SMBC																				
◊ DNB	◊ Société Générale																				
◊ Erste Group Bank	◊ Standard Chartered																				
<b>Equity Financing</b>	<ul style="list-style-type: none"> <li>• US\$ 980 million (approximately EUR 900 million) in equity came from:                             <ul style="list-style-type: none"> <li>◊ Northland Power – 49%   US\$ 480 million (approximately EUR 441 million)</li> <li>◊ Orlen – 51%   US\$ 500 million (approximately EUR 458 million)</li> </ul> </li> </ul>																				

Source: Climate Smart Ventures | \*Non-concessional loan

The Poland Baltic Power case highlights a critical lesson for markets such as the Philippines, Vietnam, and other emerging markets:

- While local currency pricing can protect consumers from currency fluctuations, it may significantly restrict access to international capital and raise financing costs.
- Emerging markets should carefully evaluate whether to denominate offtake agreements in foreign currencies to attract global investors, while simultaneously designing policies to manage and transparently allocate the resulting currency risk, such as gradual tariff adjustments or hedging strategies.
- This balanced approach can help accelerate renewable energy deployment while safeguarding long-term affordability for consumers.

**APPENDIX C**

# Stakeholders in Offshore Wind in the Philippines and Vietnam

The table in Appendix C identifies key institutions in each stakeholder category for the Philippines and Vietnam. In some cases, institutions are included as potential stakeholders based on their relevance, even if they are not yet active in the OFW sector. The table also includes other key actors in the offshore wind ecosystem such as grid operators, supply chain and service providers, technical and professional consultants, local communities and civil society groups, and academic and research institutions.

**Table 8.**  
Stakeholders in OFW in the Philippines and Vietnam

Stakeholder Category	Key Roles & Responsibilities	Philippines Examples (non-exhaustive)	Vietnam Examples (non-exhaustive)
Policy Makers	<ul style="list-style-type: none"> <li>Set National Strategy: Establish national energy targets, create long-term roadmaps for offshore wind, and integrate it into the country's overall power development plan.</li> <li>Develop Legal Framework: Draft and pass laws and executive orders that govern renewable energy and foreign investment.</li> </ul>	<ul style="list-style-type: none"> <li>DOE</li> <li>Congress of the Philippines</li> <li>Office of the President</li> </ul>	<ul style="list-style-type: none"> <li>The Politburo / Central Committee</li> <li>The National Assembly</li> <li>The Government Office</li> </ul>
Regulators	<ul style="list-style-type: none"> <li>Award Project Rights: Manage the application and awarding process for site leases or service contracts that grant developers the right to build projects.</li> <li>Issue Permits &amp; Licenses: Oversee the complex permitting process, including environmental compliance, grid connection approvals, and construction permits.</li> <li>Set Tariffs &amp; Market Rules: Design and implement tariff structures (e.g., feed-in-tariffs, auctions) and electricity market rules that govern how projects sell power.</li> </ul>	<ul style="list-style-type: none"> <li>DOE</li> <li>DENR</li> <li>Energy Regulatory Commission (ERC)</li> <li>National Commission on Indigenous Peoples (NCIP)</li> <li>Local Government Units (LGUs)</li> </ul>	<ul style="list-style-type: none"> <li>MOIT</li> <li>Ministry of Agriculture &amp; Environment (MAE)</li> <li>Provincial People's Committees</li> </ul>
Developers	<ul style="list-style-type: none"> <li>Project Initiation &amp; Management: Lead the entire project lifecycle from initial site selection and feasibility studies to construction and operation.</li> <li>Secure Financing &amp; Expertise: Raise the necessary capital and bring in technical, engineering, and managerial expertise.</li> <li>Manage Risks: Assume and manage the primary development, construction, and operational risks of the project.</li> </ul>	<ul style="list-style-type: none"> <li>ACEN Corporation</li> <li>Copenhagen Infrastructure Partners</li> <li>The Blue Circle</li> <li>Corio Generation</li> <li>Triconi ECC</li> <li>Nexif Ratch</li> </ul>	<ul style="list-style-type: none"> <li>PetroVietnam (PVN) (State-owned)</li> <li>Copenhagen Infrastructure Partners</li> <li>Vin Group</li> <li>Enterprize Energy</li> <li>REE</li> </ul>

Table 8. (continued)

Stakeholders in OFW in the Philippines and Vietnam

Stakeholder Category	Key Roles & Responsibilities	Philippines Examples (non-exhaustive)	Vietnam Examples (non-exhaustive)
ECAs	<ul style="list-style-type: none"> <li>Provide government-backed loans &amp; insurance.</li> <li>Tie financing to the procurement of goods/ services from their home country.</li> <li>Lower the overall cost of capital for a project.</li> </ul>	<ul style="list-style-type: none"> <li>Export and Investment Fund of Denmark (EIFO)</li> <li>UK Export Finance (UKEF)</li> <li>SACE (Italy)</li> </ul>	<ul style="list-style-type: none"> <li>Export and Investment Fund of Denmark (EIFO)</li> <li>K-SURE / KEXIM (South Korea)</li> <li>JBIC</li> <li>UKEF</li> </ul>
DFIs / MDBs	<ul style="list-style-type: none"> <li>De-risk projects with concessional loans &amp; guarantees.</li> <li>Provide technical assistance for policy &amp; roadmaps.</li> <li>Act as an anchor investor to attract private capital.</li> </ul>	<ul style="list-style-type: none"> <li>Asian Development Bank (ADB)</li> <li>World Bank / IFC</li> </ul>	<ul style="list-style-type: none"> <li>World Bank / IFC</li> <li>ADB</li> <li>Agence Française de Développement (AFD)</li> <li>KfW (Germany)</li> </ul>
Other Financial Institutions (commercial banks etc.)	<ul style="list-style-type: none"> <li>Provide the majority of project finance debt.</li> <li>Act as financial advisors to structure deals.</li> <li>Offer risk management (hedging) and capital market services (e.g., green bonds).</li> <li>Provide first loss capital, private credit, etc.</li> </ul>	<ul style="list-style-type: none"> <li><b>Local:</b> BDO Unibank, Bank of the Philippine Islands, Metrobank</li> <li><b>International:</b> Hongkong and Shanghai Banking Corporation (HSBC), Standard Chartered, Development Bank of Singapore (DBS), Mitsubishi UFJ Financial Group (MUFG)</li> </ul>	<ul style="list-style-type: none"> <li><b>Local:</b> Vietcombank, VietinBank, Techcombank</li> <li><b>International:</b> HSBC, Standard Chartered, BNP Paribas</li> </ul>
Insurance Providers	<ul style="list-style-type: none"> <li>Assess risks involved in both the construction and operational phases and provide financial protection against potential losses in exchange for premiums</li> <li>Approval and commitment of insurance companies are a prerequisite for reaching financial close.</li> <li>International Insurance Brokers act as advisors to developers and arrange the insurance coverage</li> <li>Global Insurers &amp; Reinsurers are the ultimate risk-takers with the financial capacity and technical expertise to underwrite offshore wind projects</li> <li>Potential Local Insurance Partners: often required to "front" the policy, working in partnership with the global players listed above</li> </ul>	<ul style="list-style-type: none"> <li><b>International Insurance Brokers:</b> Aon, Marsh, Willis Towers Watson (WTW)</li> <li><b>Global Insurers &amp; Reinsurers:</b> Allianz Global Corporate &amp; Specialty (AGCS), AXA XL, Liberty Mutual, Swiss Re, Munich Re, Various syndicates within the Lloyd's of London market, Zurich Insurance Group</li> <li><b>Potential Local Insurance Partners:</b> Malayan Insurance, Pioneer Insurance &amp; Surety Corporation, BPI/MS Insurance Corporation, FPG Insurance</li> </ul>	<ul style="list-style-type: none"> <li><b>International Insurance Brokers:</b> Aon, Marsh, WTW</li> <li><b>Global Insurers &amp; Reinsurers:</b> AGCS, AXA XL, Liberty Mutual, Swiss Re, Munich Re, Various syndicates within the Lloyd's of London market, Zurich Insurance Group</li> <li><b>Potential Local Insurance Partners:</b> Bao Viet Insurance, PVI Insurance (PetroVietnam Insurance), Bao Minh Insurance Corporation, PTI (Post-Telecommunication Joint Stock Insurance Corp.)</li> </ul>
Grid Operators	<ul style="list-style-type: none"> <li>Manage Grid Connection: Plan and execute the necessary grid upgrades and transmission infrastructure to connect the offshore wind farm to the national grid.</li> <li>Ensure System Stability: Manage the integration of variable renewable energy inWto the grid to maintain a stable and reliable electricity supply.</li> </ul>	<ul style="list-style-type: none"> <li>National Grid Corporation of the Philippines (NGCP)</li> </ul>	<ul style="list-style-type: none"> <li>Vietnam Electricity (EVN)</li> </ul>

**Table 8. (continued)**

Stakeholders in OFW in the Philippines and Vietnam

Stakeholder Category	Key Roles & Responsibilities	Philippines Examples (non-exhaustive)	Vietnam Examples (non-exhaustive)
Supply Chain & Service Providers	<ul style="list-style-type: none"> <li>• <b>Manufacture &amp; Procure Components:</b> Supply all physical parts, from turbines and foundations to cables and substations.</li> <li>• <b>Provide Construction &amp; Installation Services:</b> Offer the specialized maritime vessels, logistics, and labour required to build the wind farm at sea.</li> <li>• <b>Operations &amp; Maintenance:</b> Provide long-term technical services to keep the wind farm running efficiently.</li> </ul>	<ul style="list-style-type: none"> <li>• First Balfour (Engineering &amp; Construction)</li> <li>• Atlantic, Gulf and Pacific Company (AG&amp;P)</li> <li>• Local maritime /shipping companies</li> </ul>	<ul style="list-style-type: none"> <li>• PTSC (PetroVietnam Technical Services Corp.)</li> <li>• CS Wind (Tower manufacturing)</li> </ul>
Technical & Professional Consultants	<ul style="list-style-type: none"> <li>• <b>Provide Specialized Expertise:</b> Conduct critical technical assessments (wind, geological, environmental), engineering design, and legal &amp; financial advisory.</li> <li>• <b>Ensure Compliance &amp; Quality:</b> Perform independent verification and due diligence to ensure projects meet technical, environmental, and social standards.</li> </ul>	<ul style="list-style-type: none"> <li>• International technical consultants: Arup, DNV, Ramboll, etc.</li> <li>• Local environmental consulting firms</li> <li>• Local law firms: Divina Law, Puno &amp; Puno, Romulo Mabanta, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Consultants: DNV, Arup, ERM, etc.</li> <li>• Local survey and legal advisory firms</li> </ul>
Local Communities & Civil Society	<ul style="list-style-type: none"> <li>• <b>Grant Social License to Operate:</b> Engage in consultations to provide or withhold community acceptance, which is crucial for project success. Concerns often involve livelihoods (especially fishing), environment, and benefit-sharing.</li> <li>• <b>Act as Watchdogs:</b> Non-governmental organizations (NGOs) advocate for environmental protection and community rights, monitoring projects for compliance.</li> </ul>	<ul style="list-style-type: none"> <li>• Local Government Units (LGUs)</li> <li>• Fisherfolk Cooperatives</li> <li>• WWF-Philippines</li> <li>• Center for Energy, Ecology, and Development (CEED)</li> <li>• Institute for Climate and Sustainable Cities (ICSC)</li> </ul>	<ul style="list-style-type: none"> <li>• Provincial /District People's Committees</li> <li>• Vietnam Fisheries Society (VINAFIS)</li> <li>• WWF-Vietnam</li> </ul>
Academia & Research Institutions	<ul style="list-style-type: none"> <li>• <b>Develop Human Capital:</b> Train the next generation of engineers, technicians, and scientists needed for the industry.</li> <li>• <b>Conduct Local Research:</b> Provide essential data and analysis on local marine ecosystems, wind patterns, and the socio-economic impacts of development.</li> </ul>	<ul style="list-style-type: none"> <li>• University of the Philippines (Marine Science Institute, College of Engineering)</li> <li>• Mapúa University</li> </ul>	<ul style="list-style-type: none"> <li>• Hanoi University of Science and Technology</li> <li>• Vietnam Petroleum Institute (VPI)</li> <li>• Institute of Energy</li> </ul>

## APPENDIX D

# Mapping on DFI/MDB Products that Have Been Extended to Offshore Wind

Specific policy on OFW development publicly available		Products for RE generally	Industry research report / articles to support OFW development	Technical assistance / Pre-feasibility assistance for OFW	Grant financing for OFW projects	Debt (concessional or commercial as specified) for OFW projects	Equity for OFW projects	Guarantees for OFW projects	Trade and supply chain finance	Financing for OFW related infrastructure
ADB	Energy Policy 2021 on Offshore Wind – States that ADB will champion the deployment of offshore wind power, among other cleaner power systems	Concessional finance, commercial finance, guarantees, trade and supply chain finance, grants, technical assistance	✓	✓	X	X	X	X	X	X
AiIB	Specific focus on supporting and investing in OFW farm vessels	Equity and special fund windows to provide funding for target groups, such as the Global Infrastructure Facility Special Fund, which provides technical assistance grants for the design and preparation for climate infrastructure programmes.	✓	X	X	X	X	X	X	✓ <sup>A</sup>
BII	X	Technical assistance, trade and supply chain finance, equity, debt inc. senior, junior or subordinated debt, mezzanine / convertible debt, concessional debt, bridge loan, off-balance sheet funding, carbon finance	X	X	X	X	X <sup>B</sup>	X	X	X
FMO	2022 Climate Action Plan states that FMO will continue financing utility scale clean energy generation projects, with an increased attention towards that least developed countries and fragile states	Syndicated loans, project financing, concessional finance, grants, technical support	X	X	X	X	X <sup>B</sup>	X	X	X

## Legend

A: OFW farm vessels

B: but invested in onshore wind

## Abbreviations

ADB: Asian Development Bank

AiIB: Asian Infrastructure Investment Bank

BII: British International Investment

FMO: FMO Dutch Development Bank

Specific policy on OFW development publicly available		Products for RE generally	Industry research report / articles to support OFW development	Technical assistance / Pre-feasibility assistance for OFW	Grant financing for OFW projects	Debt (concessional or commercial as specified) for OFW projects	Equity for OFW projects	Guarantees for OFW projects	Trade and supply chain finance	Financing for OFW related infrastructure
JICA	X	Debt, equity, project financing, concessional finance, grants, technical support	X	X	X	X	X	X	X	X
JBIC	X	Loans, equity, guarantees	✓	X	X	✓	X	X	X	X
KfW / DEG	The Offshore Wind Energy Programme focuses on project finance transactions. It is for the construction of offshore wind farms in the German EEZ, or the 12-mile coastal zone in the North and Baltic Seas.	Long-term loans, equity investments, mezzanine funds, bonds and technical assistance	X	X	X	✓ <sup>C</sup>	X	X	X	X
WB / IFC	The joint ESMAP-IFC Offshore Wind Development Program's sole objective is to accelerate the uptake of OFW in emerging markets. It supports the inclusion of OFW into the energy sector policies and strategies of World Bank Group client countries.	Loans, equity, credit enhancements, transaction advisory, capacity building, IFC can provide and mobilise senior debt with long maturities, fixed or floating rates, local currencies and flexible amortisation profiles, and subordinated debt with terms tailored to meet project needs.	✓	✓	X	X	X	X	X	X

**Legend**

**C:** loan but unknown if concessional

**Abbreviations**

**JICA:** Japan International Cooperation Agency  
**JBIC:** Japan Bank for International Cooperation  
**KfW / DEG:** KfW Development Bank / German Investment Corporation  
**WB / IFC:** World Bank and International Finance Corporation

**APPENDIX E**

# Illustrative Project Timeline for an Archetype 500MW Offshore Wind Project

Scenarios	Project Timeline						
	AUG 2025 -JUL 2028	AUG 2028 -JUL 2030	AUG 2030 -JUL 2040	AUG 2040 -JUL 2043	AUG 2043 -JUL 2048	AUG 2048 -JUL 2052	AUG 2052 -JUL 2054
<b>Imperfect, commercially viable PPA with elevated risk premiums</b> (Scenario 1)							
Construction Period	[Teal bar]						
Operational Period		[Yellow bar]					
Decommissioning					[Red bar]		
<b>Commercially viable PPA – Only Commercial debt + equity</b> (Scenario 2)							
Construction Period	[Teal bar]						
Operational Period		[Yellow bar]			[Yellow bar]		
Decommissioning						[Red bar]	
<b>Imperfect, commercially viable PPA with concessional support</b> (Scenario 3)							
Construction Period	[Teal bar]						
Operational Period		[Yellow bar]			[Yellow bar]		
Decommissioning						[Red bar]	
<b>Commercially viable PPA - concessional + commercial + equity + ECA guarantee</b> (Scenario 4)							
Construction Period	[Teal bar]						
Operational Period		[Yellow bar]			[Yellow bar]	[Yellow bar]	
Decommissioning							[Red bar]

**Legend**



## APPENDIX F

# Key Assumptions Underpinning the Financial Model Results

## 1. Data Collection and Input Assumptions

The financial modelling process began with an extensive desk-based research phase paired with expert consultations, incorporating:

### a. Desktop Research

Inputs from Global Wind Energy Council (GWEC) reports, IFC case studies, local regulatory frameworks, and previous offshore wind projects from other countries including from Taiwan and Poland.

### b. Client and Stakeholder Input

Feedback and assumptions drawn from client consultations and domain experts to ensure practical relevance.

### c. Lessons Learned

Insights from case studies of prior OFW projects highlighting key financing and operational risk parameters.

## 2. Interest Rate and Cost of Capital Calculations

### a. Debt Pricing

**Commercial Debt:** Since there are no comparable offshore wind project transactions in these regions, the cost of debt has been estimated using the average of two approaches for both the Philippines and Vietnam, as described below:

#### 1 Rate of Interest in Local Borrowing

**1.a Philippines:** PHP BVAL (10-year)<sup>33</sup> + an ad hoc premium of 1.5% to account for project-specific (construction and operational) risks; or

**1.b Vietnam:** All-in interest rate provided by GWEC (based on their internal assessment of the region)

#### AND

#### 2 Rate derived from build-up approach

**2.a** Risk-free rate: US treasuries 10 years, plus

**2.b** Applicable country risk premium (CRP), and adjusted default spread<sup>35</sup>, plus

**2.c** Currency risk premium<sup>36</sup>, plus

**2.d** An ad hoc premium of 1.5% to account for project-specific (construction and operational) risks

**Concessional Debt:** Pricing is determined by averaging the Asian Development Bank's<sup>37</sup> lending rates for countries such as Vietnam and the Philippines for loan tenors exceeding 20 years, together with the current US 10-year Treasury Yield<sup>28</sup>

<sup>33</sup> PHP BVAL (10 years) reference rate as on 03rd October 2025  
<https://www.pds.com.ph>

<sup>34</sup> US treasuries rate (10 years) as on 02nd October 2025.

Daily Treasury Par Yield Curve Rates

<sup>35</sup> Damodaran, Country Default Spreads and Risk Premiums

<sup>36</sup> Currency Risk Premium = Forward Premium – Interest Rate Differential

<sup>37</sup> Asian Development Bank, Lending Policies and Rates,  
<https://www.adb.org/what-we-do/public-sector-financing/lending-policies-rates>

**b. Cost of Debt (kd):**

Estimated effective interest rate on the overall debt profile.

**c. Cost of Equity (ke):****c.1 Philippines:**

Estimated using the Capital Asset Pricing Model (CAPM):

$$\text{Cost of Equity} = R_f + CRP + (MRP \times \beta)$$

Where  $R_f$  is the risk-free rate – Benchmarked to 10 Years US Treasury Yield<sup>28</sup>,  $CRP$ <sup>29</sup>,  $MRP$ <sup>29</sup> - the market risk premium, and  $\beta$ <sup>38</sup> – Beta for the renewable projects.

**c.2 Vietnam:**

We have assumed it to be ~15%, based on our discussions on cost of equity expectations for renewable energy companies prevailing in the local market.

**d. Weighted Average Cost of Capital (WACC):**

$$WACC = D/V * \text{Post Tax } kd + E/V * ke$$

( $D/V$  = Proportion of project funded by debt and

$E/V$  = Proportion of project funded by equity)

**3. PPA Tenor and Debt Repayment Profiles****a. Tenor Assumptions**

For imperfect commercially viable PPAs, the tenor is typically capped at 15 years to reflect higher project risk and limited lender confidence. However, when concessional finance is introduced to support such projects, it helps instil confidence among commercial lenders, allowing the PPA tenor to be extended to around 20 years.

For commercially viable PPAs with stronger credit profiles and effective risk mitigation measures, the PPA tenor may further extend up to 25 years, better aligning with the offshore wind asset life and ensuring stable long-term revenue visibility.

Asset life is assumed to be equivalent to the tenor of the PPA, underscoring the intention to utilise the assets at maximum efficiency throughout the operational period. Capacity factors for the regional project vary, and these differences are being accounted for<sup>39</sup>.

**b. Debt Repayment Modelling**

Modelled with a back-ended amortization profile, enabling lower initial repayments to stabilize early cash flows and avoid financial strain during ramp-up phases. Ballooning repayments occur near the end of the tenor, typical for infrastructure financing.

<sup>38</sup> Damodaran, Total Betas by Sector (for computing private company costs of equity) - US, [https://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/datafile/totalbeta.html](https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/totalbeta.html)

<sup>39</sup> Information provided by GWEC for both regions, Philippines and Vietnam.

#### 4. Tariff Determination Methodology

For each financing scenario and country, tariffs were “goal-seeked” or back-solved based on a fixed minimum equity IRR matching the target cost of equity for either the Philippines or Vietnam, allowing the model to assess tariff levels compatible with required investor returns.

#### 5. CAPEX, OPEX, Impact of Export Credit Guarantees (ECGs), and Currency Risk

- a. Capital and operating costs were benchmarked against information provided by GWEC<sup>40</sup>.
- b. Inclusion of ECGs, alongside concessional finance, is modelled as resulting in a 120-basis points reduction in the all-in interest rates, reflecting lower perceived risk by commercial lenders.
- c. The financial model has been developed using region-specific inputs, with values expressed in US dollars solely to provide a consistent basis for communication. We have not modelled currency indexation separately, as this would introduce additional complexity and does not align with prevailing market practice. Instead, the resulting tariff has been translated back into local currency.
- d. A blanket assumption is made to reserve a balance of \$20 million as equity in the initial years across all scenarios. This amount is intended to cover upfront expenses associated with securing ECG facilities.

<sup>40</sup> TOR for Vietnam's Interim Competitive Investor Selection Process  
- CAPEX and OPEX Analysis



**For any questions, please contact:**

Janice Cheong  
Deputy Director, Asia  
[janice.cheong@gwec.net](mailto:janice.cheong@gwec.net)

