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# Offshore Wind in Vietnam

## Harnessing the Country's Potential

# Abundance of Wind Resources

A recent study undertaken by the World Bank concluded that Vietnam could see an increase in offshore wind power capacity of between 11 to 25GW by 2035, depending on the government's success in formulating and implementing the necessary policies to grow the industry.

According to the World Bank study, 25GW of wind capacity by 2035 would be sufficient to meet 12% of the country's electricity needs, and in the process add at least USD50 billion to Vietnam's economy by stimulating the growth of a strong, local supply chain – potentially creating thousands of skilled jobs and offshore wind related exports to other global markets.

Further, renewable energy developers globally are increasingly looking to incorporate green hydrogen production capabilities with utility-scale wind and solar assets, particularly offshore wind installations. Vietnam, with world-class wind energy resources and maritime proximity to major East Asian markets, is well placed to capitalise on the coming green fuels wave.

## Early Progress

Vietnam currently has 18 offshore wind projects in operation, though all of these are located near-shore in relatively shallow waters.

A growing number of domestic and international developers are exploring the country's offshore wind opportunities, and a pipeline of larger-scale deep-water offshore wind developments could begin coming online in the foreseeable future.

Notable examples include the 1.4GW Phu Cong Soc Trang offshore wind power project being developed by Ireland based Mainstream Renewable Power (into which Japan's Mitsui is reported to be purchasing a 27.5% equity stake) and Vietnam based Phu Cuong Group, and the proposed 3.9GW offshore wind farm announced in November 2021 by Danish offshore wind developer Ørsted to be located south-east of Bach Long Vy island.

Norwegian developer Equinor recently entered into a memorandum of understanding with PetroVietnam to jointly research and develop offshore wind projects in Vietnam, and earlier in September 2021, Ørsted also announced that it had signed a memorandum of understanding with Vietnam based T&T Group to co-develop offshore wind projects off the coasts of Binh Thuan and Ninh Thuan provinces.

Singapore based Enterprize Energy announced in mid-2021 plans to develop the USD 11.9 billion Thang Long offshore wind power project in Binh Thuan province (with potential for green hydrogen production capabilities).

# Key Challenges

The potential is great, but as usual, success will be hard-won. The market remains at a very early stage and there are a number of challenges which will need to be overcome before larger-scale offshore wind projects can be successfully implemented.

## PPA TEMPLATE AND GOVERNMENT GUARANTEE

One of the most well documented challenges remains the form of PPA set out in Circular No. 02/2019/TT-BCT of the Ministry of Industry and Trade ("**MOIT**") dated 15 January 2019, as amended ("**Circular No. 02**"), which would apply to offshore wind projects. That form does not reflect the risk allocation typical for international PPAs (or indeed the PPAs for the large thermal projects developed in Vietnam under the previous BOT scheme) and the MOIT is generally resistant to allowing any substantive amendments.

Whilst the PPA has been successfully banked in both the solar and onshore wind space with appropriately structured financings, the increased scale and complexity of large-scale offshore wind projects will represent a new challenge. Securing limited recourse foreign currency denominated project financing for such projects is going to require amendments to the PPA risk allocation necessary to more closely align it with international best practice.

Another key challenge is the lack of any entitlement to obtain a government guarantee.

Prior to 1 January 2021, projects developed under the BOT scheme had an automatic entitlement to a government guarantee covering both Electricity Vietnam's ("**EVN**") payment obligations under the PPA and MOIT's obligations under the concession agreement. However, under the new PPP Law for BOTs[1] and new Investment Law for IPPs,[2] both of which came into effect on 1 January 2021, there is no longer such automatic entitlement to a government guarantee. Decree No. 31/2021/ND-CP of the Government dated 26 March 2021 ("**Decree No. 31**") on the implementation of the Investment Law does however give the Prime Minister discretion to provide security to projects under the IPP scheme, which can potentially include government guarantees.

To date no government guarantee has been issued under Decree No. 31, but investors are closely monitoring the progress of this issue on the various LNG-to-power projects currently being developed under the IPP scheme. The industry's expectation is that large-scale offshore wind projects may also be developed under the IPP scheme and therefore the availability (or not) of guarantees on those LNG-to-power projects will be pertinent.

## TARIFF – MOVE TOWARDS A BIDDING MECHANISM

In 2018 the MOIT introduced a feed in tariff ("**FIT**") of USD0.098/kWh for all offshore wind projects which achieve commercial operations before 1 November 2021. Though this FIT has been successful in encouraging the completion of a number of intertidal near-shore wind projects, it was generally perceived to be too low for larger-scale deep-water offshore wind projects, where development costs are significantly higher.

With the FIT having now expired, the Prime Minister has made clear that the country will replace it with an auction based system whereby the tariff for each wind power project will be determined by competitive bidding.

The MOIT is still in the process of developing these new bidding regulations, and it is unclear what the proposed auction system will entail or when it will be finalised.

However, critics expect the introduction of a competitive bidding mechanism to potentially slow down the development of solar and wind projects in the country, where internal rates of return for developers of onshore projects are forecasted to decrease from 18%–22% under the previous FIT mechanism to 8.2%–11% under the bidding mechanism.

It is generally acknowledged that an attractive FIT in jurisdictions such as Taiwan has been primarily responsible for accelerating the development of major offshore wind projects. Vietnam's move

1 Private Partnership Investment No. 64/2020/QH14.

2 Law on Investment No. 61/2020/QH14.

towards a bidding mechanism at a time when the offshore wind industry remains at a nascent stage could have a counter-effect.

As such there are increasing calls for Vietnam to consider a more transitioned approach for offshore wind in order to allow a critical mass of initial projects to move ahead with the benefit of a FIT, with a subsequent transitioning to a bidding mechanism once the market is more mature. It remains to be seen to what extent such calls will be heeded.

## PDP8 AND COP26

In November 2021 Vietnam's Prime Minister announced at the United Nations Climate Change Conference ("**COP26**") that the country would target achieving net zero carbon emissions by 2050, and phase-out coal power generation by 2040.

At the time of writing however, the eagerly awaited eighth national power development plan ("**PDP8**") for the 2021 to 2030 period with a vision towards 2045 (and which is expected to encapsulate these ambitions) is yet to be finalised, after numerous delays.

The MOIT released in May this year an updated unofficial draft of PDP8, which is considerably 'greener' than the pre-COP26 draft. This latest draft outlines Vietnam's target for renewable energy to become the primary source of energy for the country, with an upper limit of 23GW of installed wind capacity by 2030 – 16GW to be derived from onshore or coastal wind projects and the remaining 7GW to be derived from offshore wind projects (representing an increase of 29% and a massive 250% respectively compared to the targets in the pre-COP26 draft).

These wind targets will further progressively increase to 55.95GW for onshore wind and 66.5GW for offshore wind by 2045.

Whether or not such targets are realistic remains an open question, but the scale of the ambition is clearly huge.

## GRID NETWORK CHALLENGES

Most of Vietnam's offshore wind resource is located in the south of the country, considerable distance from Hanoi and other key demand centres in the north of the country where the demand for electricity is now most acute.

Recent system modelling studies indicate that there is already grid congestion in and around high population density areas, straining existing local substations and transmission facilities. The curtailment issues encountered in certain parts of the country with respect to solar projects have also been well documented.

The planned addition of 7GW of offshore wind capacity to the energy mix by 2030 will only further strain existing grid resources, and extensive new grid capacity is urgently needed if Vietnam is to have any chance of realising these kinds of figures.

This fact is acknowledged in draft PDP8, with MOIT committing to build 86 GVAs of additional capacity for 500kV stations and nearly 13,000 km of transmission lines.

However, in its recent report the World Bank concluded that development of upgrades required to absorb 5 to 10GW of new offshore wind capacity will require at least 5 to 10 years of design, planning, and construction work. It is therefore imperative that MOIT initiates this process as a matter or priority, as lenders and developers may be hesitant to committing major time and resources to developing large-scale offshore wind projects until at least part of these planned grid upgrades have been successfully implemented.

Many of the proposed sites for offshore wind projects are also located at substantial distances from existing onshore connection points to the national grid. The current template PPA requires the generator to assume sole responsibility for constructing, operating and maintaining all transmission facilities required to connect to the national grid – a major investment for developers. A commitment by the MOIT to take the lead in expanding the grid and interconnection points closer to potential onshore landing points for the planned offshore projects (or to pay adequate compensation to developers to do the same) would provide much needed momentum.

Recent amendments to the Electricity Law (Law No. 03/2022/QH15) which came into effect in March this year suggest that investors of power

projects are now permitted to build, own, and operate transmission assets, which is a significant deviation from the previous position whereby EVN holds a complete monopoly over the transmission, distribution, and storage of electricity.

However, at this stage it is still not entirely clear how the amendments will be applied in practice and market participants are keenly awaiting the introduction of further clarifying guidelines.

If developers are permitted to fund, build and operate transmission lines, this may fast-track the upgrading of Vietnam's grid system and alleviate existing overload and curtailment issues, and there would likely be strong investment appetite from developer clients. However, political headwinds are also possible given the sensitivities around the involvement of the private sector in infrastructure as strategically important as the electricity grid.

For subsea transmission cables, note that existing regulations are unclear on whether developers will need to obtain a seabed lease or other form of permit covering the seabed/sea surface areas to be occupied by the subsea transmission cables, nor do they make clear the process for issuing such permits.

## LIMITED RISK SHARING WITH GOVERNMENT

At present there is limited risk sharing between the government and offshore wind developers, who are expected to shoulder all early-stage development responsibilities and associated costs, even if a project does not ultimately proceed to construction.

Vietnam adopts an "open door" approach to offshore wind development, underpinned by the principle that the developer is solely responsible for all steps during the project development process, including site selection; carrying out a feasibility study (involving costly wind measurement campaigns and environmental impact assessments); applying for permits; managing the public consultation process; and resolving complaints from local residents (see Figure 1 below for the typical steps in developing an offshore wind project in Vietnam).

# Permitting Process – Figure 1

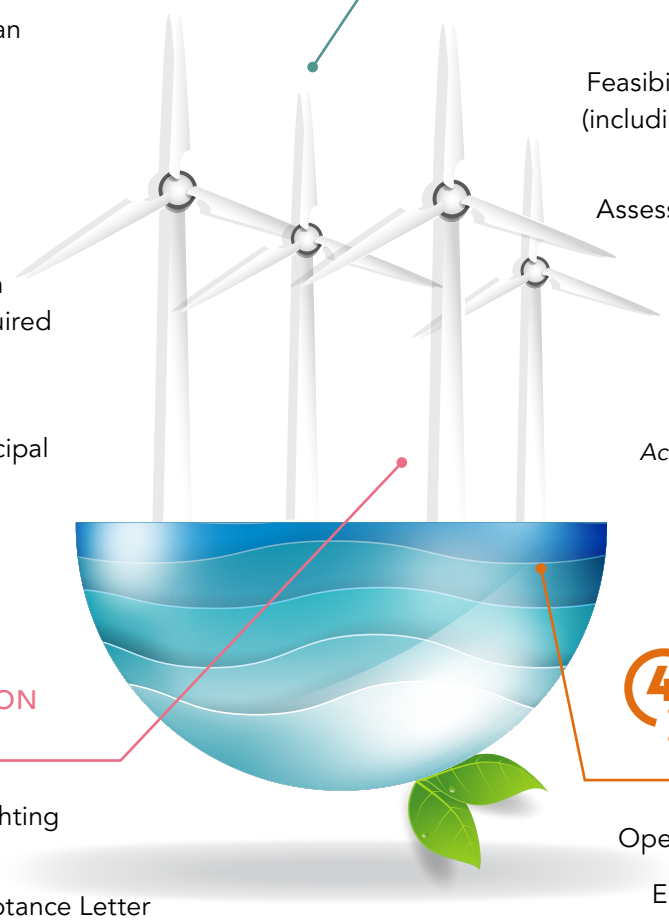
The sequence below provides a general high-level overview of the key permitting and regulatory steps currently applicable to offshore wind power projects in Vietnam. It is anticipated that the below sequence may change pending the introduction of further offshore wind specific legislation and regulatory instruments following the enactment of PDP8 in final form and associated confirmed offshore wind capacity targets to 2030 and 2045. It should also be noted that the development of offshore wind projects is cross-regulated by multiple (and sometimes conflicting) regulatory instruments and governing bodies, and each province may have a different view on what approvals are required and the order in which they are to be procured.

## 1 PRELIMINARY PROJECT DEVELOPMENT PHASE

- Letter of Site Exclusivity
- Pre-feasibility Study
- Power Development Plan Approval (National or Provincial Power Development Plan)
- In-Principle Investment Approval
- Investment Registration Certificate ("**IRC**") (required for foreign-invested projects)
- Preliminary PPA In-Principal Acceptance

## 2 PROJECT DEVELOPMENT PHASE

- Offshore Wind Turbine Location Approval
- Wind Turbine Height Approval
- Feasibility Study
- Feasibility Study Acceptance Letter (including approval of Basic Design)
- Environmental Impact Assessment (EIA) Report Approval
- Seabed Lease Approval
- Technical Agreements:
  - *Grid Connection Agreement*
  - *Metering Agreement*
  - *Supervisory Control and Data Acquisition Agreement (SCADA)*
  - *Protective Relay Agreement*
- Executed PPA



## 3 CONSTRUCTION PHASE

- Fire Prevention and Fighting Design Approval
- Technical Design Acceptance Letter
- Approved Detailed Design
- Construction Permit, or exempted, if eligible

## 4 OPERATION PHASE

- Operation License for Operators
- Electricity Generation License
- EVN confirmation of project completion

This "open door" development approach was adopted in Europe when offshore wind projects were in their early stages of development, but failed to create sufficient interest from developers who were less prepared to shoulder the entire burden of early development costs. Europe has since moved towards an approach whereby the government is actively involved in all stages of the development lifecycle, with governments taking the lead on site identification and the publication of zoning maps identifying potential areas for development.

## COMPLEX PERMITTING PROCESS/LACK OF SECTOR SPECIFIC REGULATIONS

Vietnam does not have in place specific regulations on the development of offshore wind projects. Current regulations are largely focused on onshore wind projects under Circular No. 02 and do not take into account the technical differences between onshore and offshore wind projects, particularly in relation to seabed lease rights, the legal status of floating and bottom-fixed offshore wind turbines, and the construction and operation of subsea transmission infrastructure.

In line with other Asia-Pacific jurisdictions, most recently Australia, we believe specific offshore wind legislation is required in Vietnam before the potential for large-scale offshore wind projects can be fully realised.

Developers are currently required to navigate through a relatively complex process of permit requirements, necessitating coordination with numerous governmental authorities at both national and provincial levels.

A streamlined permitting regime specific to offshore wind developments is yet to be enacted in Vietnam and the introduction of a transparent and simplified permitting process specific to offshore wind projects would serve to increase investor certainty.

## INITIAL SITE IDENTIFICATION AND WIND MEASUREMENT ACTIVITIES

To initiate the project development process, a developer must firstly identify a potential development site and obtain a "letter of site exclusivity" from the relevant provincial People's Committee.[3]This letter serves as a temporary lease allowing the developer to install measurement equipment and undertake wind measurement activities at the site as part of its pre-feasibility study. However, notwithstanding the stated exclusive nature of such letter, the safeguards against potential overlapping interests and procedure for resolution of the same remains unclear under Vietnam law.

Note also the letter of exclusivity does not amount to an exclusive right to use the site for the subsequent development of the project - this right is only secured after the project receives an "in-principal approval" from either the Prime Minister, the National Assembly or the Provincial People's Committee (and, if the sponsors are foreign entities, after an IRC has been issued).

## INCLUSION IN POWER DEVELOPMENT PLAN PRE-REQUISITE TO COMMENCING FEASIBILITY STUDY AND OBTAINING SEABED LEASE

Prior to undertaking a formal feasibility study (which is itself a condition to commencing an application for a seabed lease) the project must obtain approval for inclusion in the National Power Development Plan or relevant Provincial Wind Power Development Plan.

Obtaining power development plan approval can be a lengthy and complex process, and will require the preparation and submission of a site pre-feasibility study as well as the gathering of opinions from several authorities with respect to the proposed interconnection plan, power sources, and use of marine areas.

Complex issues unique to offshore wind projects will need to be considered by the MOIT when assessing power development plan applications, including whether or not the proposed project site interferes with current maritime shipping routes or existing oil and gas assets, overlaps with the territory of neighbouring states, as well as the project's potential impacts on aquaculture and the surrounding marine environment.

Once a project has been included in the power development plan, a feasibility study must be undertaken in order for the project to obtain a

3 Circular No. 02, Article 2.6

seabed lease. Circular No. 02, which covers the development of both onshore and offshore wind projects, sets out a high level, generic list of requirements to be covered in the feasibility study, with the feasibility study itself being required to be approved by MOIT or the provincial Department of Industry and Trade ("**DOIT**"). Circular No. 02 is not tailored to offshore wind projects, and it remains to be seen whether MOIT will release more specific guidelines addressing more comprehensively the development features of offshore wind projects.

## SEABED LEASE

Following the conclusion of the feasibility study referred to above, a project will need to apply for a seabed lease. Seabed leases are approved and registered pursuant to Decree No. 11/2021/ND-CP and can be approved by either the Prime Minister, the Ministry of Natural Resources and Environment ("**MONRE**"), or by the relevant Provincial People's Committee, depending on the project's location and distance from the shore, the project's size and whether the project has foreign investment or not. Generally, seabed leases for projects located beyond six nautical miles from the shore or projects with foreign investment are approved by the MONRE, while projects located within six nautical miles from the shore are approved by the Provincial People's Committee.

Approval of the seabed lease, including the lease term, is subject to the issuance of a permit for use of marine areas, which we understand is incorporated into the investment certificate or IRC for projects with foreign ownership.

We are not aware of any stand-alone permit for use of marine areas having been issued for projects to-date, and therefore it is unclear how domestically owned offshore wind projects (to which there is no investment certificate/IRC) will go about obtaining a seabed lease without this document.

The lease term under a seabed lease can be up to 30 years, or such other term set out in the permit for use of marine areas, and can be extended for up to an additional 20 years.

Whilst onshore wind projects that have been issued with land use rights by the relevant provincial governments are sometimes able to obtain an exception from the payment of land lease fees, we are not aware of this being the case for offshore wind projects. Under existing laws, offshore wind projects are required to pay seabed lease fees which range from US$128 to US$319 per hectare per annum. These seabed lease fees are calculated based on the seabed area set out in the approval for lease, and the developer can elect to make payment either annually or upfront for each five year period.

Also, unlike onshore projects where developers can grant security over land use rights in favour of onshore lenders and transfer their land use rights to third parties (provided that all land lease fees are paid upfront), developers of offshore wind projects do not have equivalent rights in respect of seabed leases.[4]

## DO OFFSHORE WIND TURBINES CONSTITUTE IMMOVABLE PROPERTY?

It is unsettled under Vietnamese law whether offshore wind turbines (either bottom-fixed or floating ) would be characterised as moveable or immovable property.

Questions remain as to whether or not the seabed can be deemed to be a form of "land", particularly in the context of assets which are not situated close to the coastline (i.e. beyond three nautical miles) and whether wind turbines that are moored to the seabed could be considered as a form of property "attached to the land".

This issue has implications for developers and their lenders, in that immovable property can generally only be mortgaged to domestic credit institutions and not foreign lenders. Contracts relating to immovable property are also required to be governed by Vietnamese law.

These issues are not new however, and given that the primary purpose of such security is defensive (i.e. to prevent other creditors from attaching to the project assets), international lenders on past projects have generally taken comfort from the negative pledge covenant in the finance documents and security over the shares in the project company.

4 Circular No. 198/2015/TTLT-BTC-BTNMT

### E&S STANDARDS

Existing legislation requires developers to prepare an environmental impact assessment (EIA) report for approval by MONRE for all offshore wind projects, though the World Bank has commented that these are generally not considered to meet the industry standards expected of international lenders.

In particular, there is currently no specific institutional framework for EIA Reports in respect of 'Marine Protected Areas'. Moreover, 'Key Biodiversity Areas' do not receive formal protection under existing Vietnamese legislation.

## Looking Ahead

The challenges to this fledgling industry in Vietnam are numerous, and it would be easy to become pessimistic about the prospects. However, it is worth remembering that such challenges are not necessarily unique to Vietnam, with various countries and regions across the world grappling with similar issues – for example stream-lining and fast-tracking an overly lengthy and burdensome approval process is a target of many, as is managing the grid issues inherent in bringing multi-GW of offshore wind projects online. There is global momentum to find solutions in this space.

Reform and clear policy formulation are needed in Vietnam, but with sufficient political will it is not inconceivable that this could occur relatively quickly, and whilst not always perfect, Vietnam does have a recent track-record in implementing such reforms to catalyse its renewables sector – offshore wind represents the next major frontier.

The growing number of development stage projects led by both domestic and "household name" foreign investors is encouraging, and with PDP8 imminent, and COP 27 later this year, we expect client interest only to increase.



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