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Wind Power Investment Guidelines

Volume 1: Project Development

Technical Assistance to the General Directorate of Energy
Ministry of Industry and Trade

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MOIT/GIZ Support to the Up-Scaling of Wind Power in Viet Nam

Citation:

Wind Power Investment Guidelines for Vietnam

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The MOIT/GIZ Energy Support Programme supports the Ministry of Industry and Trade and its General Department for Energy (GDE) in developing the renewable energy sector, and contributes to improving energy efficiency in Vietnam. Under the project “Support to the Up-Scaling of Wind Power in Vietnam”, MOIT and GIZ work together to establish legal and regulatory frameworks that encourage (private) investments into wind power, support developing capacities in the public and private sector through short- and long-term trainings, and contribute to increased research and private sector cooperation between Germany and Vietnam. The project runs from 2014-2018 with a total funding of EUR 6.9 million from the German Federal Ministry for Economic Cooperation and Development (BMZ) under its German Climate Technology Initiative (DKTI).

GDE foreword

Dear colleagues,

Dear friends of wind power in Vietnam,

The Government of Vietnam seeks to promote the power development in order to meet the requirements of socio-economic development, ensure the national energy security, and satisfy the daily power needs. The continuous effort of everyone in the electricity sector together with the support from the Government has made a significant improvement in the national power system of Vietnam. Electricity supply is guaranteed to be enough for socio-economic development demands. Its quality and reliability is also enhanced and improved.

To date the total installed capacity of the power supply in Vietnam has reached over 37,000 MW with the maximum power load has reached 25,800 MW. The national power system has had backup power sources, though not equally distributed for all regions. In the period from 1995 to 2014, the average growth rate of commercial electricity was always among the highest level regionally and internationally, which is 13.8%/year while the annual GDP increased by 6.7% on average.

In the future, Vietnam electricity sector still faces big challenges. One of them is the lack of primary energy sources for electricity generation leading to the needs for importing coal in the coming years. Another challenge is the requirement for ensuring national energy security to meet the socio-economic development strategy as well as national security and defense. Last but not least, Vietnam has to fulfill its commitment to reduce the greenhouse gas emission and protect the environment; most recently it set the target of greenhouse gas reduction of Vietnam in the COP21 Paris Climate Conference in December 2015.

The Prime Minister has issued a number of support mechanisms and policies that prioritize and encourage renewable energy development. The Renewable Energy Development Strategy until 2030, with the vision towards 2050 approved by the PM in Decision No.2068/ QĐ-TTg dated 25/11/2015 sets out the following objectives:

- Increase the electricity generation from renewable sources from 58 billion kWh in 2015 (which accounts for 35% of the total national electricity generation) to approximately 101 billion kWh in 2020 (38%), 186 billion kWh in 2030 (accounting for 32%) and 452 billion kWh in 2050 (43%).
- The detailed target for wind power is as follow: Wind power generation is expected to increase from 180 million kWh in 2015 to about 2.5 billion kWh in 2020 (accounting for 1% of total power generation), 16 billion kWh in 2030 (2.7%) and 53 billion kWh in 2050 (5.0%).

MOIT, under the supervision and recommendation of the PM, is going to review and adjust the incentives for renewable energy as well as complete the support mechanisms for developing other renewable energy sources in Vietnam.

GDE, together with the support from the *German international cooperation agency GIZ GmbH* in close cooperation with the *USAID Private Financing Advisory Network-Asia (PFAN-Asia)*, is happy to present to you the **“Wind Power Investment Guidelines in Vietnam”** as a useful reference for all interested stakeholders who take part in the investment and development of wind power in Vietnam.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Dang Huy Cuong', with a long horizontal stroke extending to the right.

Dang Huy Cuong,
Director of General Directorate of Energy,
Ministry of Trade and Industry



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Acknowledgement

The German Federal Ministry for Economic Cooperation and Development (BMZ) supported the development of these guidelines within the German Climate Technology Initiative (Deutsche Klimatechnologie Initiative - DKTI) in collaboration with the Ministry of Industry and Trade (MOIT).

We would like to thank MOIT, GDE and GIZ who provided insights, resources and expertise that greatly assisted the development of these guidelines.

The authors would also like to pronounce our gratitude to all the institutional stakeholders that contributed to the elaboration of these guidelines, sharing information, data, practical experiences and vision related to the wind power sector in Vietnam, in particular officials and employees from EPTC, ERAV, NLDC, SPC, DOIT Ninh Thuan, DOIT – DPI – DONRE Binh Thuan, BIDV, KfW, VDB and PECC3.

We would like to express a special thanks to the wind power developers and investors in Vietnam who openly shared precious insights and practical experience on their projects and activities. Our gratitude goes as well to the all the participants in the guidelines validation workshop. With their valuable comments and great interest in the wind power market, they have greatly supported the finalization of these guidelines.

Finally, we would like to express a special thanks to the New and Renewable Energy Department, General Directorate of Energy (Ministry of Industry and Trade), who directly contributed to the development and finalization of these guidelines with their valuable engagement, support and time.

We hope these guidelines will support all stakeholders involved, ultimately supporting Vietnam in reaching their promising goal in the wind power sector.



Disclaimer

While to the maximum extent possible the authors have attempted to provide legally correct information, the report or its authors and publishers cannot be held legally responsible for its full accuracy. This report is for information purposes regarding the wind power investment process only, and the users appreciate that regulations, legislations or procedures do change, and may be subject to interpretation, and differing application.

As an user of these Wind Power Investment Guidelines, do not rely on the information in the report as an alternative to legal, technical, financial, taxation and/or accountancy advice.

The authors or publishers will therefore not be held liable regarding any business losses, including without limitation loss of or damage to profits, income, revenue, production, anticipated savings, contracts, commercial opportunities or goodwill.

Anybody using these Wind Power Investment Guidelines is highly encouraged to provide feedback to GIZ on any legal or regulatory changes they may be aware of, as well as the application and interpretation of them. Feedback on the general usefulness of this document would be much appreciated as well, in order to further improve future versions.

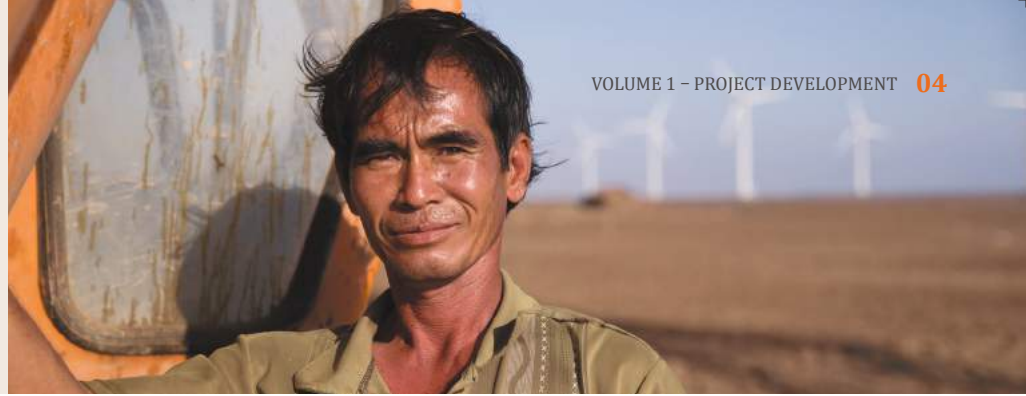
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Abbreviations

BIDV	Bank for Investment and Development of Vietnam
BT	Build- transfer lease
CIT	Corporate Income Tax
CO2	Carbon Dioxide
COD	Commercial Operation Date
DNO	Distribution Network Operator
DOIT	Department of Industry and Trade
DARD	Department of Agriculture and Rural Development
DOC	Department of Construction
DONRE	Department of Natural Resources and Environment
DPC	District People's Committee
DPI	Department of Planning and Investment
EPTC	Electricity Power Trading Corporation
ERAV	Electricity Regulatory Authority of Vietnam
EUR	Euro
EVN	Electricity of Vietnam
FiT	Feed-In-Tariff
FS	Feasibility Study
GDE	General Directorate of Energy
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
IPP	Independent power project
KfW	Kreditanstalt für Wiederaufbau
MOIT	Ministry of Industry and Trade, Vietnam
MOF	Ministry of Finance
MONRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment



NLDC	National Load Dispatch Center
NPT	National Power Transmission Corporation
NPDP	National Power Development Planning
ODA	Official Development Assistance
Pre FS	Pre-Feasibility Study
PIT	Personal Income Tax
PPA	Power Purchase Agreement
PC	People's Committee
PPDP	Provincial Power Development Planning
PPP	Public Private Partnerships
PWDP	Provincial Wind Power Development Planning
RLDC	Regional Load Dispatch Center
RPCo	Regional Power Corporation
SCADA/DMS	Supervisory Control And Data Acquisition / Distribution Management System
SCADA/EMS	Supervisory Control And Data Acquisition / Energy Management System
SPV	Special Purpose Vehicle
USD	US Dollar
VAT	Value Added Tax
VDB	Vietnam Development Bank
VND	Vietnamese Dong

Units:

GW	Giga Watt	m	Meter
GWh	Giga Watt hour	MVA	Mega Volt Ampere
km	Kilometre	MW	Mega Watt
kV	Kilo Volt	MWh	Mega Watt hour
kW	Kilo Watt	s	Second
kWh	Kilo Watt hour		

Introduction

Driven by rapid economic development, electricity demand in Vietnam has experienced double-digit growth rates during the past decade. In the future, this growth is expected to continue, albeit at single digits. The Revised National Power Development Master Plan VII foresees an electricity installed capacity of 60,000 MW in 2020; 96,500 MW in 2025 and 129,500 MW in 2030.

In order to meet this growing demand, the Government of Vietnam seeks to include non-hydro renewable energy sources into the national energy mix. For wind power in particular, the Government has designed a roadmap for wind power development for the period up to 2020, with an outlook to 2030. The installed capacity targets were set at 800 MW in 2020, 2,000 MW in 2025 and 6,000 MW in 2030. A Feed-in-Tariff (FiT) support mechanism was put in place to encourage investors.

Vietnam has promising potential for wind power. With more than 3,000 km of coastline, and located in the monsoon climate zone, the country presents several areas with high wind resource. According to the most recent estimate, a study performed by the MOIT in collaboration with the World Bank, over 2,600 square kilometres have an annual average wind speed above 6 m/s at 80 m above ground level.

Despite the encouraging measures and promising wind resources, only 135.2 MW of wind power are operational, which is humble compared to the potential available and compared to other countries

worldwide (225 MW installed in Thailand by 2014; 23,440 MW in India end of 2014; and 39,500 MW in Germany). Different causes for this slow development have been identified:

1. High quality wind data is scarce at present. To address this issue, the Vietnamese Government, in collaboration with GIZ (and KfW as well as the World Bank in the future), is carrying out wind measurement studies. The goal is to provide investors with a reliable wind atlas of Vietnam, and detailed wind resource assessments for sites with high potential for wind power.
2. The FiT is set at 7.8 US cents per kWh (since 2011). This may be too low for investors to overcome the perceived risk barrier for wind power development. To address this issue, GIZ is currently working with the Vietnamese Government to redesign the FiT support scheme.
3. The development of wind power projects in Vietnam and related approval process is complex, and lacks clarity. This increases the perceived risk of wind power development, and creates a further barrier for investment.
4. Financial institutions in Vietnam have limited experience in wind power financing. Therefore, limited products are available on the Vietnamese market to finance wind power projects.

Against this background, many efforts have now been established to address the situation and solve the issues.

Wind power development process in Vietnam

The Wind Power Investment Guidelines present an overview of the different steps necessary in developing a wind farm in Vietnam. As in most countries, in Vietnam the development stages of a wind power project consist of preliminary development, project development, project implementation, operation and maintenance (O&M), and at the end of the project lifetime, decommissioning. While these phases are common to all wind power projects, the necessary steps to complete each phase, such as required permits and licenses, are defined by regulations and practices of each country.

In Vietnam, the main laws governing wind power development are the Investment Law, Construction Law, Land Law, and Law on Environmental Protection. Specifically, for wind power, a circular from 2012, 32/2012/TT-BCT regulates wind power project development.

The main governmental interlocutors during the wind farm development process are either the Ministry of Industry and Trade/ General Director-

ate of Energy (GDE), or Department of Industry and Trade, depending on the size of the project. These branches of the government coordinate the appraisal of different stages of wind farm development.

In order to realize an investment in a province of Vietnam, approval must be sought after through the Departments of Planning and Investment (DPI). In some provinces, they assume functions of the DOIT during the preliminary development phase.

The Electricity Regulatory Authority of Vietnam (ERAV) oversees the development of the power sector, including planning and regulation of electricity tariffs (but not RE FITs which are under GDE's responsibility). Vietnam Electricity (EVN), the national and vertically integrated utility, operates the power system. Its different subsidiaries are engaged during the different development phases for integration of the wind farm into the national grid. EVN's Electricity Power Trading Corporation (EPTC) acts as the power off-taker.

The Ministry of Natural Resources and Environment (MONRE), and its provincial branches (DONRE), are in charge of approving environmental impact assessments and action plans. The wind farm developer/ investor must also address the Department of Fire Prevention and Fighting to ensure compliance with national safety standards.

The Provincial People's Committees (Provincial PCs) are the highest executive governmental branch of the different provinces of Vietnam. Together with the District People's Committees and Communal People's Committees, they are highly involved in the whole development process of the project.

A key regulatory instrument for wind power in Vietnam is the Provincial Wind Power Development Plans (PWPDPs). These plans define priority areas for wind power development, for which wind measurement has already been conducted.

This allows a streamlined permitting process, and prioritizes wind farm development in areas with high wind resource.

The permitting process is estimated to take between 2 and 3 years, according to the current regulatory framework, including wind measurement time. However, the experiences of operational and ongoing wind power projects suggest that development times are between 3 to 5 years. This is comparable to the administrative lead times in the EU (2010) of 3.5 years on average for onshore projects.



How to use the Wind Power Investment Guidelines

The purpose of these Wind Power Investment Guidelines is to provide more clarity on the different development phases of a wind project in Vietnam from the administrative perspective, and to bring clarity to the different financing possibilities and schemes for wind power as well as the current financial regulatory framework for wind power developers.

For the administrative procedure, the guidelines describe each phase of a wind farm development, including processes, permits and licences required and prerequisites to obtain them. Regarding project investment, the guidelines provide with general information about project financing, key documents and lessons learnt helping to reduce risks while closing financial closure and operating the wind farm. The Wind Power Investment Guidelines provide citations of the legal documents that are the basis of the different process steps. These are referred to and annexed, where possible.

In order to facilitate a clear understanding of the process of developing a wind power project in Vietnam, these guidelines present three levels of detail, which allow a zoom-in on the different steps and sub steps necessary to develop the project as well as to respectively involved stakeholders. The first two levels consist of flow charts following the chronologic development procedure of a

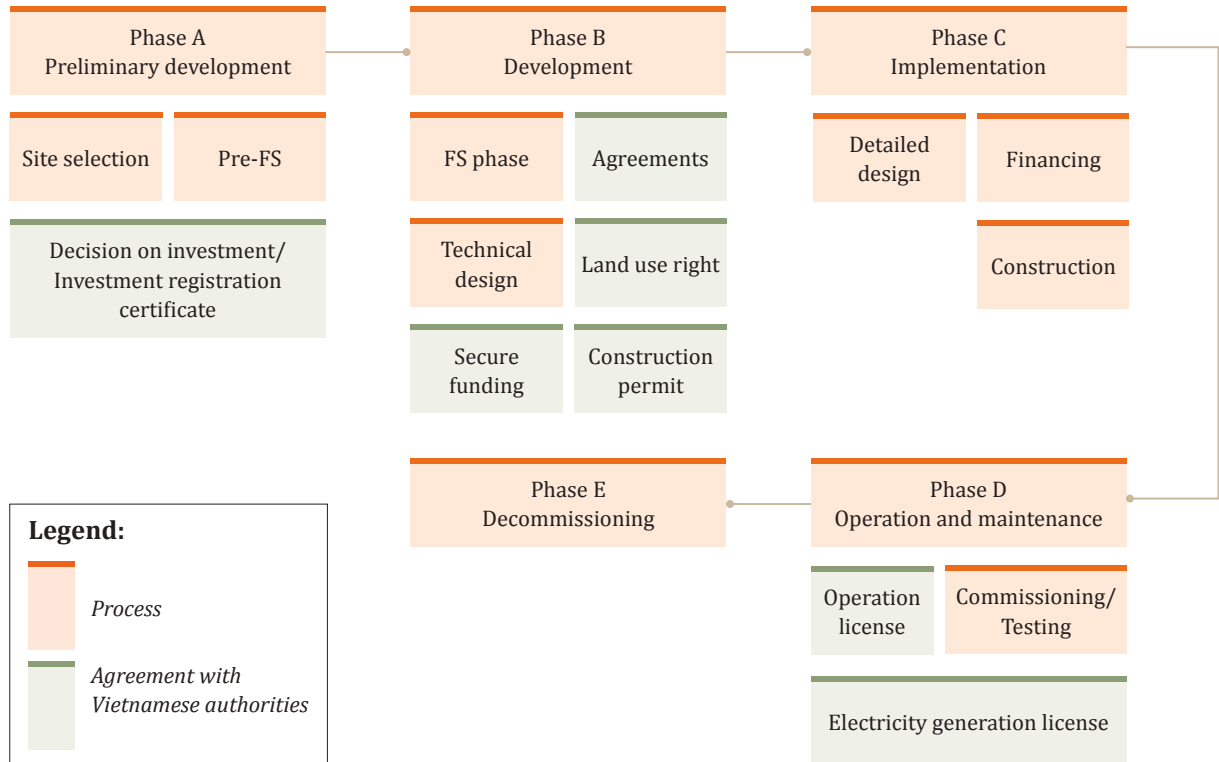
wind project. It is important to bear in mind that these are meant to facilitate an overall schematic understanding of the process. In practice, during the course of a specific project development, some activities will be conducted in parallel. Please note that these guidelines address primarily interconnected IPPs of domestic and international investors who do not use state budgets and act under the provision of the law. Other forms of investments such as public-private partnership (PPP), build-transfer lease (BT), ODA-funded projects etc., are beyond the scope of this Guidelines.

The orange boxes in the flow charts (see below) indicate process steps. Green boxes represent agreements and licences required for the development and/ or operation of a wind power project in Vietnam.

The guidelines do not advise developers or investors on different technological options and practice other than those covered under the Vietnamese law. Rather, they elaborate the different administrative steps, requirements and risks. Technology is the choice and opportunity/ risk of the project developer and investors, and should be based on wind regime, technical and financial considerations.

1. Overview of the wind power development process

This first chart provides an overview of the development process of a wind power project in Vietnam, from the first greenfield development to the end of the project life cycle, represented by decommissioning. Generally, the lifetime of a wind farm is considered to be 20 years (in line with the existing standardised power purchase agreement). The development phase of a project in Vietnam should take the developer between 2 and 3 years. Practical experience with the projects operational and those under development however suggests development times between 3 and 5 years.







2. Detailed overview of the wind power development process

This section provides an additional level of detail, structuring the steps required within the different phases of the project. The steps in the process are highlighted in orange, licences and permits are indicated in green.

2.1. Phase A: Preliminary development

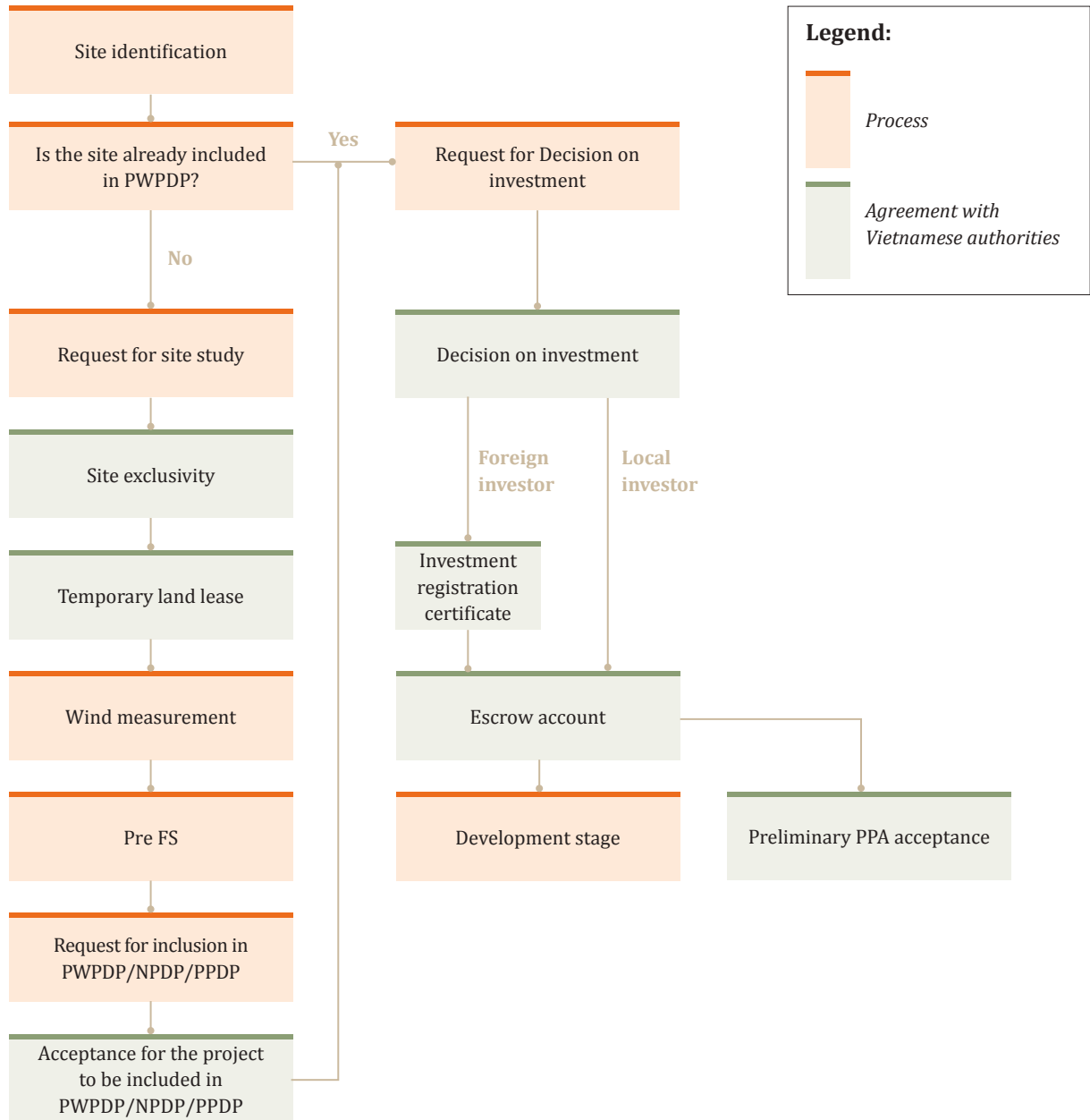
This phase covers the preliminary development of the project, which starts with the site selection and ends when the developer/ investor opens the escrow account and obtains the decision on investment.

A key question at this stage is to clarify whether the site is included in the Provincial Wind Power Development Plan (PWPDP) of the concerned province, or not. This is a determining factor for the next steps of project development.

For sites included in the PWPDP, wind measurements might be already available. Nevertheless, it is recommendable to perform specific wind measurements on-site according to bankable standards. It is possible to obtain Site exclusivity for a site already included in the PWPDP if bankable wind resource assessments are not available. Starting early with measurement activities will contribute in shortening the development period of the project. The duration of this first phase is estimated at 6 months up to 1.5 year for the project site with existing wind data and from 12 months to 24 months for site without any wind data available (wind data is to be collected for at least 12 months).

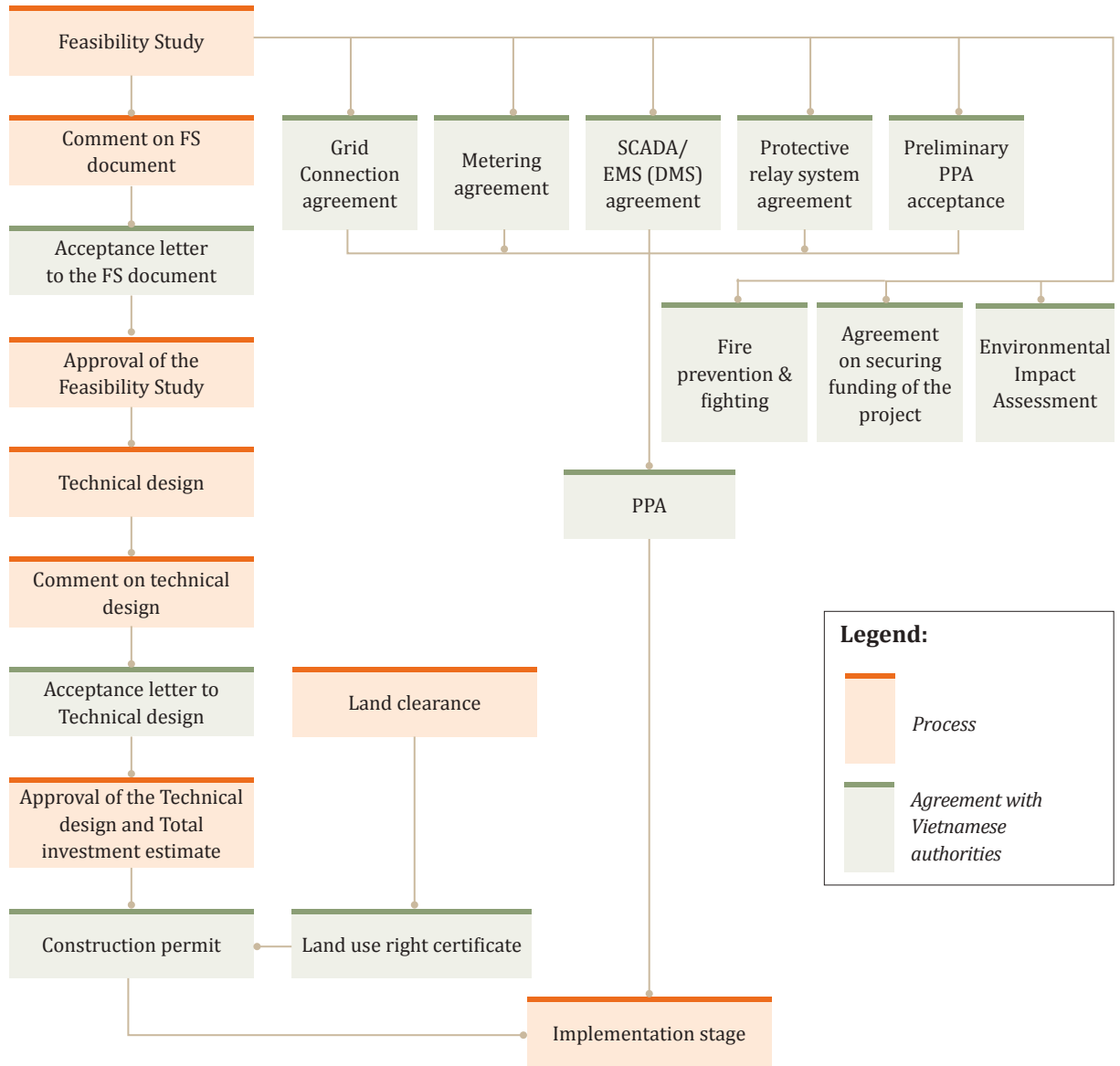
If the project is not included in the PWPDP, this first phase might take from 1 to 2 years as the project developer/ investor has to submit project documents for the inclusion into the PWPDP.

The following chart describes all steps and required licences within this phase.



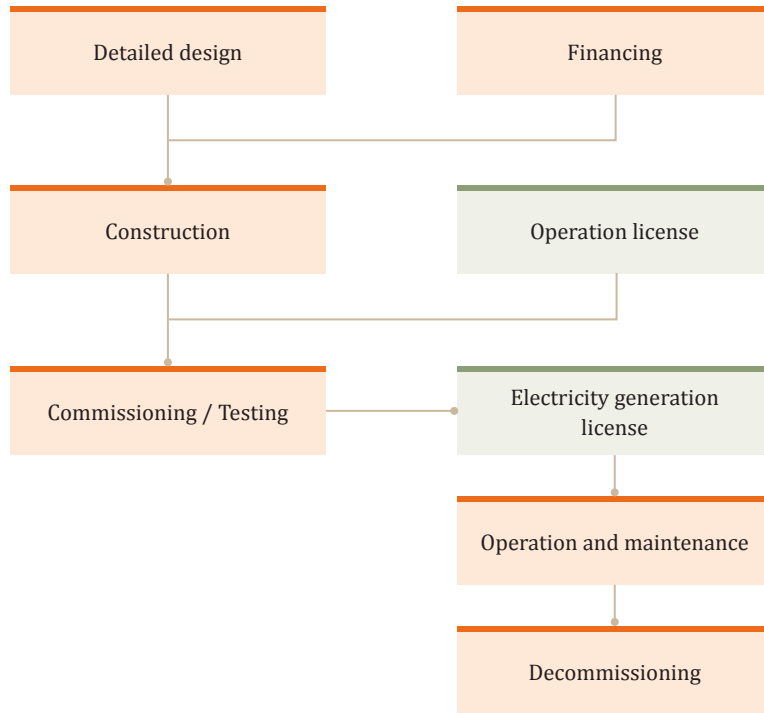
2.2. Phase B: Project development

This phase covers the development of the project, which starts with the decision on investment and ends with the implementation phase. During this phase, the developer/ investor has to obtain a certain number of agreements and authorisations. The basis for obtaining these agreements is a bankable feasibility study, which contains all necessary input and information required to approach the different administrations. This phase is expected to be completed in 1 to 2 years, depending on the quality and outcome of the feasibility study, which may trigger further queries and clarifications.



2.3. Phase C, D, E: Project implementation, O&M, Decommissioning

These phases cover Implementation, Operation & maintenance, and Decommissioning of the wind farm. The particularity of these phases in Vietnam is the fact that the Electricity generation licence is granted once the project is fully erected.



Legend:

- Process*
- Agreement with Vietnamese authorities*

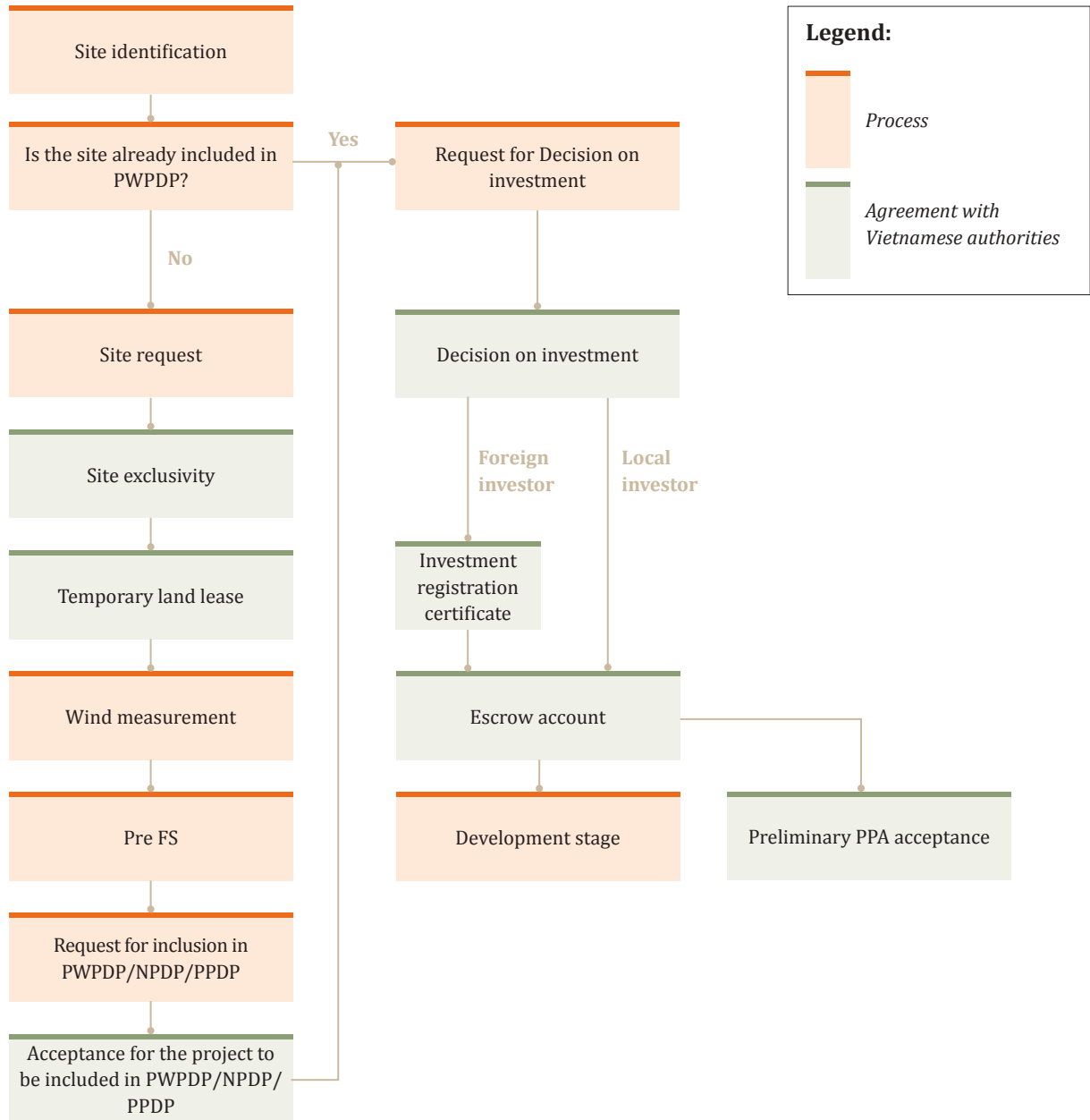




3. Detailed phase of development

The following chapter provides insights on the different chronological sub-activities that are necessary for the development of wind power projects in Vietnam. Each sub-activity is described according to the specific background and process. The main stakeholders, requirements, fees, estimated duration, regulation and (applicable) comments are described and defined..

3.1. Phase A: Preliminary development



3.1.1. Site identification/ Desk research

Description

At the beginning of the preliminary development process, the developer/ investor looks for a suitable site for development. For this purpose, he might use resources such as Google Earth, the available wind atlas of Vietnam and published data (GIZ, World Bank 2011) as well as mesoscale software etc., and conduct site visits.

Once the developer/ investor has shortlisted a number of potential suitable sites, he can approach the DOITs to check whether the site is available or not.

Until now, the Provincial Wind Power Development Plan (PWPDP) is available only in 09 provinces (see list below). There are different approaches possible depending on whether the province has a PWPDP or not, and if so, whether the site is included in the PWPDP or not. For sake of clarity following constellation is possible:

1) Province has a PWPDP (see 3.1.2)

- Site is included in the PWPDP
- Site is not included in the PWPDP

2) Province has no PWPDP (see 3.1.3)

In the following steps, the procedure for each of these cases is described.

Responsible

Project developer/ investor

Requirements

Desk research and screening of available documents (PWPDP, wind atlas, maps, etc.)

Regulations

n.a.

Validity

n.a.

Fee

None

Time line

n.a.

Stage


Beginning of phase A




Please note:

- To save time in obtaining the relevant information and organising site visits it is highly advisable for foreign developers/investors to team-up with local organisations;
- Only 09 provinces currently have a PWPDP (Ninh Thuan, Binh Thuan, Soc Trang, Ben Tre, Tra Vinh, Quang Tri, Ca Mau, Bac Lieu and Thai Binh).

3.1.2. Site identification/ Selection for sites in provinces that have a PWPDP

Description	<p>1) Sites included in PWPDP (step 3.1.11 can be implemented right after this)</p> <p>If the site is listed in the PWPDP, the developer/ investor can approach the respective DOIT to obtain the relevant information regarding location and its availability.</p> <p>Once a specific site is selected, the developer/ investor shall submit the project investment document stipulated in item 3.1.11 of this report to Provincial PC/ MPI through DPI to request the Decision on investment.</p> <p>Remarks: The developer/ investor is encouraged to perform wind measurements on site before submitting the request for project investment to ensure the availability of an adequate wind potential at an early stage and shorten development timeline.</p> <p>2) Sites not included in PWPDP</p> <p>If the site is not included in PWPDP, the developer/ investor shall carry out the necessary legal procedures to include the selected site into the PWPDP. For this purpose, the procedures include the items described under 3.1.4 to 3.1.8.</p>
Responsible	Developer/ investor
Requirements	Consultation with Provincial PC through DOIT/ DPI (depending on province) and screening of available documents.
Regulations	<ul style="list-style-type: none"> - Decision No. 37/2011/QĐ-TTg dated June 29, 2011 of Prime Minister on the mechanism supporting the development of wind power project in Vietnam on Wind Power; Article 6; - Circular No. 32 /2012/TT-BCT dated November 12, 2012 of MOIT on regulations on implementation of wind power projects development and Standardized Power Purchase Agreement for wind power projects.
Validity	n.a.
Fee	None
Time line	n.a.
Stage	Beginning of phase A
	<p>Please note: In some provinces, DPI is the responsible administration to be contacted.</p>

3.1.3. Site Identification/ Selection for sites in provinces that do not have a PWPDP

Description	The developer/ investor shall carry out the necessary legal procedures to include the selected site in the NPDP/PPDP (National/ Provincial Power Development Plan). For this purpose, the procedures include the items described under 3.1.4 to 3.1.8
Responsible	Developer/ investor
Requirements	Consultation with Provincial PC through DOIT/ DPI (depending on province) and screening of available documents.
Regulations	<ul style="list-style-type: none"> - Decision No. 37/2011/QĐ-TTg dated June 29, 2011 of Prime Minister on the mechanism supporting the development of wind power project in Vietnam on wind power; Article 6; - Circular No. 32/2012/TT-BCT dated November 12, 2012 of MOIT on regulations on implementation of wind power projects development and Standardized Power Purchase Agreement for wind power projects.
Validity	n.a.
Fee	None
Time line	n.a.
Stage	Beginning of phase A
	<p>Please note: In some provinces, DPI is the responsible administration to be contacted.</p>

3.1.4. Request for site study

Description	<p>Based on the preselected potential sites, the developer/ investor shall submit a letter of interest to the Provincial People Committee (Provincial PC) and DOIT to proceed to site survey.</p> <p>During this approval process, the DOIT and Provincial PC will consult with relevant provincial departments (DONRE, DARD, DPI, DOC) and assess the availability of the site to avoid overlapping of land use purpose and other planning at this site.</p>
Responsible	Developer/ investor
Requirements	Letter of interest from the developer/ investor shall include at least the following information: company profiles, project description, accurate site coordinates, map of the location, pictures of the site, etc.
Regulation	n.a.
Validity	n.a.
Fee	None
Time line	2-3 weeks after submitting the letter of interest including the information requested
Stage	Beginning of phase A

3.1.5. Acceptance letter for site study (Site exclusivity)

Description	Once the site availability is confirmed, it is possible for the developer/ investor to request a Site Exclusivity. If accepted, the Provincial PC will grant a Site Exclusivity in principle with an Acceptance Letter to allow the developer/investor to perform a pre-feasibility on site.
Responsible	DOIT/PC
Requirements	Site availability is confirmed by Provincial PC acceptance letter.
Regulations	Circular No. 32/2012/TT-BCT dated November 12, 2012 of MOIT on Regulations on implementation of wind power projects development and Standardized Power Purchase Agreement for wind power projects
Validity	18 months
Fee	None
Time line	2-3 weeks after confirmation of site availability
Stage	Before Pre-FS

3.1.6. Temporary land lease

Description	<p>After obtaining the Acceptance letter for Site study/ Site exclusivity from the Provincial PC, the developer/ investor shall sign a temporary land lease agreement for the installation of the measurement mast. This agreement is to be signed between developer/ investor and owner/ land user.</p> <p>In Vietnam, land is collectively owned by the people, but regulated by the State, which can grant a land lease to individual users for certain purposes.</p> <p>If the site is already in use, the developer/ investor shall negotiate with the land user and notarize the agreement with the Communal PC.</p> <p>If the site is not in use, the developer/ investor shall sign the land lease agreement with the District PC.</p>
Responsible	Developer/ investor
Requirements	Consultation with District PC/ Communal PC/ local people
Regulations	<ul style="list-style-type: none"> - Law No. 45/2013/QH13 dated November 29, 2013 of the National Assembly on Land; - Negotiations between developer/ investor and District PC/ local people.
Validity	Min. 12 months for the duration of the measurement period (can be extended based on negotiations with the land user/leaser)
Fee	<ul style="list-style-type: none"> - If the land is used by local people, a compensation amount shall be paid to the land user for the installation of the mast (1,000 to 1,200 USD per year); - If the land is used by government, financial compensation shall be paid to the District PC (300 to 500 USD per year).
Time line	1-2 weeks
Stage	Before installing the measurement mast

3.1.7. Wind measurement

Description	The developer/ investor is entitled to perform measurement activities on the site for a period up to 18 months after receiving the exclusivity letter. The purpose is to allow the developer/ investor to confirm assumptions on resource availability and data available prior to entering into the feasibility study phase.
Responsible	Developer/ investor
Requirements	<p>Vietnamese regulations (see below) establish minimum requirements for wind measurement campaigns conducted to include a site in the PWPDP:</p> <ul style="list-style-type: none"> - Minimum measurement period is 12 consecutive months; - For projects with an expected capacity of more than 50 MW, a minimum of 2 wind measurement masts (met masts) must be installed; - Wind measurement masts shall have a minimum height of 60 m; - Registration and recording of all measured data shall be at least in 10- min intervals; - The report on wind measurements shall include the implementation methodology, time for wind measurement, implementation modalities, equipment description, wind measurement data and analysis of wind measurement data; - Wind measurement data needs to include information on wind speed, wind frequency, wind rose, an energy distribution map, humidity, solar irradiation and atmospheric pressure. The minimum measurement period is 12 consecutive months.
Regulations	Circular No. 32/2012/TT-BCT dated November 12, 2012 of MOIT on regulations on implementation of wind power projects development and Standardized Power Purchase Agreement for wind power projects, Article 5
Validity	18 months
Fee	None, however it is advisable to employ security staff on site.
Time line	Minimum 12 months
Stage	Before preparing Pre-FS documents




- The equipment and requirements applied for wind measurement should be based on international best standards in order to be accepted for bankable purposes.
- The following indications are based on international standards and are considered for information and guidance only.

Met mast height	Minimum of 2/3 of foreseen turbine height, and at least 60 m
Met mast typology	Guyed lattice or guyed tubular
Booms	Length: Minimum 8 times mast diameter; Instrument spacing (vertical): 20 times boom diameter, not less than 0.75 m above boom leg; Only one instrument per boom is allowed.
Anemometers (Wind speed)	For masts \leq 80 m: 5 anemometers in 3 measurement levels; For masts between 80 m and 120 m: 6 anemometers in 4 measurement levels; For masts \geq 120 m: 7 anemometers in 5 measurement levels; Upper 2 measurement levels should be equipped with 2 (primary and secondary) anemometers. Those anemometers should be of different make and type, to avoid serial errors; Lowest measurement level: Halfway between ground level and lower rotor tip height of foreseen turbine, and not less than 20 m above ground level; Measuring levels should be equally spaced between the lowest and highest measuring levels.
Wind vanes (Wind direction)	For masts below 120 m: 2 wind vanes; First at 5 m below the first level (highest) secondary anemometer; Second at the middle point between second and third levels; For masts above or equal to 120 m: 3 wind vanes; Third vane at the middle point between fourth and fifth levels.

Thermometers (Air temperature)	Best practice: 2 thermometers; First at the foreseen turbine hub height or highest level; Second at 10 m above ground level.
Barometers (Air pressure)	Best practice: 2 barometers; First at the foreseen turbine hub height or highest level; Second at 10 m above ground level.
Hygrometers (Air humidity)	Best practice: 2 hygrometers; First at the foreseen turbine hub height or highest level; Second at 10 m above ground level.
Met mast data validity range (representativeness radius)	Simple terrain (plains, open farmlands): up to 10 km; Complex terrain (mountains, hills with slopes above 17°): up to 2 km.
International standards	IEA Recommendation 11 , “Wind Speed Measurements and Use of Cup Anemometry”; MEASNET Guidelines , in particular “Evaluation of Site-Specific Wind Conditions”; IEC 61400-12-1 , “Power Performance Measurements of Electricity Producing Wind Turbines”. Equivalent international standards may be used.



3.1.8. Pre-Feasibility study

Description	For sites that are not included in the PWPDP/PPDP/NPDP, the developer/ investor shall prepare a pre-feasibility study to assess his interest in developing the project and collect information about potential risks and impacts of the project on the selected site. This pre-feasibility study is the base for MOIT/ PM to include the proposed site in the PWPDP/ PPDP/ NPDP.
Responsible	Developer/ investor
Requirements	The Pre-feasibility report shall include at least the following items: <ol style="list-style-type: none"> 1) Rationale and description of the project; 2) The projected key figures in terms of size, energy production, location and layout; 3) Land requirement; 4) The preliminary design on construction, description of technology and equipments; 5) Projected time schedule for project implementation; 6) The preliminary total investment amount, capital-raising plan; recoverability of invested funds, capability to pay loans (if any); preliminary determination of socio-economic impacts.
Regulations	<ul style="list-style-type: none"> - Law No. 50/ 2014/QH13 dated June 18, 2014 of the National Assembly on Construction, Article 53; - Decree No. 59/2015/NĐ-CP dated June 18, 2015 of Government on Construction project management, Article 7, Clause 2 .
Validity	n.a.
Fee	None
Time line	Depending on the developer/ investor, this Pre-FS shall be finalized within 18 months, following site exclusivity.
Stage	In parallel, or after the wind measurement, and before getting the decision on investment
	It is recommendable to perform this study even for projects that are already included in the PWPDP to ensure sufficient accuracy when applying for the decision on investment.

3.1.9. Request for inclusion in the PWPDP/ NPDP/ PPDP

Description	The developer/ investor must submit the Pre-FS document to GDE/ MOIT through Provincial PC/ DOIT/ DPI to request project inclusion into the PWPDP/ PPDP; or to PM through MOIT to request project inclusion into the NPDP.
Responsible	Developer/ investor Provincial PC/ DOIT/ DPI GDE/ MOIT/ PM
Requirements	The documents submitted to GDE/ MOIT/ PM to request inclusion of the project to the PWPDP/ NPDP/ PPDP include: <ul style="list-style-type: none"> - The letter of Provincial PC to MOIT to request the project to be included into PWPDP/ PPDP; or the letter of MOIT to PM to request the project to be included into NPDP; - Pre-FS documents.
Regulations	<ul style="list-style-type: none"> - Circular No. 32/2012/TT-BCT dated November 12, 2012 of MOIT on Regulations on implementation of wind power projects development and Standardized Power Purchase agreement for wind power projects; - Circular No. 43/2013/TT-BCT dated December 31, 2013 of MOIT entitled regulations on content, sequence, procedures for formulation, assessment, approval and adjustment to electricity development planning.
Validity	n.a.
Fee	None
Time line	n.a.
Stage	Before obtaining the Decision on investment

3.1.10. Acceptance for the project to be included in PWPDP/ NPDP/ PPDP

Description	<p>For the project > 50 MW: Based on the request from GDE/ MOIT, PM shall issue the acceptance for the inclusion of the project to the NPDP.</p> <p>For the project ≤ 50 MW: Based on the request from Provincial PC, GDE/ MOIT shall issue the acceptance for the inclusion of the project to the PWPDP/ PPDP.</p> <p>This decision is the basis for the developers/ investors to request “Decision on investment” for the project.</p>
Responsible	<p>Developer/ investor</p> <p>Provincial PC</p> <p>GDE/ MOIT/ PM</p>
Requirements	The request of the inclusion of the project into PWPDP/ NPDP/ PPDP is accepted.
Regulations	<ul style="list-style-type: none"> - Circular No. 32/2012/TT-BCT dated November 12, 2012 of MOIT on Regulations on implementation of wind power projects development and Standardized Power Purchase agreement for wind power projects; - Circular No. 43/2013/TT-BCT dated December 31, 2013 of MOIT entitled regulations on content, sequence, procedures for formulation, assessment, approval and adjustment to electricity development planning.
Validity	n.a.
Fee	None
Time line	GDE is responsible for organizing the appraisal within 30 working days since the date of receiving valid dossier. Depending on project scales, GDE shall submit report to MOIT or PM for approval.
Stage	Before obtaining Decision on investment




3.1.11. Request for Decision on investment

Description	<p>This step happens after the project developer/ investor gets the Site Exclusivity (3.1.5).</p> <p>Once the project is included into WPDP/ NPDP/ PPDP (3.1.9), the developer/ investor shall submit the document to DPI to request “Decision on investment” of the project, which is roughly equivalent to a permit to develop the project.</p> <p>DPI shall submit the document to Provincial PC or MPI depending on project scale.</p>
Responsible	<p>DPI/ Provincial PC for projects < 5,000 billion VND.</p> <p>MPI/ Prime Minister for projects ≥ 5,000 billion VND.</p>
Requirements	<p>1) Projects to be approved by Provincial PC:</p> <p>The dossier consists of:</p> <ul style="list-style-type: none"> a) A written permission request to execute the project; b) A copy of the ID card or passport (if developer/ investor is an individual); a copy of the certificate of establishment or an equivalent paper that certifies legal status of the developer/ investor (if developer/ investor is an organization); c) An investment proposal that specifies: developer/ investor(s) in the project, investment objectives, investment scale, investment capital, method of capital raising, location and duration of investment, labour demand, requests for investment incentives, assessment of socio-economic effects of the project; d) Copies of any of the following documents: financial statements of the last two years of the developer/ investor; commitment of the parent company to provide financial support; commitment of a financial institution to provide financial support; guarantee for developer/ investor’s financial capacity; description of developer/ investor’s financial capacity; e) Demand for land use: if the project does not use land allocated, leased out by the State, or is not permitted by the State to change land purposes, then a copy of the lease agreement or other documents certifying that the developer/ investor has the right to use the premises to execute the project shall be submitted; f) The business cooperation contract (if the project is executed under a business cooperation contract). <p>2) Projects to be approved by the Prime Minister:</p> <p>The dossier consists of:</p> <ul style="list-style-type: none"> a) The documents mentioned in item (1) above; b) Land clearance and relocation plan (if any); c) Preliminary assessment of environmental impacts and environmental protection measures; d) Assessment of socio-economic effects of the project.

Regulations	Law No. 67/2014/QH13 dated November 26, 2014 of the National Assembly on Investment, Article 33, 34
Validity	n.a.
Fee	None
Time line	n.a.
Stage	Before obtaining Decision on investment

3.1.12. Decision on investment

Description	<p>Once the project proposal meets all requirements, the Decision on investment is granted to the project developer/ investor. The decision on investment (i) allows local developers/ investors to start project development at the selected site, and (ii) constitutes the basis for foreign developers/ investors to obtain the Investment registration certificate.</p> <p>The Decision on investment shall specify:</p> <ol style="list-style-type: none"> 1) Name of the developer/ investor of the project; 2) Name, objectives, scale, investment capital, and duration of the project; 3) Location of the project; 4) Schedule for project execution: schedule for capital contribution and capital raising; schedule for infrastructural development and inauguration (if any); schedule of each stage (if the project is divided into multiple stages); 5) Applied technologies; 6) Investment incentives, support, and conditions (if any); 7) Validity of Decision on investment.
Responsible	<p>Provincial PC for projects < 5,000 billion VND. Prime Minister for projects ≥ 5,000 billion VND.</p>
Requirements	<p>The submitted documents are accepted.</p>
Regulations	<ul style="list-style-type: none"> - Law No. 67/2014/QH13 dated November 26, 2014 of the National Assembly on Investment, Article 31, 32, 33, 34, 41, 43, 48; - Circular No. 32/2012/TT-BCT dated November 12, 2012 of MOIT on regulations on implementation of wind power projects development and Standardized Power Purchase Agreement for wind power projects, Article 8.
Validity	<p>Investment time: maximum 70 years for projects inside industrial zones, maximum 50 years for projects outside industrial zones, could be extended in special cases but no more than 70 years.</p> <p>The Decision on investment will be revoked if the following conditions are not fulfilled:</p> <ul style="list-style-type: none"> - Start of construction of the main items of the plant within 12 months from Decision on investment signed (can be extended up to 24 months); - The Commercial operation date (COD) is delayed maximum 24 months from the COD stated in the Decision on investment.
Fee	<p>None</p>

Time line	<p>35 days for projects decided by Provincial PC.</p> <p>For projects to be approved by the Prime Minister, the report shall be appraised by DPI and Provincial PC and submitted to the Prime Minister through MPI. The decision is usually granted within 40 days.</p>
Stage	End of phase A
	<p>1) Validity of the Decision on Investment:</p> <p>Maximum after 2 years of getting the investment decision, the project developer/ investor has to start the construction work. The timeline is thus very short to implement different important steps including FS study, financial closure, procurement of EPC contract, land clearance...). The project developer/ investor is therefore recommended to strictly follow the milestones of the project after obtaining the Decision on Investment.</p> <p>2) Nominal capacity and the land area stated in the Decision on Investment:</p> <p>In order to get the Decision on Investment, the project developer/ investor has to submit information on the nominal capacity and the land area to be used for the wind farm. At this early stage of the project, there is still not enough information to accurately assess the exact capacity and land area, as the wind turbines will be purchased at the end of the process. And therefore, the project developer/ investor is recommended to suggest a margin of about 10% nominal capacity/ land area to be used in the Decision on Investment.</p>


3.1.13. Investment registration certificate

Description	<p>Depending on the investment volume of the project, the Investment registration certificate is to be granted by the DPI or by MPI (see above 3.1.11). The certificate entitles foreign companies to develop wind projects in Vietnam.</p> <p>The Investment registration certificate is granted based on the following information:</p> <ol style="list-style-type: none"> 1) Project registration number; 2) Name and address of the developer/ investor; 3) Name of the project; 4) Location and area of the project; 5) Project rationale and scale; 6) Total investment of the project (including the developer/ investor's equity and debt), financing schedule; 7) Duration of the project; 8) Project execution schedule: schedule for the infrastructure development and inauguration (if any); schedule of achievements of primary targets and items; targets, duration, and operations of each stage (if the project is divided into multiple stages); 9) Investment incentives, support, and conditions (if any); 10) Further conditions applied to the developer/ investor (if any).
Responsible	MPI/ DPI
Requirements	Positive decision on investment for the project
Regulations	<ul style="list-style-type: none"> - Law No. 67/2014/QH13 dated November 26, 2014 of the National Assembly on Investment, Article 36, 37, 39, 41, 43, 48; - Circular No. 32/2012/TT-BCT dated November 12, 2012 of MOIT on Regulations on implementation of wind power projects development and Standardized Power Purchase Agreement for wind power projects, Article 8.
Validity	<p>50 years</p> <p>The Investment registration certificate will be revoked if the following conditions are not fulfilled:</p> <ul style="list-style-type: none"> - Starting construction for the main items of the plant within 12 months from Investment registration certificate signed (can be extended up to 24 months); - The Commercial operation date (COD) is delayed over a maximum of 24 months from the COD stated in the Investment registration certificate.

Fee	None
Time line	Within 5 working days after receiving Decision on investment
Stage	After receiving the Decision on investment and before developing the project


3.1.14. Escrow account

Description	<p>Once a positive Decision on investment is received, the developer/ investor is required by the Investment Law to create an escrow account to ensure the implementation of the project in which the Government hand over the land to the developer/investor . The Decision on investment is only valid once this deposit has been made.</p> <p>The implementation of escrow account is officially agreed between investment licensing agency and the developer/investor after the Decision on Investment is granted but must be before the land is handovered to the developer/investor.</p> <p>The deposit will be made to the investment licensing agency’s account at a commercial bank in Vietnam which is selected by the developer/investor. The developer/investor is responsible for all the fees related to the account such as registration, maintainance and transactions.</p>
Responsible	Developer/ investor - DPI
Requirements	Positive decision on investment for the project
Regulations	<ul style="list-style-type: none"> - Law No. 67/2014/QH13 dated November 26, 2014 of the National Assembly on Investment, Article 42; - Decree No. 118/2015/ND-CP dated November 12, 2015 of Government on guiding of applying the Investment Law, Article 27.
Validity	<p>The deposit shall be returned to the developer/ investor according to the project implementation schedule as described below.</p> <ul style="list-style-type: none"> - 50% of the deposit is returned upon completion of land clearance procedures as scheduled in the Investment Certificate; - The remaining 50% is returned if the project completion is performed as scheduled.
Amount	<p>For a wind power project , which is belong to special preferential industries, a reduction of 50% for the value of escrow account can be applied as compared to normal projects. The deposit is divided into three levels depending on volume of total project investment:</p> <ul style="list-style-type: none"> - For projects up to 300 mil. VND: 1.5% - From 300 – 1,000 mil. VND: 1.0% - Above 1,000 mil. VND: 0.5%

Time line	Within 2 weeks after receiving the Investment Certificate
Stage	After receiving the Investment Certificate and before developing the project
	Please note: Escrow account process can be different between provinces.

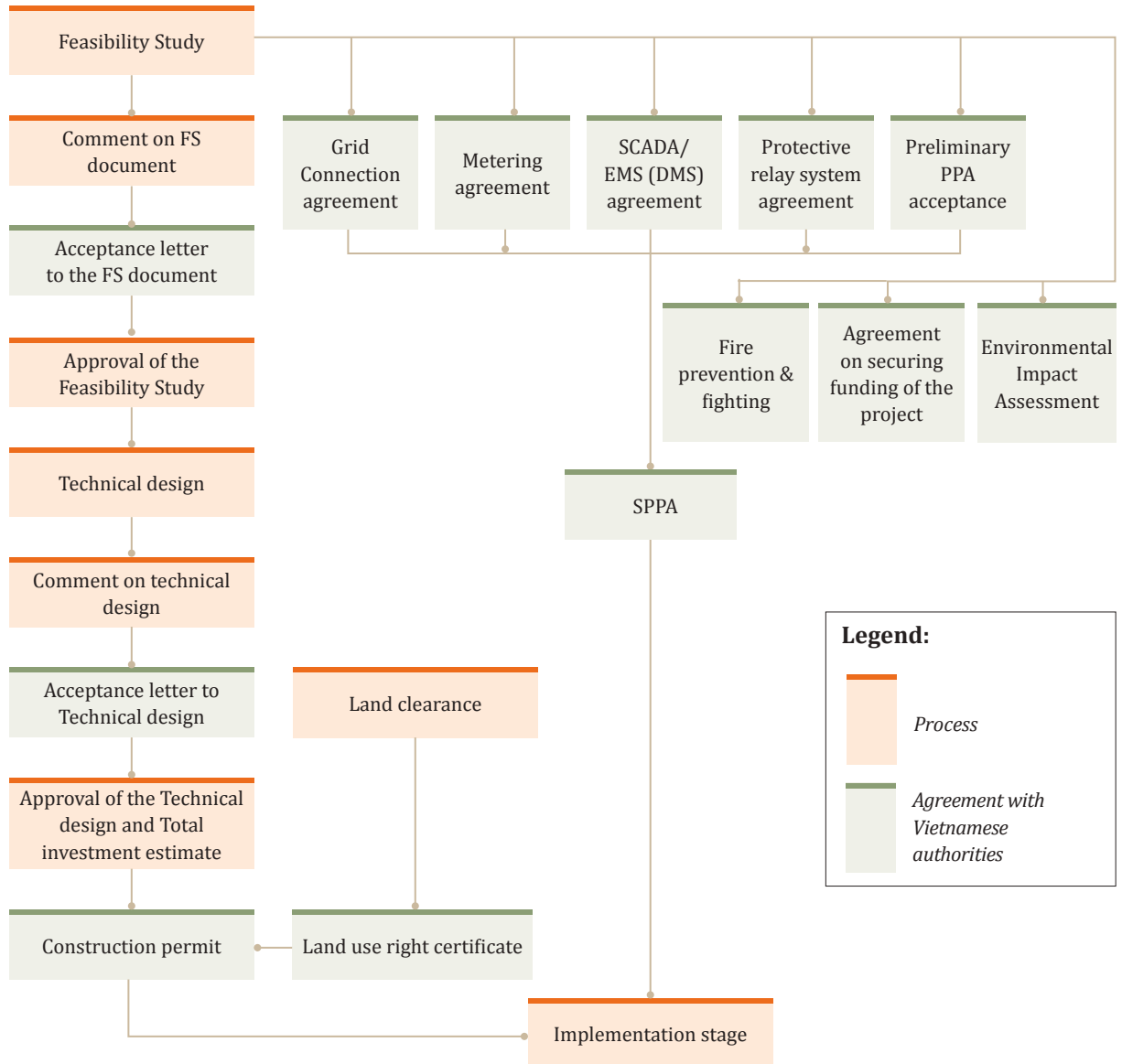


3.1.15. Preliminary PPA acceptance

Description	This Preliminary Power Purchasing Agreement entitles the developer/ investor to apply for the PPA, and gives an exclusivity to the developer/ investor to negotiate and obtain the PPA for a certain project/ area.
Authority	Vietnam Electricity (EVN)/ EPTC
Requirements	Investment Certificate/ Decision on Investment
Regulations	Decision No. 37/2011/QĐ-TTg dated June 29, 2011 of Prime Minister on the mechanism supporting the development of wind power project in Vietnam.
Validity	n.a.
Fee	None
Time line	Within 1 month after submission of the documentation
Stage	Before preparing the project investment documents
	<p>Please note:</p> <p>It is highly advisable to obtain this document at this stage to save time during negotiations with EPTC for granting the PPA.</p>



3.2. Phase B: Project development



3.2.1. Feasibility study

Description	<p>The developer/ investor shall elaborate a feasibility study for the project under development. This feasibility study will have several purposes.</p> <ol style="list-style-type: none"> 1) It shall provide the developer/ investor with all necessary information to assess the practicality of a proposed project and the setup required; 2) It will also inform the decision makers on the background, practicability and impact of the project; 3) Single studies included in the feasibility study will be used to apply for the licenses/ agreements and permits necessary to develop the project.
Responsible	<p>Developer/ investor</p>
Requirements	<p>The feasibility study report shall be developed by recognized and certified consultants (Decree 59/2015/ND-CP, Article 2), and include the following:</p> <ol style="list-style-type: none"> 1) Basic design, which shall comprise (not limiting to): <ol style="list-style-type: none"> a) Project site including coordinates, electrical layout, size and capacity of the plant, project classification (based on Vietnamese regulation); b) Foreseen technology, equipment plans (if any); c) Project layout, including cross-sections and vertical sections of construction works, and main structures; d) Description of construction solutions, main materials to be used, estimated construction cost for the different items; e) Plan for project connection to grid, access, water etc., fire and explosion prevention and fighting solutions; f) Applied standards and technical regulations, findings of site investigation for the basic design. 2) Further content: <ol style="list-style-type: none"> a) The rationale and use of the project, land use planning, structure and type of investment; b) The capability to ensure implementation of the project, such as use of resources, selection and procurement of equipment and technology, use of labour, technical infrastructure, time schedule, land clearance and resettlement (if any), etc.; c) Assessment of the project's impact related to land recovery, ground clearance and resettlement; protection of landscape and ecological environment and safety during construction, fire and explosion prevention and fighting, and other necessary contents;

	<ul style="list-style-type: none"> d) Total investment amount, capital raising, financial and risk analysis, evaluation of socio-economic efficiency of the project; etc.; e) Others, if applicable. <p>3) Further requirements:</p> <ul style="list-style-type: none"> a) Minimum equity rate of 20% of investment cost are required; b) Park efficiency must be $\geq 90\%$; c) A maximum power density of 1 hectare per MW is allowed; d) A maximum investment amount of 2.500 USD/ kW is allowed.
Regulations	<ul style="list-style-type: none"> - Law No. 50/2014/QH13 dated June 18, 2014 of the National Assembly on Construction, Article 54 regulating the content of the FS; - Circular No. 32/2012/TT-BCT dated November 12, 2012 of MOIT on Regulations on implementation of wind power projects development and Standardized Power Purchase Agreement for wind power projects, Articles 6, 10, 12, and 17; - Decree No. 59/2015/NĐ-CP dated June 18, 2015 of Government on Construction project management, section 2 regulating requirements on certified consultants.
Validity	n.a.
Fee	None
Time line	The developer/ investor is expected to complete the feasibility study in 4 - 8 months
Stage	The feasibility study report is the main milestone for project development. Respective copies must be sent by DOIT/ MOIT to the different departments.

3.2.2. Comment/ Appraisal FS documents

Description	<p>The MOIT/ DOIT in consultation with the relevant departments will comment and review the FS documents. The comments and appraisal will be sent to the developer, who if required shall improve and resubmit the documentation until no further comments are made.</p> <p>The basic design of FS for wind farms > 30 MW is to be submitted to MOIT for appraisal.</p> <p>The basic design of FS for wind farms ≤ 30 MW is to be submitted to DOIT for appraisal.</p>
Responsible	MOIT/ DOIT/ DONRE/ DOC/ DARD
Requirements	The Basic design shall be submitted to the MOIT/ DOIT for appraisal
Regulations	<ul style="list-style-type: none"> - Law No. 50/2014/QH13 dated June 18, 2014 of the National Assembly on Construction, Article 58; - Decree No. 59/2015/NĐ-CP dated June 18, 2015 of Government on Construction project management, Article 10, Article 11, Appendix II; - Circular 06/2016/TT-BXD dated March 10th, 2016 of Ministry of Construction on determination and management of construction investment costs.
Validity	n.a.
Fee	Depending on project scale (about 10,000 – 20,000 USD)
Time line	n.a.
Stage	Prior to approval of FS documents

3.2.3. Acceptance letter for FS documents

Description	An acceptance letter from MOIT/ DOIT is sent to the developer/ investor once MOIT/ DOIT has no further comments on the Basic design of the project. This acceptance letter entitles the developer/ investor to approve the FS study and go ahead with the technical design of the project.
Responsible	MOIT/ DOIT
Requirements	Submit the content described under the document “Appraisal of basic design for investment projects”, including main project information and attachments such as: legal documents, reference and surveys, and capacity/ profile of contractors.
Regulations	<ul style="list-style-type: none"> - Law No. 50/2014/QH13 dated June 18, 2014 of the National Assembly on Construction, Article 58; - Decree No. 59/2015/NĐ-CP dated June 18, 2015 of Government on Construction project management, Article 10, Article 11, Appendix II.
Validity	n.a.
Fee	None
Time line	Within 4 weeks after the set of documents are sent to MOIT/ DOIT
Stage	Prior to approval of FS documents

3.2.4. Grid connection agreement

Description	<p>This agreement rules the specifications and provisions for the connection of the wind farm to the grid.</p> <p>The project developer/ investor during the Pre FS study must conduct a study of the current local grid conditions (e.g. power load demand, grid capacity, etc.). Typically, the preliminary installed capacity of wind power plants, possible grid connection point and voltage levels are specified in the approved Power Development Planning (PDP). The developer is responsible for any investment from the connection point back to the power plant. The grid operator is responsible for any investment from the connection point toward the regional/ national grid.</p>
Responsible	<ul style="list-style-type: none"> - If the connection voltage is < 220 kV, the connection agreement is under the responsibility of the Regional Power Corporation (RPCo). - If the connection voltage is \geq 220 kV, the connection agreement is under the responsibility of the National Power Transmission Corporation (NPT).
Requirements	<p>To obtain the connection agreement, the developer/ investor shall submit the grid-connection report. The applicable regulation is determined by the grid-connection level (see below).</p> <p>The full list of requirements can be found in the documents. For illustrative purposes, some of the requirements are listed below:</p> <ol style="list-style-type: none"> 1) Profile of the plant: name, location, power capacity, estimated electricity production, connected voltage, Commercial Operation Date; 2) Requirements for wind turbines: specifications, protection-control systems, switch gear equipment.
Regulations	<p>For \geq 220 kV connection:</p> <ul style="list-style-type: none"> - Circular No. 12/2010/TT-BCT dated April 15, 2010 of MOIT on Regulations on transmission power system; - Official letter No. 1449/QD-EVNNPT dated June 17, 2015 subject on regulation on content, scope, procedure to grid connection agreement. <p>For < 220 kV connection:</p> <ul style="list-style-type: none"> - Circular No. 39/2015/TT-BCT dated November 18, 2015 of MOIT on Regulations on distribution power system.
Validity	n.a.
Fee	None

Time line	1 to 2 months after submitting the document
Stage	In parallel with the FS documents of the project, after finalizing the grid study.

3.2.5. Metering agreement

Description	This agreement rules the specification and provisions for the metering system of the wind farm and its power injection into the grid.
Responsible	Electricity Power Trading Company (EPTC)
Requirements	The developer/ investor shall submit a detailed metering report including: <ol style="list-style-type: none"> 1) Metering equipment location; 2) Electricity purchaser; 3) Specifications of metering equipment.
Regulations	<ul style="list-style-type: none"> - Circular No. 42/2015/TT-BCT dated December 1, 2015 of MOIT on requirements of electricity measurements in power system; - Decision No. 887/QD-EVN dated October 14, 2014 of EVN on regulations on technical specification of electric meter; - Decision No. 246/QD-EVN dated April 26, 2014 of EVN on regulations on negotiation, signing and implementation of electricity purchase and sale contracts for power projects, Article 16; - Decision No. 1232/QD-EVN dated February 21, 2011 of EVN on regulations on measurement system management in electricity boundary point.
Validity	n.a.
Fee	None
Time line	30 days after submitting the document
Stage	In parallel with the FS documents of the project

3.2.6. SCADA/ EMS (DMS) agreement

Description	This agreement rules the specification and provisions for the SCADA/ EMS (DMS) – telecommunication system between the wind farm and the load dispatch centres. This report is to be submitted to the National Load Dispatch Centre (A0)/ Regional Load Dispatch Centre (Ax) for approval.
Responsible	National Load Dispatch Centre (A0) for projects > 30 MW Regional Load Dispatch Centre (Ax) ≤ 30 MW
Requirements	The developer/ investor shall submit a detailed SCADA/ EMS(DMS) – communication system report and information such as: <ol style="list-style-type: none"> 1) A minimum data list requirement (switching equipment of the wind farm needs to be controlled/ managed by A0/Ax) approved by A0/Ax; 2) Gateway equipment has 02 data connecting ports which are directly, independently and simultaneously connected to SCADA/EMS(DMS) system of dispatch centres A0/Ax; 3) Protocol serving data exchanges between wind farm and Dispatch Centres are IEC 60870-5-101&104; 4) A telecommunication system serves the dispatch of power system.
Regulations	<ul style="list-style-type: none"> - Decision No. 246/QD-EVN dated April 26, 2014 of EVN on regulations on negotiation, signing and implementation of electricity purchase and sale contracts for power projects. Article 7, Article 9, Article 15; - Decision No. 1208/QD-EVN dated July 28, 2008 of EVN entitled regulation on establishment, build-up, operation management of SCADA system regarding power substations/plants.
Validity	n.a.
Fee	None
Time line	30 days after submitting the document
Stage	In parallel with the FS document of the project



3.2.7. Protective relay system agreement

Description	This is an agreement between developer/ investor and A0/Ax regarding functions of protection relay, characteristic of automation devices of wind farm based on Vietnamese technical standards.
Responsible	National Load Dispatch Centre (A0) for projects ≥ 220 kV Regional Load Dispatch Centre (Ax) projects < 220 kV
Requirements	The developer/ investor shall submit the following documents: <ul style="list-style-type: none"> - Primary equipment diagram (including power transformers, circuit breakers, current transformers, voltage transformers, disconnect switch, grounding switch, surge arrester, etc.); - Secondary equipment diagram (including measurement, protection, automation devices); - Documents on calculation, manuals of relays and automation devices.
Regulations	<ul style="list-style-type: none"> - Circular No. 12/2010/TT-BCT dated April 15, 2010 of MOIT on regulations on transmission power system; - Circular No. 39/2015/TT-BCT dated November 18, 2015 of MOIT on regulations on distribution power system; - Circular No. 56/2014/TT-BCT dated December 19, 2014 of MOIT entitled regulations on methodology of electricity rate determination, procedure to verify power purchase agreement; - Decision No. 1198/QD-EVN dated December 13, 2011 of EVN on regulations for cooperation and controlling to set the protective relay system; - Decision No. 246/QD-EVN dated April 26, 2014 of EVN on regulations on negotiation, signing and implementation of electricity purchase and sale contracts for power projects; - Decision No. 1656/QD-EVN dated December 9, 2008 of EVN on procedures for trial operation of new plants.
Validity	n.a.
Fee	None
Time line	30 days after submitting the document
Stage	Before PPA

3.2.8. Power purchase agreement (PPA)

Description	<p>The Power Purchase Agreement (PPA) is a legally binding document between developer/ investor (power seller) and power purchaser. In Vietnam, the power purchaser is EVN, the state-owned utility.</p> <p>Under Vietnamese regulation, the PPA is a non-negotiable standardised agreement regulated by the Circular 32/2012-TT-BCT issued by the MOIT. The PPA has a duration of 20 years. The tariff for wind power is currently 1,614 Dong/kWh (excluding value added tax) equalling to 7.8 US cents/kWh. This tariff includes a subsidy of 207 Dong/kWh, granted by the State for wind power plants (equivalent to 1.0 US cents/kWh). The electric power purchase prices vary according to the fluctuations of exchange rate between VND and USD at the time of payment.</p>
Responsible	<p>General Directorate of Energy (GDE)</p> <p>Electricity of Vietnam (EVN) authorizes EPTC to sign the PPA with the project developer</p>
Requirements	<p>The full list of requirements can be found in the documents listed under “Regulation” below. For illustrative purposes, the main requirements are listed as follows:</p> <ol style="list-style-type: none"> 1) Letter from project developer/ investor to EPTC/ EVN; 2) Certified copy of approvals by relevant authorities for project development (e.g. power source and grid plan, in case the plant is approved by the Provincial People’s Committee, it is necessary to enclose the approval of MOIT for the plant; Investment certificate, related license, etc.); 3) Basic information of the project developer/ investor document proving legal entity, business registration, capability and experience in project development, financial capacity, etc.; 4) Grid connection agreement; 5) Metering agreement; 6) SCADA/ EMS (DMS) agreement; 7) Protective relay system agreement; 8) Preliminary PPA acceptance.
Regulations	<ul style="list-style-type: none"> - Decision No. 37/2011/QD-TTg dated June 29, 2011 of Prime Minister on the mechanism supporting the development of wind power project in Vietnam; - Circular No. 32/2012/TT-BCT dated November 12, 2012 of MOIT on Regulations on implementation of wind power projects development and Standardized Power Purchase agreement for wind power projects.

Validity	20 years from start of commercial operation date
Fee	None
Time line	PPA signing – approximately 15 days after PPA approval
Stage	Prior to Implementation stage


3.2.9. Fire prevention and fighting

Description	The developer/ investor shall submit the document on fire prevention and fighting to the Department of Fire Prevention & Fighting (under Ministry of Public Security) for approval. Construction can only commence once the project designs on safety for fire prevention and fighting have been approved.
Responsible	Developer/ investor Department of Fire Prevention & Fighting/ Ministry of Public Security
Requirements	<p>The plant shall be designed in accordance with the following requirements on fire prevention and fire fighting:</p> <ol style="list-style-type: none"> 1) The fire safety distance of the construction site from adjacent constructions conforms to regulations; 2) The fire-resistance level of the construction is suitable for its scale and operation. There is a solution for preventing spreading of fire between parts of the construction and between the constructions; 3) The manufacturing technologies, electricity system, lightning protection system, antistatic system, explosion system, arrangement of technical systems and supplies must comply with fire safety requirements; 4) The escape way (doors, pathways, corridors, staircase), lighting equipment, ventilation, indication of the escape way, signals, and rescue equipment must ensure quick and safe escape; 5) The size and capacity of the traffic system and parking lot must be suitable for operation of fire fighting vehicles; the water supply system is sufficient for fire fighting; 6) The fire alarm system, fire fighting system, and other fire fighting equipment must be sufficient; their positions and specifications are suitable for the operation of the construction according to fire safety and fire fighting standards; 7) The project must provide a budget for fire safety and fire fighting.
Regulations	<ul style="list-style-type: none"> - Law No. 27/2001/QH10 dated June 29, 2001 of the National Assembly on fire prevention & fighting; - Law No. 40/2013/QH13 dated November 22, 2013 of the National Assembly on amending and adding a number of articles of the Law on fire prevention & fighting; - Decree No. 79/2014/ND-CP dated July 31, 2014 of Government on guidelines for the law on fire prevention & fighting and the law on amending and adding a number of articles of the law on fire prevention & fighting.

Regulations	Circular No. 66/2014/TT-BCA dated December 16, 2014 of Ministry of Public Security on detailing the implementation of a number of articles of the decree No. 79/2014/ND-CP.
Validity	n.a.
Fee	Depending on plant scale, the fee is approximately 0.005 % of investment cost (between 3,000 and 5,000 USD)
Time line	Within 10 days
Stage	In parallel with the basic design of the project

3.2.10. Environmental impact assessment

Description	<p>Investors/ developers shall submit the Environmental impact assessment (EIA) to Department of Natural Resources and Environment (DONRE) for appraisal. DONRE submits the document to the Provincial PC for approval.</p> <p>Depending on the capital sources of the project (international financial institutions, international banks, local banks, etc.), the developer shall prepare the EIA documents following the sample requested by borrowers. Normally, the EIA requirement of foreign loan is much stricter than domestic ones.</p>
Responsible	<p>Developer/ investor</p> <p>Department of Natural Resources and Environment (DONRE)</p> <p>Provincial PC</p>
Requirements	<p>Main topics to be included in the report on EIA:</p> <ol style="list-style-type: none"> 1) Project owners, method of the environmental impact assessment; 2) Evaluation of technology, work items and any activity related to the project, which can cause harmful effects to the environment; 3) Assessment of current status of natural and socio-economic environment, carried out at the project sites and adjacent areas, and demonstration of the suitability of the selected project site; 4) Assessment and forecast of waste sources, and impact of the project on environment and community health; 5) Assessment, forecast and determination of measures for managing the risks of the project posed to environment and community health; 6) Waste disposal measures; 7) Measures for minimizing the impact of the project on environment and community health; 8) Public Consultation result; 9) Environmental management and supervision programs; 10) Budget estimate for the construction of environmental protection facilities and measures to be taken in order to minimize the environmental impact; 11) Alternatives to the application of measures for environment protection.

Regulations	<ul style="list-style-type: none"> - Law No. 55/2014/QH13 dated June 23, 2014 of the National Assembly on environmental protection, Article 20, Article 22; - Decree No. 18/2015/ND-CP dated February 14, 2015 on environmental protection planning, strategic environmental assessment, environmental impact assessment and environmental protection plan, Article 14; - Circular No. 27/2015/TT-BTNMT dated May 29, 2015 of MONRE on strategic environmental assessment, IEA and environmental protection plans, Article 6; - Circular No. 218/2010/TT-BTC dated December 29, 2010 of Ministry of Finance (MOF) on providing for the payment, management and use of charges for appraising EIA reports, Annex.
Validity	<p>24 months</p> <p>If the project construction is not started within 24 months from the approval of the EIA report, the EIA must be re-done and re-submitted.</p>
Fee	<p>Depending on plant scale (3,000 to 4,000 USD)</p>
Time line	<p>30 days from the date of submitting the EIA documents to DONRE</p>
Stage	<p>In parallel with the basic design of the project</p>
	<p>Please note:</p> <p>The Public Consultation process can take weeks or months depending on the project site and community, as it might be difficult to reach an agreement with the different stakeholders.</p> <p>In Vietnam, law does not require a social impact assessment for wind farms. However, for projects that are to be financed by international institutions, a full environmental and social impact assessment based on IFC/ World Bank standards is highly recommendable.</p>

3.2.11. Technical design

Description	<p>The technical design is more refined than the basic design (see above). It will be used as a basis for the detailed design in the Implementation phase.</p> <p>The document shall be submitted after the Feasibility Study has been approved.</p> <p>It shall comprise a detailed account of technical parameters and materials used, conforming to the applied standards and technical regulations.</p>
Responsible	Developer/ investor
	<p>Main contents of the Technical design:</p> <ol style="list-style-type: none"> 1) Architectural plan; 2) Technology and specification of equipment and materials; 3) Lifetime of the plant and its operation process and maintenance; 4) Structural plan and major types of materials; 5) Fire and explosion prevention and fighting plans; 6) Environmental protection solutions; 7) Cost estimate; 8) Foreseen installed capacity; 9) Site boundary; 10) Detailed mapping for roads, dwellings, overhead lines, ownership boundaries; 11) Environmental constraints and foreseen compensation measures; 12) Noise and shadow flicker studies; 13) Location of visually sensitive viewpoints; 14) Turbine minimum spacing as defined by the turbine supplier; 15) Constraints associated with communication signals; 16) Logical diagrams of protection – control system and telecommunication system of the plan and substation.
Regulations	<ul style="list-style-type: none"> - Law No. 50/2014/QH13 dated June 18, 2014 of the National Assembly on Construction, Article 3, Clause 42, Article 80; - Decree No. 59/2015/NĐ-CP dated June 18, 2015 of Government on Construction project management, Article 23.

Validity	n.a.
Fee	None
Time line	Within 2-3 months
Stage	Prior to Construction permit

3.2.12. Comment/ Appraisal on technical design documents


Description	<p>The MOIT/ DOIT, in consultation with the different related departments, will comment and review the technical design documents. These comments and the appraisal are sent back to the developer, who shall improve and re-submit the documentation until no further comments are made.</p> <p>The technical design of a wind farm > 30 MW is to be submitted to MOIT.</p> <p>The technical design of a wind farm ≤ 30 MW is to be submitted to DOIT.</p>
Responsible	MOIT/ DOIT
Requirements	<p>The documents shall be submitted to the MOIT/ DOIT for appraisal including the following documents:</p> <ol style="list-style-type: none"> 1) A written request for appraisal of technical design; 2) The technical design documents and relevant construction survey documents; 3) A copy of a decision on approval for the FS report enclosed with the approved basic design documents; 4) A copy of documentation on qualifications of managers of construction survey and design; a written approval for fire prevention and fighting and EIA report.
Regulations	<ul style="list-style-type: none"> - Decree No. 59/2015/NĐ-CP dated June 18, 2015 of Government on Construction project management, Article 26, Article 29, Article 30, Appendix II; - Circular 06/2016/TT-BXD dated March 10th, 2016 of Ministry of Construction on determination and management of construction investment costs.
Validity	n.a.
Fee	Depending on project scales (about 10,000 – 20,000 USD)
Time line	n.a.
Stage	Prior to approval of technical design documents

3.2.13. Acceptance letter for technical design documents

Description	When no further comments are made on the technical design, MOIT/ DOIT will send an acceptance letter to the developer. This acceptance letter entitles the developer/ investor to approve the technical design document and total investment estimate, and commence the detailed design of the project.
Responsible	MOIT/ DOIT
Requirements	<p>Content of technical design appraisal:</p> <ol style="list-style-type: none"> 1) Compatibility of the technical design with the basic design; 2) Reasonability of work construction design solutions; 3) Compliance with applied standards, technical regulations and legal provisions on the use of building materials for works; 4) Assessment of the compatibility of design solutions with other works from the utility, their safety and assurance of safety for adjacent works; 5) Reasonableness of the selection of the equipment technology; 6) Compliance with regulations on environmental protection and fire and explosion prevention and fighting; 7) Capabilities needed by organizations and individuals to conduct construction survey and design.
Regulations	<ul style="list-style-type: none"> - Law No. 50/2014/QH13 dated June 18, 2014 of the National Assembly on Construction, Article 83; - Decree No. 59/2015/NĐ-CP dated June 18, 2015 of Government on Construction project management, Article 26, Article 27, Appendix II.
Validity	n.a.
Fee	None
Time line	<p>Within 40 days if the documents are to be sent to MOIT.</p> <p>Within 30 days if the documents are to be sent to DOIT.</p>
Stage	Prior to approval of technical design documents

3.2.14. Land clearance

Description	<p>Based on estimated land area shown in the Decision on Investment/investment certificate, the developer/investor cooperates with the land compensation and clearance organisation (including land use public service organisation and compensation, support and resettlement committee) to carry out an inventory of the land to be used by the wind farm and related installations such as way leaves, substation etc., and then develop a plan for land compensation and resettlement.</p> <p>The organization shall cooperate with Communal PC to gather feedbacks from the proposed plan. The feedback report must be documented with the representatives of Communal PC, Fatherland Front Committee and land owners.</p> <p>The organization shall submit the land compensation and resettlement plan (including agreement on land-use on communal level) to the Department of Natural Resources and Environment (DONRE) for appraisal. DONRE then submits the document to the Provincial PC for approval. Once the plan is approved, the developer/investor will pay the compensation fees to the Provincial PC, who will transfer it to the land owners. In case any resettlement issues are necessary, these will be carried out by the Provincial PC, who will hand over cleared land to the developer/investor.</p>
Responsible	Developer/ investor, land user, Communal PC, Provincial PC
Requirements	<p>The inventory, compensation and resettlement plan shall include the following items:</p> <ol style="list-style-type: none"> 1) Area of each type of land to be used; 2) Number of land users in the area to be used; 3) Estimated cost for compensation for each type and position of the land; 4) The plan of resettlement (estimated number of households, location and manner of resettlement); 5) Estimated total amount to be paid for compensation and resettlement, and source of this capital; 6) The milestone for land clearance.
Regulations	<ul style="list-style-type: none"> - Law No. 45/2013/QH13 dated November 29, 2013 of the National Assembly on Land, Article 69; - Decree No. 47/2014/NĐ-CP dated May 15, 2014 of Government on regulations on compensation, support and resettlement on land expropriation by government; - Circular No. 37/2014/TT-BTNMT dated June 30, 2014 of MONRE on detailed regulations on compensation, support and resettlement on land expropriation by government.
Validity	- n.a.
Fee	None
Time line	6-12 months

Stage	Before obtaining Land use right certificate
	Please note: In the regulations, level of compensation as well as time line is stated clearly. However, in reality, negotiation with the local people may take much longer and lead to unexpected higher expenses.

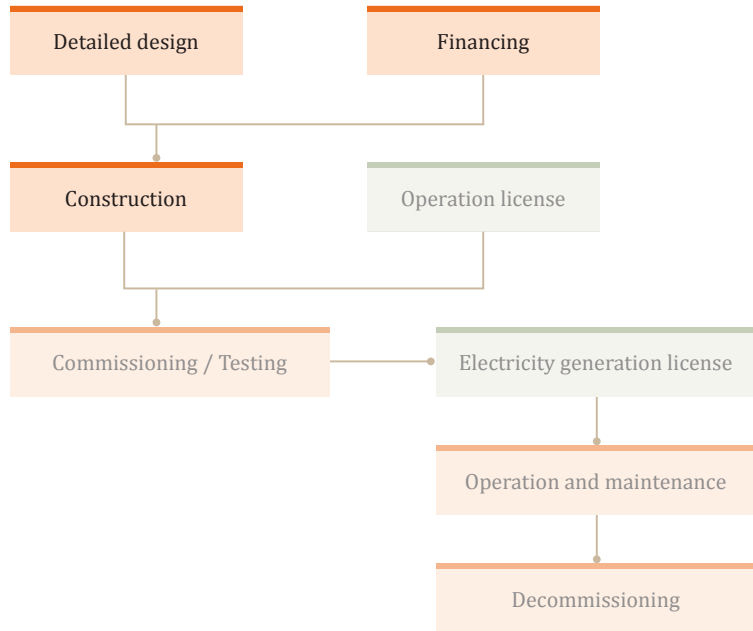
3.2.15. Land use right certificate (Land lease)

Description	Once land clearance is completed, the developer/ investor will obtain the land use certificate from Provincial PC.
Responsible	Developer/ investor, Provincial PC
Requirements	Land clearance is completed.
Regulations	<ul style="list-style-type: none"> - Law No. 45/2013/QH13 dated November 29, 2013 of the National Assembly on Land, Article 4, Article 69, Article 126; - Decree No. 47/2014/NĐ-CP dated May 15, 2014 of Government on regulations on compensation, support and resettlement on land expropriation by government; - Circular No. 37/2014/TT-BTNMT dated June 30, 2014 of MONRE on detailed regulations on compensation, support and resettlement on land expropriation by government.
Validity	50 years
Fee	- Based on land costs of specific provinces, the land lease could range between 6,000- 12,000 VND/ m ²
Time line	1-2 weeks after the land compensated
Stage	Before obtaining construction permit

3.2.16. Construction permit

Description	<p>Before starting construction, the project developer/ investor shall obtain construction permits granted by the Department of Construction.</p> <p>Major contents of a construction permit:</p> <ol style="list-style-type: none"> 1) Name and description of the project; 2) Name and address of project owner; 3) Location and position of the plant, route of the transmission lines; 4) Type and grade of the plant; 5) Construction level; 6) Redline and construction boundaries; 7) Construction density (if any); 8) Land use coefficient (if any).
Responsible	Developer/ investor, Department of Construction
Requirements	<p>The document of application for a construction permit comprises:</p> <ol style="list-style-type: none"> 1) An application form for a construction permit; 2) A copy of papers proving land use right as prescribed by the land law; 3) A copy of the project approval or Decision on investment; 4) Construction design drawings 5) Declarations on capabilities and experiences of designing organizations or individuals in charge of construction design, enclosed copies of practice certificates of design managers.
Regulations	Law No. 50/2014/QH13 dated June 18, 2014 of the National Assembly on Construction, Article 90, 95, 102
Validity	12 months (can be extended, max. twice with 12 months each)
Fee	None
Time line	Within 30 days
Stage	End of development phase

3.3. Phase C: Project implementation



3.3.1. Detailed design

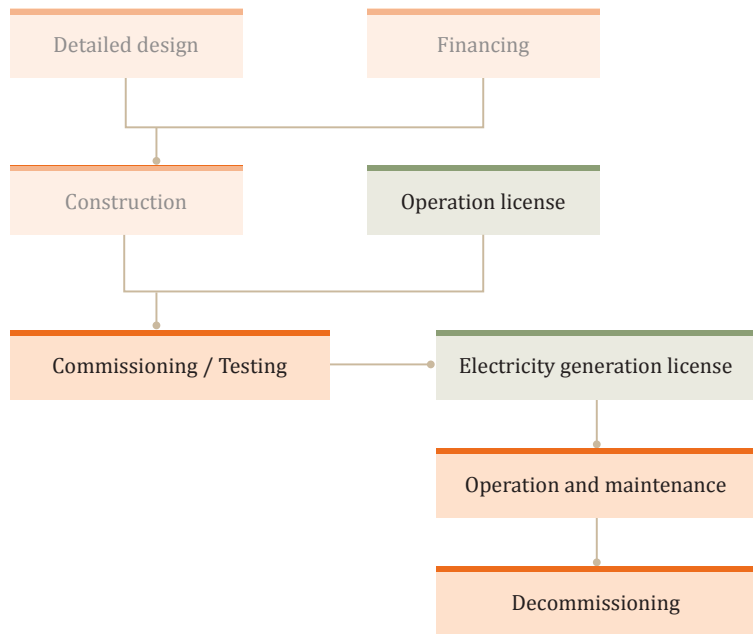
Description	The developer shall perform a detailed design of the wind farm. This detailed design shall provide the final comprehensive technical parameters, used materials, emplacement, structural analysis, and all other required detailed planning in conformity with the applied international standards and national regulations.
Responsible	Developer/ investor
Requirements	<p>The detailed design of the wind farm shall include all drawings used for construction works and cover at least the following aspects:</p> <ol style="list-style-type: none"> 1) Civil drawings of foundation construction for the wind turbines, control houses, transformers, etc.; 2) Operations manual for installing equipment of the plant: wind turbines, switchgear equipment (circuit breakers, disconnecter, surge arrester, voltage transformer, current transformer, etc.); 3) Operations manual for installing the control - protection system and telecommunication system.
Regulations	<ul style="list-style-type: none"> - Law No. 50/2014/QH13 dated June 18, 2014 of the National Assembly on Construction, Article 3, Clause 43; - Decree No. 59/2015/NĐ-CP dated June 18, 2015 of Government on Construction project management, Article 23.
Validity	n.a.
Fee	None
Time line	1-2 months
Stage	After approval of technical design and prior to start of construction

3.3.2. Construction



Description	<p>The start of construction must satisfy the following conditions:</p> <ol style="list-style-type: none"> 1) Land is available in whole or in part according to the construction schedule; 2) Valid construction permit; 3) Detailed designs finalised by the project developer/ investor; 4) Construction contracts signed between the project developer/ investor and contractor; 5) Adequate funds according to the work construction progress; 6) Planned measures to ensure safety and environmental protection; 7) PPA signed.
Responsible	<p>Developer/ investor Department of Construction</p>
Requirements	<p>The developer/ investor is requested to submit a short quarterly report and a detailed report every 6 months. The report shall cover at least the following aspects:</p> <ol style="list-style-type: none"> 1) Progress of construction work; 2) Planning for finalisation; 3) Cause and explanation of delays, if any; 4) Any issues related to health and safety, environmental impacts, compensation measures.
Regulations	<ul style="list-style-type: none"> - Law No. 50/2014/QH13 dated June 18, 2014 of the National Assembly on Construction, Article 107; - Circular No. 32/2012/TT-BCT dated November 12, 2012 of MOIT on regulations on implementation of wind power projects development and Standardized Power Purchase Agreement for wind power projects, Article 7.
Validity	<p>Construction shall start at latest 1 year after reception of the construction permit.</p>
Fee	<p>None</p>
Time line	<p>n.a.</p>
Stage	<p>End of the construction phase of the project</p>



3.4. Phase D: Project Operation and Maintenance




Legend:

-  *Process*
-  *Agreement with Vietnamese authorities*



3.4.1. Operation license

Description	<p>The developer/ investor can apply for the Operation License for operators after the Decision on investment.</p> <p>The Operation licenses are issued by the National Load Dispatch Centre (A0)/Regional Load Dispatch Centres (Ax) for operators working directly in power plants after being trained and examined.</p> <p>The course from A0 for operator shift leader is about 1 week.</p> <p>The course from Ax for operator is about 6 months.</p> <ul style="list-style-type: none"> - A0 issues the operation license for operation shift leaders; - Ax issues the operation license for operators.
Responsible	<p>National Load Dispatch Centre (A0)/ Regional Load Dispatch Centre (Ax)</p>
Requirements	<p>The developer/ investor shall submit a document showing the technical qualification of the employees in charge of the operation and maintenance of the plant, to prove sufficient technical expertise.</p> <p>The training requirements for operators are as follows:</p> <ol style="list-style-type: none"> 1) System of legal documents related to regulating and operating the power system; 2) Structure of the operational and dispatching organization of the national electricity system; 3) Composition, operational principles of the main equipment of electricity systems such as turbines, generators, transformers, capacitors, inductors, transmission lines, circuit breakers, disconnectors, current transformers, voltage transformers; 4) Operational principles and technology of power plants; 5) Main types of electrical diagram of power plants: main characteristics, operational principles and operational coordination; 6) Operational principles, remote control of control centre (for power plants remotely controlled and operated from control centres); 7) Operational principles of protective relays, automation, measurement and control equipment of electrical system in power plants/substations; protective principles for key items of power plants and power stations; 8) Knowledge of dispatching and operating power plants/ substations; 9) Basic knowledge of control systems, information technology systems, remote terminal unit RTU/ Gateway in power plants/substations and SCADA systems serving the dispatching and operation works; 10) Operational modes of power plants in electricity power systems, frequency regulation, voltage regulation, reservepower allocation;

	11) Procedure for coordinating operations, switching and fault clearance, in power plants/substations.
Regulations	<ul style="list-style-type: none"> - Circular No. 40/2014/TT-BCT dated November 5, 2014 of MOIT on stipulating the procedure for dispatching of national power system; - Decision No. 45/QD-DTDL dated July 1, 2015 of ERAV on Promulgation of the procedure for examining and issuing operation certificates for officers directly participating in regulating, operating the national electricity system.
Validity	10 years
Fee	<p>These courses are mandatory for the operating staff of the wind farm, and are displayed by A0/Ax to the following condition:</p> <ul style="list-style-type: none"> - Up to 25,000 USD per training course (6 months for a group of 15-20 operators); - 8,000 USD to 10,000 USD per training course (1 week for a group of 5-7 shift leaders).
Time line	<ul style="list-style-type: none"> - Ax: 6 months training course for operators; - A0: 1 week specialized training course for operation shift leaders.
Stage	Before commissioning
	<p>The operation license is valid for 10 years only, but can be renewed.</p> <p>The foreign operators can also be granted operation licenses in case they meet Vietnamese regulations. However, at the moment, there is no regulations for foreigner to apply for the operation license.</p>

3.4.2. Commissioning/ Testing

Description	<p>The developer/ investor shall conduct an inspection for the acceptance of the completion of the plant, and document an Acceptance report.</p> <p>If there are unresolved issues in terms of quality that do not threaten the essential requirement of the plan such as power capacity, life cycle and operational safety, the developer/ investor may decide to grant conditional acceptance for a construction item. Nevertheless, minimum safety requirements must be met.</p> <p>The acceptance report shall specify the shortcomings in terms of quality, and set a deadline to complete remedial measures. The developer/ investor shall grant acceptance once the shortcomings have been remedied.</p>
Responsible	Project developer/ investor, MOIT/ DOIT
Requirements	<p>The conditions for gaining acceptance for the completion of work items are:</p> <ol style="list-style-type: none"> 1) The finished construction tasks have been inspected and granted acceptance. The results of experiments and testing shall conform to the technical requirements specified in the detailed design; 2) There are no unresolved major issues in terms of construction quality that threaten the operational safety of the plant; 3) The plan shall gain the acceptance of fire prevention and fighting from the Fire Department; 4) Developer/ investor must obtain the certificate for completing the environmental impact assessment (EIA); 5) MOIT/ DOIT has conducted an inspection of the acceptance and issued a written approval for the acceptance result. <p>MOIT is responsible for appraisal if the plant has > 30 MW (grade I).</p> <p>DOIT is responsible for appraisal if the plant has ≤ 30 MW.</p>
Regulations	<ul style="list-style-type: none"> - Law No. 50/2014/QH13 dated June 18, 2014 of the National Assembly on Construction, Article 123; - Decree No. 46/2015/ND-CP dated May 12, 2015 of Government on quality control and maintenance construction works, Article 31, Article 32.
Validity	n.a.
Fee	None

Time line	Within 15 days before the day of commissioning, the developer/ investor shall submit an application to MOIT/ DOIT for inspection of acceptance. Within 15 days for trial run, the COD (Commercial Operation Date) shall be conducted.
Stage	Before COD

3.4.3. Electricity generation license

Description	The project developer/investor shall obtain an Electricity generation license in order to be allowed to officially operate the wind power plant and commence its commercial activities. The license can be granted once construction is completed, the project developer/ investor has obtained the Power Purchase Agreement (PPA), and has performed all required testing and commissioning procedures.
Responsible	Electricity Regulatory Authority of Vietnam (ERAV)
Requirements	<p>The developer/ investor shall submit an official request for an electricity production license, fill-in the application form and provide the following information:</p> <ol style="list-style-type: none"> 1) A written request for issuance of the electricity generation license; 2) A copy of the Certificate of enterprise registration; 3) List of direct technical management staff, team of shift heads of the plant; a copy of graduation diplomas and operation licenses of the operators; 4) A copy of the Decision on investment/ Investment certificate; 5) A copy of the decision approving the report on the Environment Impact Assessment (EIA); 6) A copy of the PPA; 7) A list of equipment with strict requirements on labour safety and commitment of project owner to fully comply with labour safety regulations in using equipment; 8) A copy of the document on ensuring the fire prevention and fire fighting conditions; 9) A copy of the acceptance record of information technology and telecommunications system and the acceptance record of completion of signal connection to the SCADA/EMS, SCADA/DMS system of dispatching level with the control right for proper operation of a power system; 10) A copy of the final acceptance record or written certification ensuring the commercial operation conditions for each generating unit; 11) A copy of the procedure for coordinated operation with the load dispatching centres.
Regulations	Circular No. 10/2015/TT-BCT dated May 29, 2015 of MOIT on providing for order and procedures for issue, revocation and duration of electricity activity permit, Article 10.
Validity	10 years (can be extended)
Fee	Based on regulations (between 2,000 and 3,000 USD)
Time line	Within 15 days after submitting a complete application
Stage	After commissioning/ testing, before commercial operation



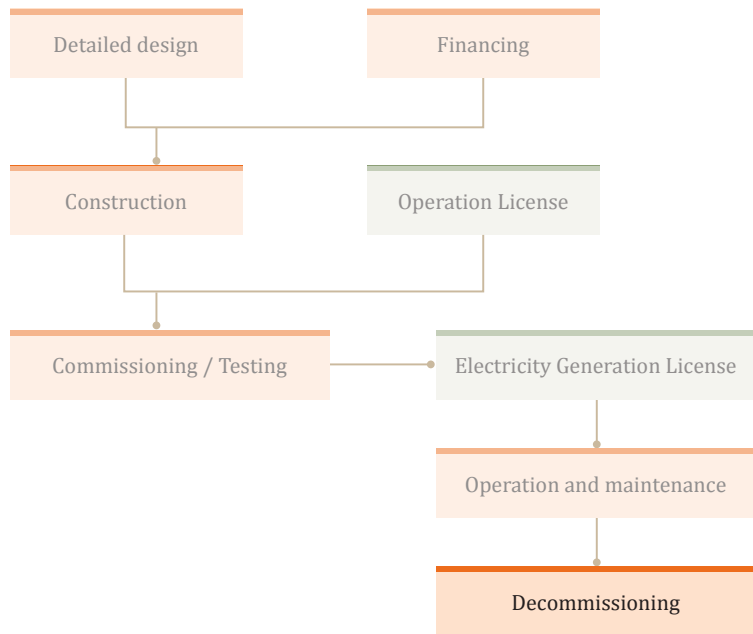
The generation license can only be received after commissioning/ testing of the wind farm. Please note that the generation license is provided for 10 years only. After 10 years, the license can be extended for another 10 years.

3.4.4. O&M

Description	<p>After completion of commissioning, the developer/ investor shall prepare the operation schedule of the plant and draw up an annual maintenance plan.</p> <p>For a plant ≥ 30 MW, the warranty period needs to be a minimum of 24 months with a deposit of at least 3% of the investment for operation and maintenance. In addition, plant owners need to submit the maintenance schedule for electrical equipment and request A0 for approval annually.</p> <p>For a plant < 30 MW, the warranty period needs to be a minimum of 12 months with a deposit of at least 5% of the investment for operation and maintenance. In addition, plant owners need to submit the maintenance schedule for electrical equipment to request Ax for approval annually.</p>
Responsible	<p>Developer/ investor</p> <p>A0/ Ax</p>
Requirements	<p>The required operation documents are at least as follows:</p> <ol style="list-style-type: none"> 1) Operation and maintenance manuals development; 2) Operator training and capacity building; 3) Monitoring and performance control; <p>The maintenance procedures of the plant shall include the following main items:</p> <ol style="list-style-type: none"> 1) The technological parameter of the equipment; 2) Regulations on the time of maintenance and guidance on periodic replacement of the equipment; 3) Regulations on lifespan of the equipment; 4) Other instructions relating to the conditions for ensuring labour safety and environmental protection during the maintenance of the plant.
Regulations	<ul style="list-style-type: none"> - Law No. 50/2014/QH13 dated June 18, 2014 of the National Assembly on Construction, Article 126; - Decree No. 46/2015/ND-CP dated May 12, 2015 of Government on quality control and maintenance construction works, Article 35, Article 38, Article 39; - Procedure No. 08/QD-DTDL dated March 14, 2013 of ERAV on scheduling maintenance work of electrical equipment in national transmission grid.
Validity	<p>Annual</p>
Fee	<p>n.a.</p>

Time line	n.a.
Stage	During O&M phase

3.5. Phase E: Project decommissioning



3.5.1. Decommissioning

Description	<p>At the end of the operation period of the project, the wind farm will either be upgraded and reconditioned or decommissioned. In case of decommissioning, the site shall be restored to its previous land use.</p> <p>Decommissioning means that the wind turbines, site office and any other aboveground infrastructure must be removed from the site, roads and foundation pads covered and re-vegetated, returning the ground to its former state.</p> <p>Depending on the land use plan for the area, some parts of the wind farm that continue to serve a functional purpose maybe left behind, such as power lines and other regular electricity infrastructure, otherwise they shall be removed.</p>
Responsible	Developer/ investor
Regulations	<p>The developer/ investor shall present a comprehensive decommissioning and restoration plan addressing all significant aspects of the decommissioning process.</p> <p>Once the operational life of the plant is expired, the plant owner shall:</p> <ol style="list-style-type: none"> 1) Conduct inspections and assessments of the work's current conditions; 2) Report the results of quality inspection, and results of the assessment to Provincial PC; 3) Organise dismantling of the installation and if necessary removal of electrical cables, foundation, roads and crane pads; 4) Transport and recycling of any waste; 5) Restoration of the site (earth works, landscaping and plantation).
Regulations	Decree No. 46/2015/ND-CP dated May 12, 2015 of Government on quality control and maintenance construction works, Article 45
Validity	Life time of the wind plant is expected to be 20 years.
Fee	None
Time line	n.a.
Stage	The plan shall be presented together with the design of the wind farm. Decommissioning shall occur at the end of the operational life of the wind farm, expected to be after 20 years of operation.



Conclusion

For the sake of completeness and compliance with the regulation in force in Vietnam, the process of developing a wind power project has been described in detail in these guidelines. While it may appear complex and possibly discouraging to new developers/ investors who are not familiar with the national environment, it is important to mention that most of the responsible authorities are quite supportive and interested in the development of wind power in Vietnam. Local experience shows that some projects have been developed within 3 to 5 years from site selection to COD. This duration seems fully ac-

ceptable and comparable to international industry standards. Furthermore, EVN enjoys an excellent reputation among its partners, off-takers and IPPs, thanks to an impeccable track record over the past 40 years. In addition, the ongoing work of the Vietnamese government on improving the framework for wind power combined with the recently signed TPP agreement should give some confidence to professional developers/ investors to start developing their activities and projects in a high potential market, which is still partly unexploited.





Annexes

1. Templates

1.1. Sample 1: Letter of interest to DOIT/ DPI for investment of wind projects

Tên nhà đầu tư

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập - Tự do - Hạnh phúc

....., Ngày.....tháng.....năm

Kính gửi: Sở Công Thương tỉnh.....

Về việc Đầu tư dự án

Các nhà đầu tư:

A. Bên Việt Nam(đại diện):

(Tên nhà đầu tư trong nước)

- Tên Công ty:

- Giấy chứng nhận đăng ký kinh doanh số:cấp ngày.....bởi Phòng Đăng ký Kinh doanh – Sở Kế hoạch và Đầu tư (tỉnh/ thành)

- Địa chỉ trụ sở chính:

Tel:

Fax:

ĐTDD:

Email:

- Người đại diện pháp luật:

Sinh ngày:..... Quốc tịch:..... CMND số:.....

Chức vụ:..... Địa chỉ thường trú:..... Chỗ ở hiện tại:.....

B. Bên nước ngoài (đại diện):

(Tên nhà đầu tư nước ngoài liên danh)

- Tên Công ty:.....

Ngày thành lập:.....

- Địa chỉ trụ sở chính:

Tel:..... Fax..... ĐTDD:..... Email:.....

- Người đại diện pháp luật:

Sinh ngày:..... Quốc tịch:.....

Hộ chiếu số:..... Chức vụ:.....

Địa chỉ thường trú:..... Chỗ ở hiện tại:.....

Sau khi tìm hiểu chính sách và môi trường đầu tư của tỉnh....., tổ hợp các doanh nghiệp liên doanh chúng tôi mong muốn đầu tư thực hiện dự án tại tỉnh..... với nội dung như sau:

1. Tên dự án đầu tư:

2. Lĩnh vực đầu tư (ngành nghề): Sản xuất, kinh doanh, bán điện, xây dựng, lắp đặt thiết bị điện gió.

3. Địa bàn: tỉnh, Việt Nam

4. Diện tích, vị trí đất sử dụng và khảo sát:

5. Quy mô đầu tư:.....MW

6. Tổng vốn đầu tư dự án: (ước tính)

7. Vốn và nguồn vốn đầu tư: Vốn vay các ngân hàng và các tổ chức tín dụng dự kiến chiếm 80%. Vốn huy động các cổ đông trong liên doanh dự kiến 20%.

8. Thời gian hoạt động dự án: 50 năm

9. Hình thức đầu tư: Liên doanh giữa Việt Nam và nước ngoài

10. Loại hình đầu tư: Thành lập công ty liên doanh mới có trụ sở chính tại Việt Nam.

11. Sử dụng lao động: (số lượng người lao động phục vụ dự án trong giai đoạn xây dựng và giai đoạn vận hành).

12. Sản phẩm chính và thị trường tiêu thụ: Sản xuất và bán điện cho Tập đoàn Điện lực Việt Nam EVN.

Rất mong nhận được sự quan tâm, xem xét và chấp thuận của Quý Sở Công Thương

Chân thành cảm ơn và trân trọng kính chào.

Nhà đầu tư

(Ký tên, đóng dấu và ghi rõ họ tên, chức vụ)

1.2. Sample 2: Letter submitted to DOIT/ MOIT for appraisal of FS reports

Tên nhà đầu tư

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập - Tự do - Hạnh phúc

....., Ngày.....tháng.....năm

TỜ TRÌNH

Thẩm định dự án đầu tư xây dựng công trình

Kính gửi: (Cơ quan chủ trì thẩm định)

Căn cứ Luật Xây dựng ngày 18 tháng 6 năm 2014;

(Tên tổ chức) trình (Cơ quan chủ trì thẩm định) thẩm định dự án đầu tư xây dựng (Tên dự án) với các nội dung chính sau:

I. THÔNG TIN CHUNG DỰ ÁN (CÔNG TRÌNH)

1. Tên dự án:.....
2. Nhóm dự án:.....
3. Loại và cấp công trình:.....
4. Tên chủ đầu tư và các thông tin để liên hệ (địa chỉ, điện thoại.....):.....
5. Địa điểm xây dựng:.....
6. Giá trị tổng mức đầu tư.....
7. Nguồn vốn đầu tư:.....
8. Thời gian thực hiện:.....
9. Tiêu chuẩn, quy chuẩn áp dụng:.....
10. Nhà thầu lập báo cáo nghiên cứu khả thi:.....
11. Các thông tin khác (nếu có):.....

II. DANH MỤC HỒ SƠ GỬI KÈM BÁO CÁO

1. Văn bản pháp lý:

- Quyết định chấp thuận chủ trương đầu tư xây dựng hoặc giấy chứng nhận đăng ký đầu tư;
- Quyết định lựa chọn nhà thầu lập dự án;
- Quy hoạch chi tiết tỷ lệ 1/500 được cấp có thẩm quyền phê duyệt hoặc giấy phép quy hoạch của dự án;
- Văn bản thẩm duyệt hoặc ý kiến về giải pháp phòng cháy chữa cháy, báo cáo đánh giá tác động môi trường của cơ quan có thẩm quyền (nếu có);
- Các văn bản pháp lý khác có liên quan (nếu có).

2. Tài liệu khảo sát, thiết kế, tổng mức đầu tư:

- Hồ sơ khảo sát xây dựng phục vụ lập dự án;
- Thuyết minh báo cáo nghiên cứu khả thi (bao gồm tổng mức đầu tư);
- Thiết kế cơ sở bao gồm bản vẽ và thuyết minh.

3. Hồ sơ năng lực của các nhà thầu:

- Thông tin năng lực của nhà thầu khảo sát, nhà thầu lập dự án, thiết kế cơ sở;
- Chứng chỉ hành nghề và thông tin năng lực của các chức danh chủ nhiệm khảo sát, chủ nhiệm đồ án thiết kế, chủ trì thiết kế của nhà thầu thiết kế.

(Tên Nhà đầu tư) trình (Cơ quan chủ trì thẩm định) thẩm định dự án đầu tư xây dựng (Tên dự án) với các nội dung nêu trên./.

Nơi nhận:

- Như trên;
- Lưu.

ĐẠI DIỆN NHÀ ĐẦU TƯ
(Ký, ghi rõ họ tên, chức vụ và đóng dấu)

Tên người đại diện

1.3. Sample 3: Letter submitted to DOIT/ MOIT for appraisal of Technical design report

Tên nhà đầu tư

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập - Tự do - Hạnh phúc

....., Ngày.....tháng.....năm

TỜ TRÌNH

Thẩm định thiết kế kỹ thuật xây dựng công trình

Kính gửi: (Cơ quan thẩm định)

Căn cứ Luật Xây dựng ngày 18 tháng 6 năm 2014;

(Tên chủ đầu tư) trình (Cơ quan thẩm định) thẩm định thiết kế kỹ thuật xây dựng công trình

I. THÔNG TIN CHUNG DỰ ÁN (CÔNG TRÌNH)

1. Tên dự án:.....
2. Nhóm dự án:.....
3. Thuộc dự án: Theo quyết định đầu tư được phê duyệt.....
4. Tên chủ đầu tư và các thông tin để liên lạc (điện thoại, địa chỉ,...):.....
5. Địa điểm xây dựng:.....
6. Giá trị tổng dự toán xây dựng công trình:.....
7. Nguồn vốn đầu tư:.....
8. Nhà thầu lập thiết kế và dự toán xây dựng:.....
9. Tiêu chuẩn, quy chuẩn áp dụng:.....

10. Các thông tin khác có liên quan (nếu có):.....

II. DANH MỤC HỒ SƠ GỬI KÈM BAO GỒM

1. Văn bản pháp lý:

- Quyết định phê duyệt dự án đầu tư xây dựng công trình;
- Hồ sơ thiết kế cơ sở được phê duyệt cùng dự án đầu tư xây dựng;
- Văn bản phê duyệt danh mục tiêu chuẩn nước ngoài (nếu có);
- Văn bản thẩm duyệt phòng cháy chữa cháy, báo cáo đánh giá tác động môi trường của cơ quan có thẩm quyền (nếu có);
- Báo cáo tổng hợp của chủ đầu tư;
- Các văn bản khác có liên quan.

2. Tài liệu khảo sát xây dựng, thiết kế:

- Hồ sơ khảo sát xây dựng;
- Hồ sơ thiết kế kỹ thuật bao gồm thuyết minh và bản vẽ.

3. Hồ sơ năng lực của các nhà thầu:

- Thông tin năng lực của nhà thầu khảo sát, nhà thầu thiết kế xây dựng công trình;
- Giấy phép nhà thầu nước ngoài (nếu có);
- Chứng chỉ hành nghề của các chức danh chủ nhiệm khảo sát, chủ nhiệm đồ án thiết kế, chủ trì thiết kế của nhà thầu thiết kế.

(Tên Nhà đầu tư) trình (Cơ quan thẩm định) thẩm định thiết kế và dự toán xây dựng công trình.... với các nội dung nêu trên./.

Nơi nhận:

- Như trên;
- Lưu.

ĐẠI DIỆN NHÀ ĐẦU TƯ
(Ký, ghi rõ họ tên, chức vụ và đóng dấu)

Tên người đại diện

2. List of legal documents (process-related)

2.1. Legal documents related to power system

1. Law No. 28/2004/QH11 dated December 14, 2004 of the National Assembly on electricity;
2. Law No. 24/2012/QH13 dated November 20, 2012 of the National Assembly amending and supplementing a number of articles of the Electricity Law;
3. Decision No. 428/QD-TTg dated March 18, 2016 of the Prime Minister approving the Revised national master plan for power development in the 2011-2020 period, with considerations to 2030;
4. Circular No. 12/2010/TT-BCT dated April 15, 2010 of MOIT on Regulations on Transmission Power System;
5. Circular No. 43/2013/TT-BCT dated December 31, 2013 of MOIT entitled regulations on content, sequence, procedures for formulation, assessment, approval and adjustment to electricity development planning;
6. Circular No. 56/2014/TT-BCT dated December 19, 2014 of MOIT entitled regulation on methodology of electricity rate determination, procedure to verify power purchase agreement;
7. Circular No. 39/2015/TT-BCT dated November 18, 2015 of MOIT on Regulations on Distribution Power System;
8. Decision No. 1208/QD-EVN dated July 28, 2008 of EVN entitled regulation on establishment, build-up, operation management of SCADA system regarding power substations/plants;
9. Decree No. 137/2013/ND-CP of October 21, 2013, detailing a number of articles of the Electricity Law and the Law amending and supplementing a number of articles of the Electricity Law;
10. Procedure No. 1449/QD-EVNNPT dated June 17, 2015 of EVN entitled regulation on scope, procedure of grid connection agreement;
11. Circular No. 42/2015/TT-BCT dated December 1, 2015 of MOIT on Requirements of electricity measurements in Power system;
12. Decision No. 887/QD-EVN dated October 14, 2014 of EVN on regulations on technical specification of electric meter;
13. Decision No. 246/QD-EVN dated April 26, 2014 of EVN on regulations on negotiation, signing and implementation of electricity purchase and sale contracts for power projects;
14. Decision No. 1232/QD-EVN dated February 21, 2011 on regulations on measurement system management in electricity boundary point.

2.2. Legal documents related to wind power

1. Decision No. 37/2011/QĐ-TTg dated June 29, 2011 of Prime Minister on the mechanism supporting the development of wind power project in Vietnam;
2. Circular No. 32/2012/TT-BCT dated November 12, 2012 of MOIT on Regulations on implementation of wind power projects development and Standardized Power Purchase agreement for wind power projects.

2.3. Legal documents related to investment in Vietnam

1. Law No. 67/2014/QH13 dated November 26, 2014 of the National Assembly on Investment;
2. Decree No. 118/2015/NĐ-CP dated November 12, 2015 of Government on guiding of applying the Investment Law;
3. Circular No. 218/2013/TT-BTC dated December 31, 2013 of the Ministry of Finance providing the financial management of programs and projects funded with official development assistance (ODA) and concessional loans of foreign donors.

2.4. Legal documents related to construction and environmental aspects

1. Law No. 50/2014/QH13 dated June 18, 2014 of the National Assembly on Construction;
2. Law No. 45/2013/QH13 dated November 29, 2013 of the National Assembly on Land;
3. Law No. 55/2014/QH13 dated June 23, 2014 of the National Assembly on Environmental protection;
4. Law No. 27/2001/QH10 dated June 29, 2001 of the National Assembly on Fire prevention & fighting;
5. Law No. 40/2013/QH13 dated on amending and adding a number of articles of the Law on Fire prevention & fighting;
6. Decree No. 59/2015/NĐ-CP dated June 18, 2015 of Government on Construction project management;
7. Decree No. 18/2015/NĐ-CP dated February 14, 2015 on environmental protection planning, strategic environmental assessment, environmental impact assessment and environmental protection plan;
8. Decree No. 47/2014/NĐ-CP dated May 15, 2014 of Government on Regulations on compensation, support and resettlement on land expropriation by government;
9. Decree No. 79/2014/NĐ-CP dated July 31, 2014 of Government on guidelines for the Law on Fire prevention & fighting and the law on amending and adding a number of articles of the Law on Fire prevention & fighting;

10. Circular No. 27/2015/TT-BTNMT dated May 29, 2015 of MONRE on strategic environmental assessment, IEA and environmental protection plans;
11. Circular No. 218/2010/TT-BTC dated December 29, 2010 of MOF on Providing for the payment, management and use of charges for appraising EIA reports;
12. Circular No. 37/2014/TT-BTNMT dated June 30, 2014 of MONRE on detailed regulations on compensation, support and resettlement on land expropriation by government;
13. Circular No. 66/2014/TT-BCA dated December 16, 2014 of Ministry of public security on detailing the implementation of a number of articles of the decree No.79/2014/ND-CP;
14. Circular No. 150/2014/TT-BTC dated October 10, 2014 of MOF on the rates, collection, payment, management and use of fees for appraisal of fire fighting design;
15. Circular 18/2016/TT-BXD dated June 30, 2016 on Detailing and guiding some contents of project appraisal and approval and design and estimate of works construction, affected from 15/8/2016;
16. Decree No. 43/2014/ND-CP dated May 15, 2014 on detailing a number of articles of the Land Law No. 45/2013/QH13;
17. Circular No. 176/2011/TT-BTC dated December 5, 2011 of Ministry of Finance on guiding the collection, remittance and use management of the charge for appraisal of construction investment projects;
18. Circular 06/2016/TT-BXD dated March 10th, 2016 of Ministry of Construction on determination and management of construction investment costs.

2.5. Legal documents related to completion & operation

1. Decree No. 46/2015/ND-CP dated May 12, 2015 of Government on Quality control and maintenance construction works;
2. Circular No. 10/2015/TT-BCT dated May 29, 2015 of MOIT on providing for order and procedures for issue, revocation and duration of electricity activity permit;
3. Circular No. 40/2014/TT-BCT dated November 5, 2014 of MOIT on stipulating the procedure for dispatching of national power system;
4. Decision No. 45/QD-DTDL dated July 1, 2015 of ERAV on Promulgation of the procedure for examining and issuing operation certificate for the officers directly participating in regulating, operating the national electricity system;
5. Procedure No. 08/QD-DTDL dated March 14, 2013 of ERAV on scheduling maintenance work of electric equipment in national transmission grid.



3. Contacts & Institutions

Institution	Contact Address	Webpage
Ministry of Industry and Trade (MOIT)	54 Hai Ba Trung, Ha Noi Phone: (84-4) 22 202 222	http://www.moit.gov.vn
Ministry of Planning & Investment (MPI)	6B Hoang Dieu, Hà Nội Phone: (84-4) 38 455 298	http://www.mpi.gov.vn
General Directorate of Energy (GDE)	23 Ngo Quyen – Ha Noi Phone: (84-4) 62 786 184	http://www.tcnl.gov.vn
Electricity Regulatory Authority of Vietnam (ERAV)	D10 Khuat Duy Tien - Ha Noi Phone: (84-4) 22 147 474	http://www.erav.vn
Vietnam Electricity (EVN)	11 Cửa Bắc -Hà Nội Phone: (84-4) 66 946 720	http://www.evn.com.vn
National Power Transmission Corporation (NPT)	18 Tran Nguyen Han, Ha Noi ĐT: (84-4) 22 204 444	http://www.npt.evn.vn
National Load Dispatch Center (NLDC) Departments: - Power System Analysis and Planning - Power System Market Operation - Power System Operation	11 Floor, EVN building, 11 Cua Bac – Ha Noi Phone: (84-4) 39 276 180	http://www.nldc.evn.vn
Northern Regional Load Dispatch Center (NRLDC) Departments: - Power System Analysis and Planning - Power System Operation	7 Floor, EVN building, 11 Cua Bac – Ha Noi Phone: (84-4) 3927 6151	http://www.nrldc.evn.vn

Central Regional Load Dispatch Center (CRLDC)	No. 80 Duy Tan Street, Hai Chau District, Da Nang city	http://www.crldc.evn.vn
Departments:	Phone: (84-5) 11363 0331	
- Power System Analysis and Planning		
- Power System Operation		
Southern Regional Load Dispatch Center (SRLDC)	No. 5 Su Thien Chieu Street, District No. 3, Ho Chi Minh city	http://www.moit.gov.vn
Departments:	Phone: (84-8) 2221 0207	
- Power System Analysis and Planning		
- Power System Operation		
Electric Power Trading Company (EPTC)	12 Floor, EVN building, 11 Cua Bac – Ha Noi	http://www.eptc.vn
	Phone: (84-4) 22 218 219	
Department of Fire Prevention & Fighting	2A Đinh Le - Hà Nội	http://www.canhsatpccc.gov.vn
	Phone: (84-4) 06 940 159	
Ministry of Natural Resources and Environment (MONRE)	10 Ton That Thuyet, Cau Gay, Ha Noi	http://www.monre.gov.vn
	Phone: (043) 7956868	

MOIT/GIZ Energy Support Programme

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