

Wind Energy in Vietnam

Potential, Opportunities and Challenges

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Vietnam – a challenging, yet promising market!

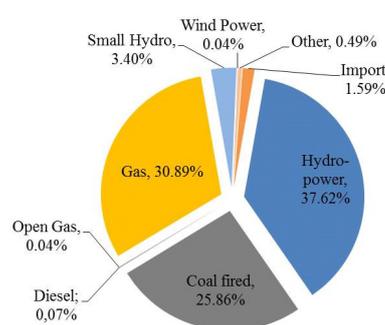
Vietnam Energy Market Overview

Vietnam's fast-growing economy has been the main driver for the rapidly-increasing electricity demand throughout the country over the past years.

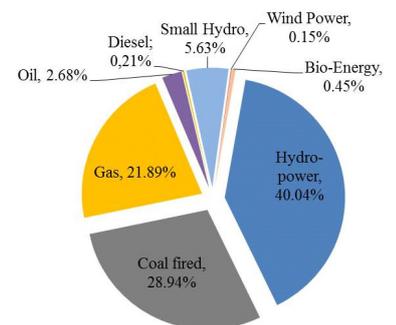
Vietnam's annual electricity production increased more than tenfold, from **8.6 TWh** in 1990 to **145.5 TWh** in 2014 (World Bank, EVN, 2015). The annual increase in this period was between **12-15%** - almost twice as high as the GDP growth rate.

Vietnam's overall installed generation capacity was **34 GW** in 2014.

Hydropower, natural gas and coal are the most important sources for electricity production. The development of renewable energy technologies is still at an early stage.



2014: 145.5 TWh



2014: 34 GW

Electricity Production and Generation Capacity 2014
Source: EVN

Facilitator

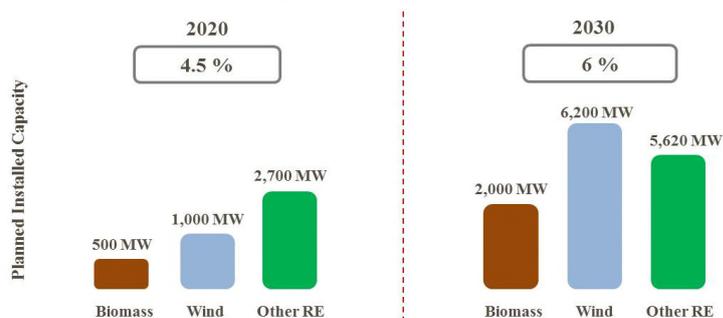
Wind Energy Potential and Opportunities

In order to secure energy supply and, at the same time, reduce energy related greenhouse gas emissions, the Vietnamese government has set itself ambitious targets for renewable energy development. According to the National Power Development Plan (PDP VII), Vietnam aims to increase its renewable energy share in power production from **3.5%** in 2010 to **4.5%** in 2020 and **6%** in 2030. This will bring the total wind power capacity from the current negligible level to around **1,000 MW** by 2020 and around **6,200 MW** by 2030.

Located in the monsoon climate zone, and shaped by its over **3,000 km** long coastline, Vietnam is bestowed with large wind energy potential. Meteorological as well as measurement data shows that the average wind speed per year ranges from **5.5 m/s** to **7.3 m/s**: favourable conditions for wind energy development. The technical potential for wind power development in Vietnam is estimated to be around **27 GW**, covering a land area of 2,681 km² (AWS Truepower - 2011). However, only **52 MW** of wind power has been put to operation up until now.

The current remuneration scheme of wind energy in Vietnam includes a feed-in tariff of **7.8 US¢/kWh**, with the PPA duration of 20 years. The feed-in tariff is currently under revision to become more favourable for the commercial development of the sector.

In addition, there are other supplementary instruments, such as an import tax exemption, land incentives, a corporate income tax reduction, etc incentivising the development of the sector.



Other RE: Biogas, Waste-to-Energy, Solar PV/ST, SHP etc.

Renewables Targets in the PDP VII

Source: Decision No. 1208/QĐ-TTg dated 21 July 2011

Wind Energy Challenges

A number of regulatory and market barriers limit the industry to scale up to its full potential.

Besides the low feed-in tariff that needs to be adjusted, some other challenges are missing finance, low data reliability, the lack of a systematic and consistent database, a deficiency in qualified human resources and technical infrastructure, as well as an inadequate supply of auxiliary equipment and services.

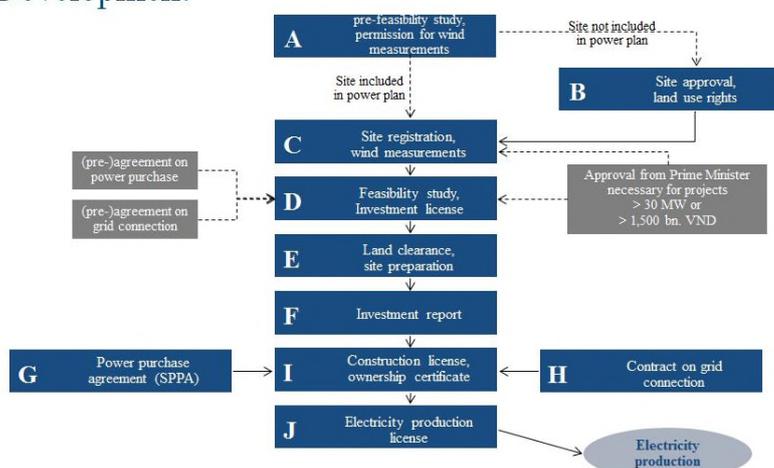
Complex procedures to undertake investments make it difficult for foreign investors to tap into the market. Local institutional

stakeholders are unclear about procedures, leading to subjective interpretation and application of national regulations at the province level.

The Renewable Energy Project Development Program (PDP), implemented by GIZ, provides its services on partnership establishment, reference projects development, capacity building and support of regulatory frameworks, in order to help German companies develop long-term businesses in Vietnam thereby supporting the development of the renewable energy sector.

Process for Wind Power Project Development*

* This figure only gives a general overview about the project development process. In practice this process can vary amongst provinces!



Process for Wind Power Project Development

Source: GIZ

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