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GlobalData

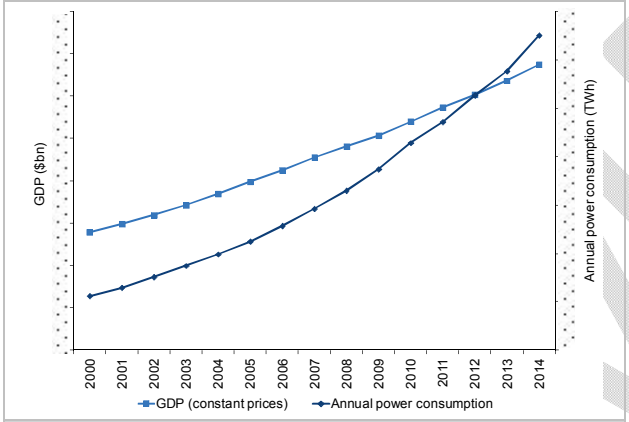
VIETNAM POWER MARKET OUTLOOK TO 2025, UPDATE 2015 – MARKET TRENDS, REGULATIONS, AND COMPETITIVE LANDSCAPE

Executive Summary

Overview of Vietnam's Power Sector

Vietnam's power sector is one of the most rapidly expanding in Southeast Asia. Gross Domestic Product (GDP) grew from $XX billion in 2000 to $XX billion in 2014 at a Compound Annual Growth Rate (CAGR) of XX% (calculated at constant rates). Power consumption increased at a CAGR of XX%.

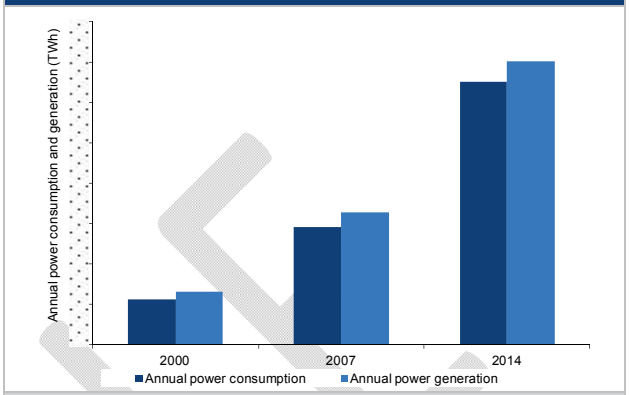
Power Market, Vietnam, Gross Domestic Product ($bn) and Annual Power Consumption (TWh), 2000–2014



Source: GlobalData; IMF, 2015

Between 2000 and 2014, power consumption increased at a CAGR of XX%, and generation increased at a CAGR of XX%. In 2014, consumption amounted to XX Terawatt hours (TWh), and generation amounted to XX TWh.

Power Market, Vietnam, Annual Power Consumption and Generation (TWh), 2000–2014



Source: GlobalData, Power Database [Accessed on June 23, 2015]

It is estimated that power consumption will continue to grow in the 2015–2025 period but at a slightly lower CAGR of XX%, which will still be high enough to attract investment. The government is researching investing in nuclear and renewable power as possible ways of improving its power mix and energy security. It even has ambitious plans for the installation of a smart grid. It is currently highly dependent on hydropower and thermal power, which accounted for XX% and XX%, respectively, of installed capacity in 2014.

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2 Introduction

Vietnam is a developing country that, in spite of political turmoil, has developed rapidly in the past few decades. Its socialist republic form of government is governed through a centralized system, dominated by the Vietnamese Communist Party. Over the last few decades, the government has employed increasingly liberal development and economic initiatives. Vietnam joined the World Trade Organization in 2007 and is a member of various other international organizations, including the Asia-Pacific Economic Corporation, the Association of South East Asian Nations (ASEAN) and the International Chamber of Commerce.

The economy, though liberalized, is still dominated by state-owned enterprises. In 2011, the government launched its three-pillar economic reforms program, which proposes the restructuring of public investments, state-owned enterprises and the banking sector. With these reforms the government plans to transform Vietnam into a more export-oriented and competition-driven economy. In 2014, Vietnam's revenue from exports was $XX billion (CIA, 2015). Major export items include machinery products, electronics, and crude oil. China and Japan are the current major investors, and the government is endeavoring to establish trade relationships with other developing nations.

In 2014, Gross Domestic Product (GDP) increased by XX% to $XX billion (at constant prices) (IMF, 2015). The economy is highly export driven and was affected negatively by the global economic recession in 2008 and 2009. However, it has recovered considerably, and in 2014 exports increased by XX% (CIA, 2015). The industrial sector was estimated to contribute a share of XX% toward GDP. This resulted in the creation of new jobs and an increase in the labor force, which in turn led to a decline in poverty. The service and agricultural sectors contributed XX% and XX%, respectively, toward GDP (CIA, 2015).

The energy sector is managed by the Ministry of Industry and Trade (MoIT), which is responsible for implementing some major reforms in the power sector with the aim of creating a competitive market. A state-owned utility, Vietnam Electricity (EVN), is responsible for most of the generation, transmission and distribution of power. Hydropower is used as the primary source of power generation, contributing about XX% of installed capacity. Vietnam does use its domestic coal resources for generation purposes; however, the best quality coal is exported.

Introduction

Vietnam's coal reserves are depleting, and the government is looking to expand the energy mix. There are many opportunities for developing renewable resources. Particular focus has been placed on the development of wind power, since there is considerable natural wind power potential that is yet to be harnessed. As part of the renewable energy policy, the government is planning to focus on solar and geothermal potential as well; however, there are no concrete plans to produce energy from these sources on a large scale in the next couple of decades. Renewable energy sources currently account for XX% of installed power capacity. Vietnam is expected to record substantial growth in the wind energy segment during the forecast period, as the average prices of power generated from wind sources are now lower than the average prices of power generated from gas sources.

2.1 GlobalData Report Guidance

- The executive summary captures the key growth trends in Vietnam's power market.
- Chapter three provides a snapshot of the key parameters that impact Vietnam's power sector, as well as key points about the power market.
- Chapter four provides an analysis of Vietnam's power market.
- Chapter five details the regulatory control of the power market and the inward foreign investment scenario in Vietnam.
- Chapter six provides information on Vietnam's cumulative installed capacity and annual generation trends, by individual generation source.
- Chapter seven describes the power transmission and distribution infrastructure in Vietnam and provides information on interconnectors with neighboring countries. The section also covers power imports and exports and upcoming grid-related projects in Vietnam.

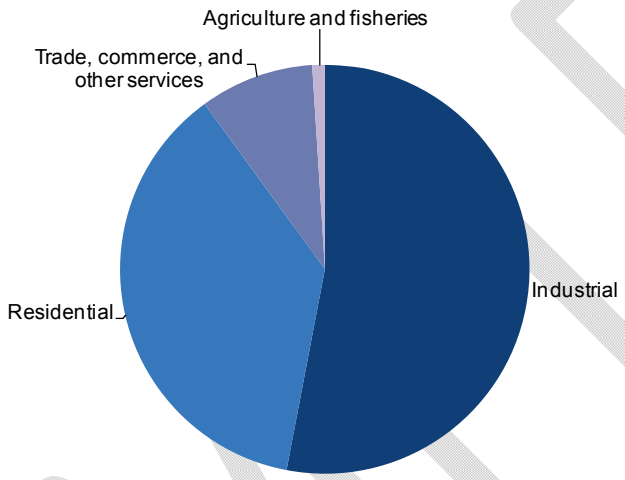
Note: All 2014 market numbers provided in the report are estimates, except where actual data were available.

Market Analysis

4.4.1 Power Consumption by Sector, 2014

The industrial sector accounted for the highest share of total power consumption in 2014, with an estimated share of XX%, followed by the residential sector with XX%. The commercial and agricultural sectors contributed XX% and XX%, respectively, to total power consumption.

Figure 5: Power Market, Vietnam, Power Consumption by Sector (%), 2014



Source: GlobalData

Table 5: Power Market, Vietnam, Power Consumption by Sector (%), 2014

Sector	Share
Industrial	
Residential	
Trade, commerce and other services	
Agriculture and fisheries	

Source: GlobalData

Capacity and Generation Overview

6.2 Vietnam, Power Market, Cumulative Installed Capacity and Annual Power Generation, 2000–2025

Between 2000 and 2014, installed capacity increased at a CAGR of XX% from XX GW to XX GW. Most of the growth was contributed by thermal power, which grew at a CAGR of XX%. It was followed by hydropower, which increased at a CAGR of XX%.

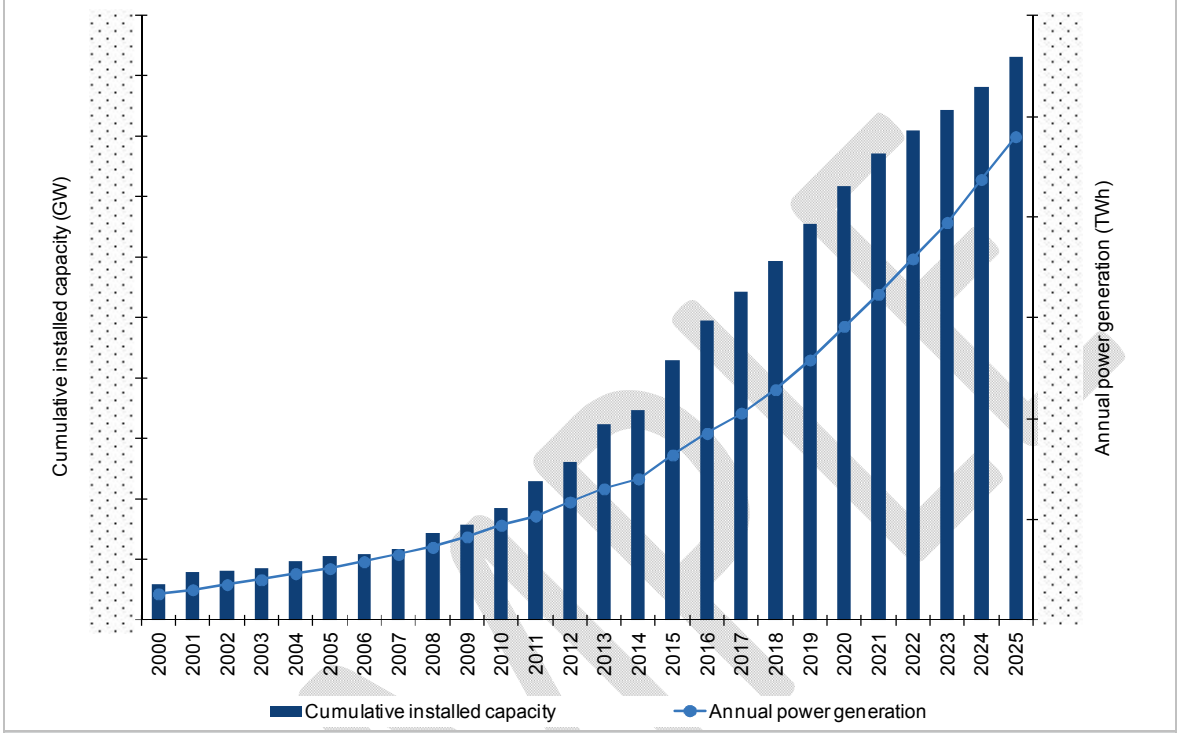
In 2000, hydropower constituted XX%, or XXGW, of installed capacity. Thermal power constituted XX%, or XX GW. Renewable power sources were in a very nascent stage at that time, contributing only XX%, or XX GW.

During the 2015–2025 period, installed capacity is expected to grow at a CAGR of XX% from XX GW to XX GW. Thermal power is expected to grow at a CAGR of XX%, representing XX% of installed capacity in 2025. Hydropower is expected to grow at a CAGR of XX%, accounting for around XX% of installed capacity. Renewable power is expected to grow from 0.4 GW to XX GW. Renewable energy sources are expected to register the highest increase in capacity, increasing at a CAGR of XX%. This is because the government is encouraging the installation of renewable capacity. New wind power and biomass plant installations, combined with tax incentives and benefits, are likely to result in a significant rate of adoption of renewable sources of energy over the forecast period. Furthermore, Vietnam has undertaken a feasibility study of nuclear power, which will further augment cumulative installed capacity. The nuclear power reactors expected to come online after 2020 are expected to add about XX GW of generating capacity.

Power generation grew at a CAGR of XX%, from XX TWh in 2000 to XX TWh in 2014. In 2014, thermal power was estimated to account for XX% of annual generation, while hydropower and renewables were estimated to account for XX% and XX%, respectively. Power generation is expected to grow at a CAGR of XX% from XX TWh to XXTWh between 2015 and 2025. During the same period, renewable power generation is expected to grow at the rate of XX%, followed by thermal power generation at XX%, while hydropower is expected to register a CAGR of XX%.

Capacity and Generation Overview

Figure 7: Power Market, Vietnam, Cumulative Installed Capacity (GW) and Annual Power Generation (TWh), 2000–2025



Source: GlobalData, Power Database [Accessed on June 22, 2015]

Capacity and Generation Overview

Table 7: Power Market, Vietnam, Cumulative Installed Capacity (GW) and Annual Power Generation (TWh), 2000–2025

Year	Cumulative installed capacity	Annual power generation
2000		
2001		
2002		
2003		
2004		
2005		
2006		
2007		
2008		
2009		
2010		
2011		
2012		
2013		
2014		
2015		
2016		
2017		
2018		
2019		
2020		
2021		
2022		
2023		
2024		
2025		

Source: GlobalData, Power Database [Accessed on June 22, 2015]

9 Appendix

9.1 Market Definitions

9.1.1 Power

Power refers to the rate of production, transfer or energy use, usually related to power. It is measured in Watts (W) and often expressed in kilowatts (kW) or Megawatts (MW). It is also known as real power or active power.

9.1.2 Installed Capacity

Installed capacity refers to the generator's nameplate capacity as stated by the manufacturer, or the maximum rated output of a generator under given conditions. It is given in Megawatts (MW) on a nameplate affixed to the generator.

9.1.3 Electricity Generation

Electricity generation refers to the process of generating power from other forms of energy. It also refers to the amount of power produced, expressed in Gigawatt hours (GWh).

9.1.4 Electricity Consumption

Electricity consumption is the sum of power generated, plus imports, minus exports and transmission and distribution losses. It is measured in Gigawatt hours (GWh).

9.1.5 Thermal Power Plant

A thermal power plant is a plant in which turbine generators are driven by burning fossil fuels.

9.1.6 Hydropower Plant

A hydropower plant is a plant in which the turbine generators are driven by falling water.

9.1.7 Nuclear Power

Nuclear power is the energy released from the fission of nuclear fuel in a reactor.

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9.1.8 Renewable Energy Resources

Renewable energy resources are those that provide energy that is naturally replenished but limited in the amount of energy available per unit of time. Biomass, geothermal, solar, small hydro and wind are examples of renewable resources.

9.2 Abbreviations

Table 19: Abbreviations	
ASEAN	Association of South East Asian Nations
CAGR	Compound Annual Growth Rate
CCGT	Combined-Cycle Gas Turbine
Ckm	Circuit kilometer
DAS	Distribution Automation System
ERAV	Electricity Regulatory Authority of Vietnam
EVN	Vietnam Electricity
FDI	Foreign Direct Investment
FiT	Feed-in Tariff
GDP	Gross Domestic Product
GW	Gigawatt
GWh	Gigawatt hour
IPP	Independent Power Producer
kV	Kilovolt
kWh	kilowatt hour
MoIT	Ministry of Industry and Trade
MW	Megawatt
NPT	National Power Transmission
PVN	Vietnam Oil and Gas Group or PetroVietnam
TWh	Terawatt hour
VINACOMIN	Vietnam National Coal and Mineral Industries Group
VVER	Vodo-Vodyanoi Energetichesky Reaktor or Water-Water Energy Reactor
Source: GlobalData	

Appendix

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Appendix

9.4 GlobalData's Methodology

GlobalData's dedicated research and analysis teams consist of experienced professionals with advanced statistical expertise and marketing, market research and consulting backgrounds in the energy industry.

GlobalData adheres to the codes of practice of the Market Research Society (www.mrs.org.uk) and Strategic and Competitive Intelligence Professionals (www.scip.org).

All of GlobalData's databases are continuously updated and revised. The following methodology has been followed for the collection and analysis of data presented in this report.

9.4.1 Coverage

This report covers Vietnam's power market, examining the market structure and providing historical generation, capacity and consumption forecasts until 2025. It also looks at the market's regulatory structure, import and export trends, competitive landscape and leading active and upcoming power projects.

9.4.2 Secondary Research and Analysis

The capacity, generation and consumption data is collected and validated using a number of secondary resources including but not limited to:

- Government agencies, ministry websites, industry associations, the World Bank, IMF, and statistical databases
- Company websites, annual reports, financial reports, analyst reports and investor presentations
- Industry trade journals, market reports and other literature
- GlobalData's proprietary databases such as the Capacity and Generation Database, Power Plant Database and Transmission and Distribution Database

Further to this, the following secondary information is collected and analyzed to project Vietnam's power market scenario to 2025, analyzing factors such as:

- Macro-economic scenario
- Government regulations, policies and targets

Appendix

- Government and private sector investment
- Contract and deal announcements
- Utility expansion plans
- The sector's historical track record
- Other qualitative insights built through secondary research and analysis of company websites, annual reports, investor presentations, industry and trade journals, and data from industry associations

9.4.3 Primary Research and Analysis

Secondary research is further complemented through primary interviews with industry participants to verify the market numbers obtained through secondary research and obtain first-hand information on industry trends.

The participants are drawn from a diverse set of backgrounds, including power producers, equipment manufacturers, industry associations, government bodies, utilities, distributors, and academia. The participants include but are not limited to C-level executives, industry consultants, academic experts, business development and sales managers, purchasing managers, plant managers, government officials and industry spokespersons.

Appendix

9.5 Disclaimer