Asia-Pacific
Economic Cooperation

2025/CTI/WKSP2/009

Investments for Renewable Energy in Viet Nam: State and Trends

Submitted by: Viet Nam

APEC 2025
KOREA

Capacity Building Workshop on Trade and Environment
Ha Noi, Viet Nam
17-18 April 2025

BỘ CÔNG THƯƠNG VIỆT NAM

MINISTRY OF INDUSTRY AND TRADE OF THE SOCIALIST REPUBLIC OF VIETNAM

Asia-Pacific Economic Cooperation

APEC Capacity Building Workshop on Trade and Environment
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Investments for renewable energy in Viet Nam: State and Trends

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Viet Nam

Ha Noi, 17th April 2025

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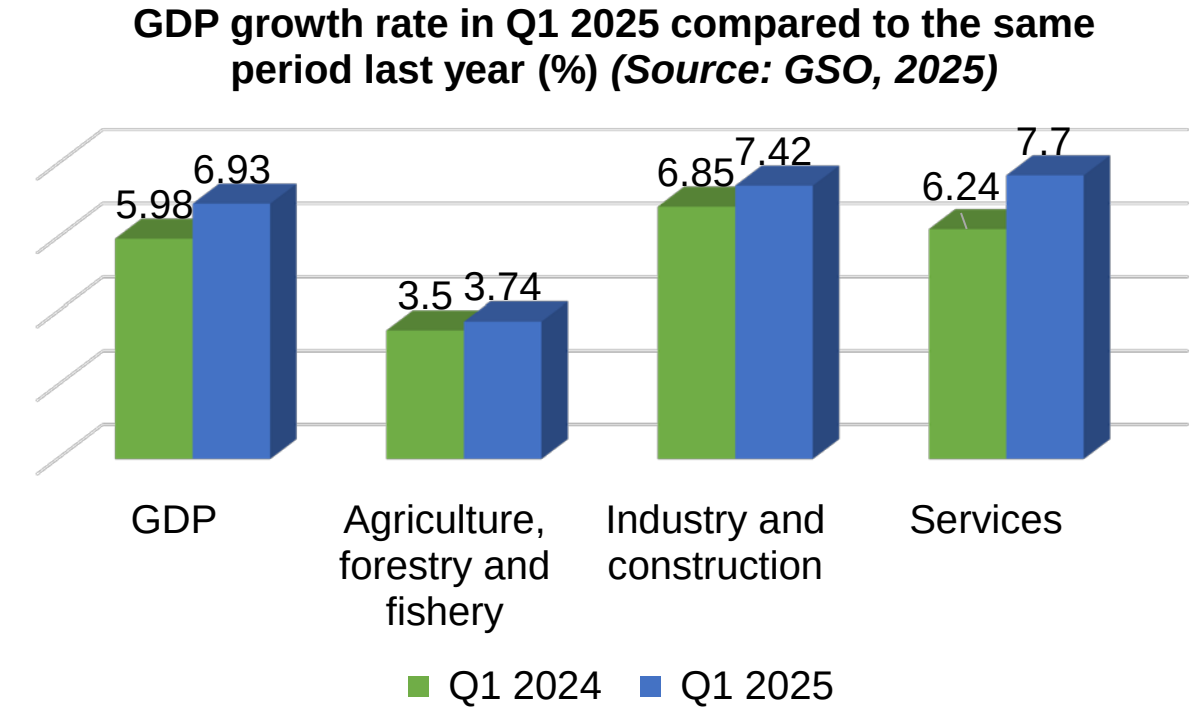
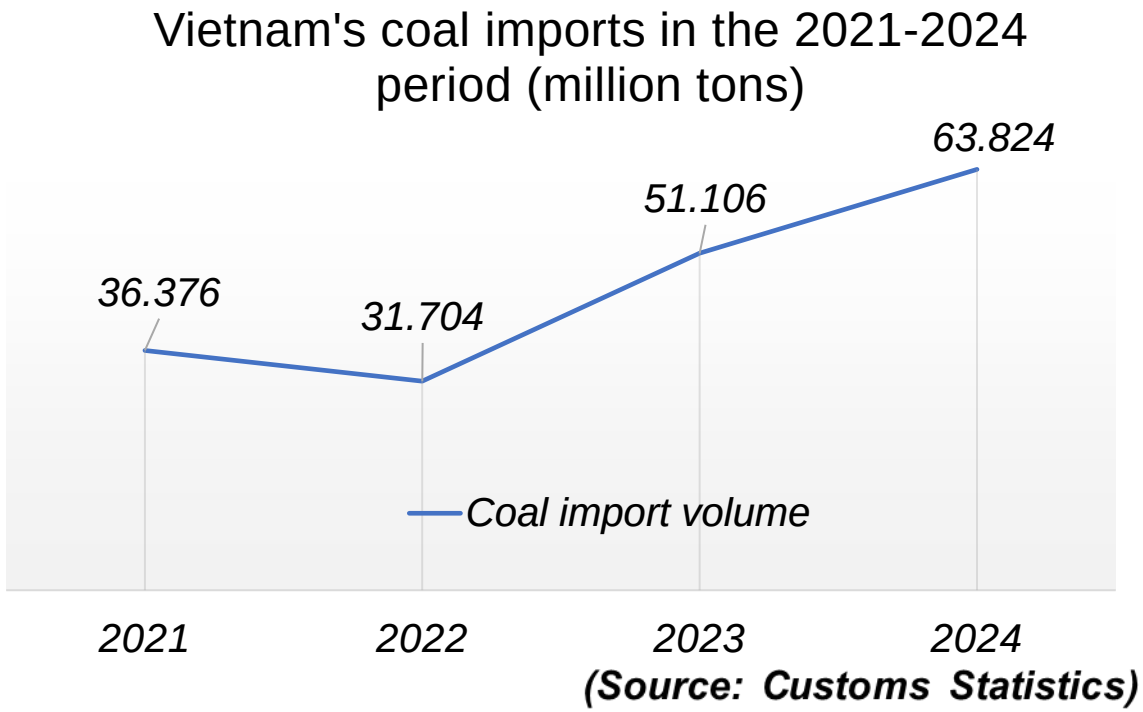
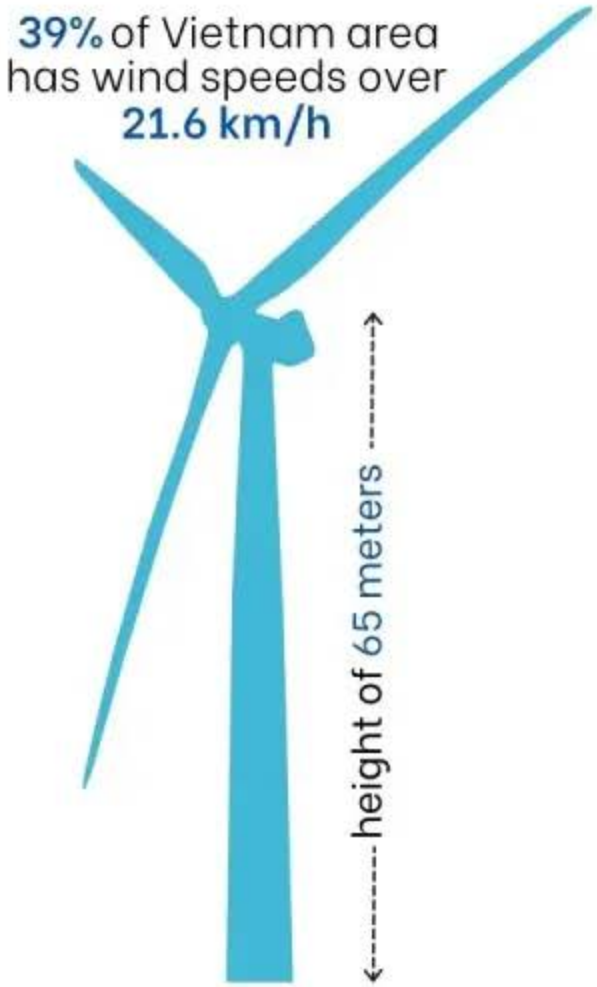


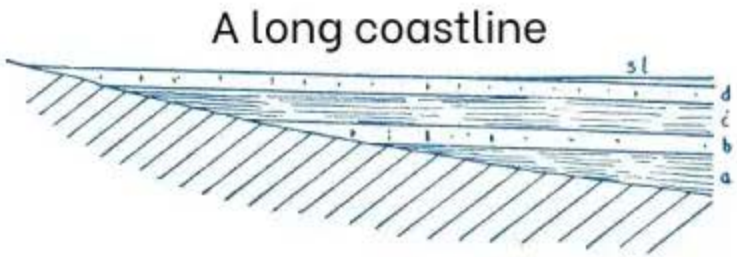


Vietnam's GDP grew strongly, mainly thanks to industry and services -> **require energy to meet the growing demand for electricity** and **renewable energies are prioritized, due to:**

- Pollution from coal-fired power plants
- Increasing dependence on coal and gas imports

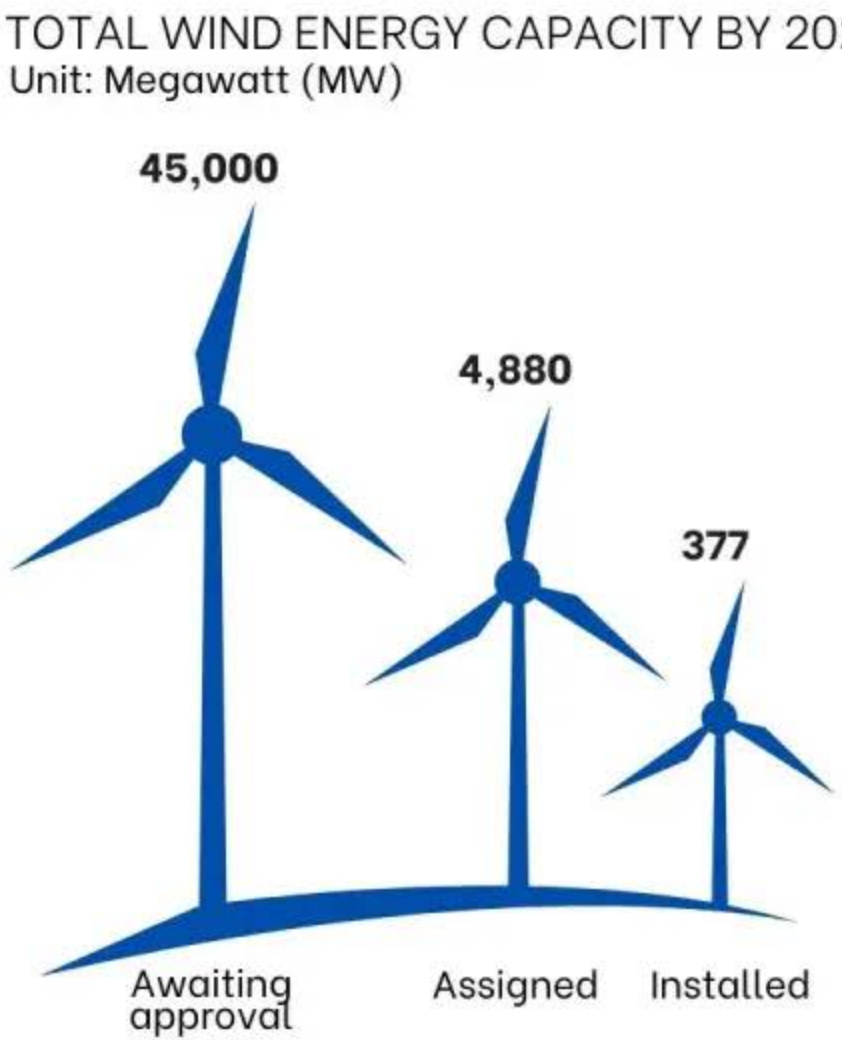


The Economy's long and narrow geographic shape consisting of:



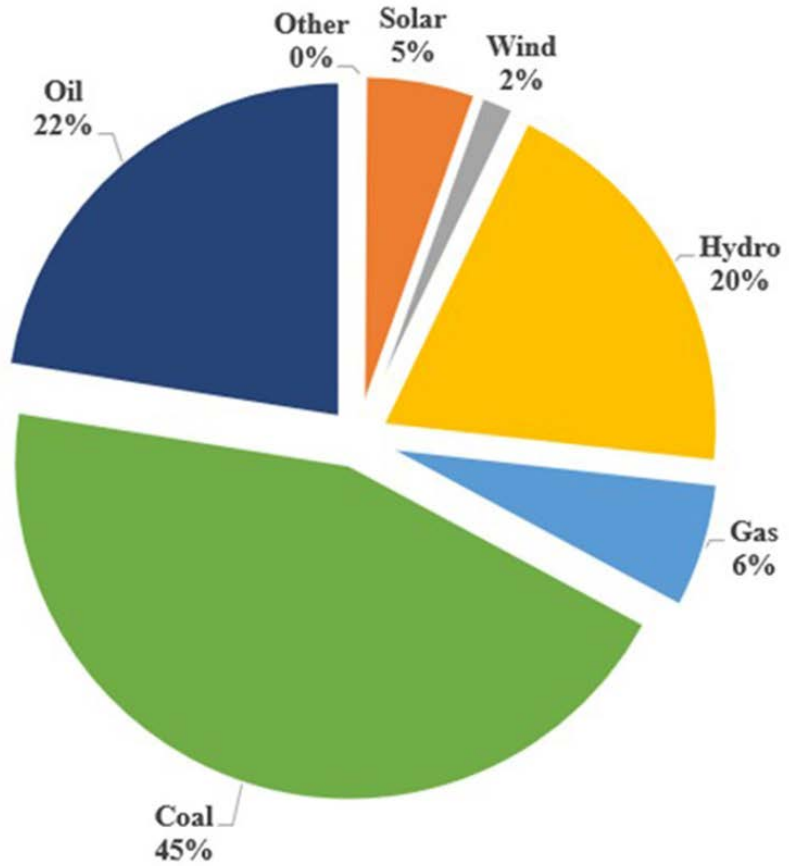
8.6%

of **Economy's** land area suitable for large wind farms



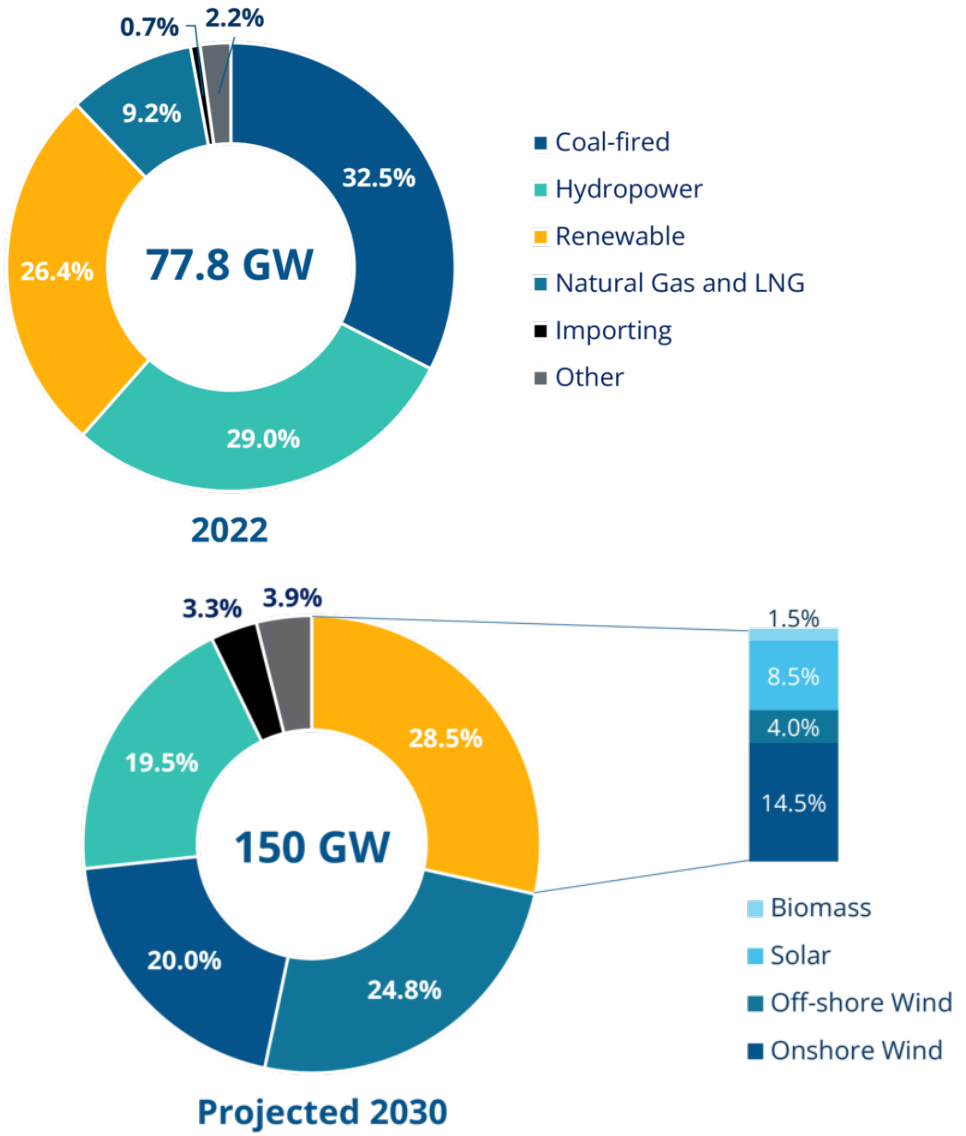
Source: Sources of Asia, 2024

Power consumption in Vietnam by sources, 2022



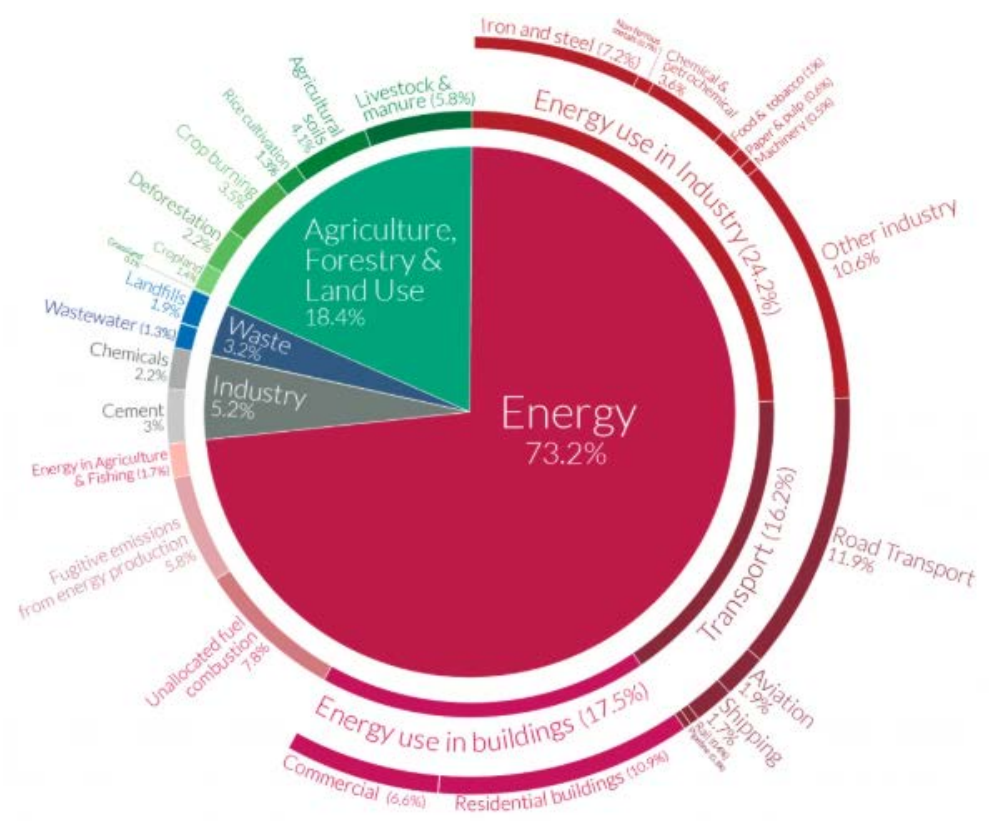
Source: Statistical review of world energy from Energy Institute, 2023

Installed Capacity for Electricity generation in Vietnam by source, 2022 vs. 2030



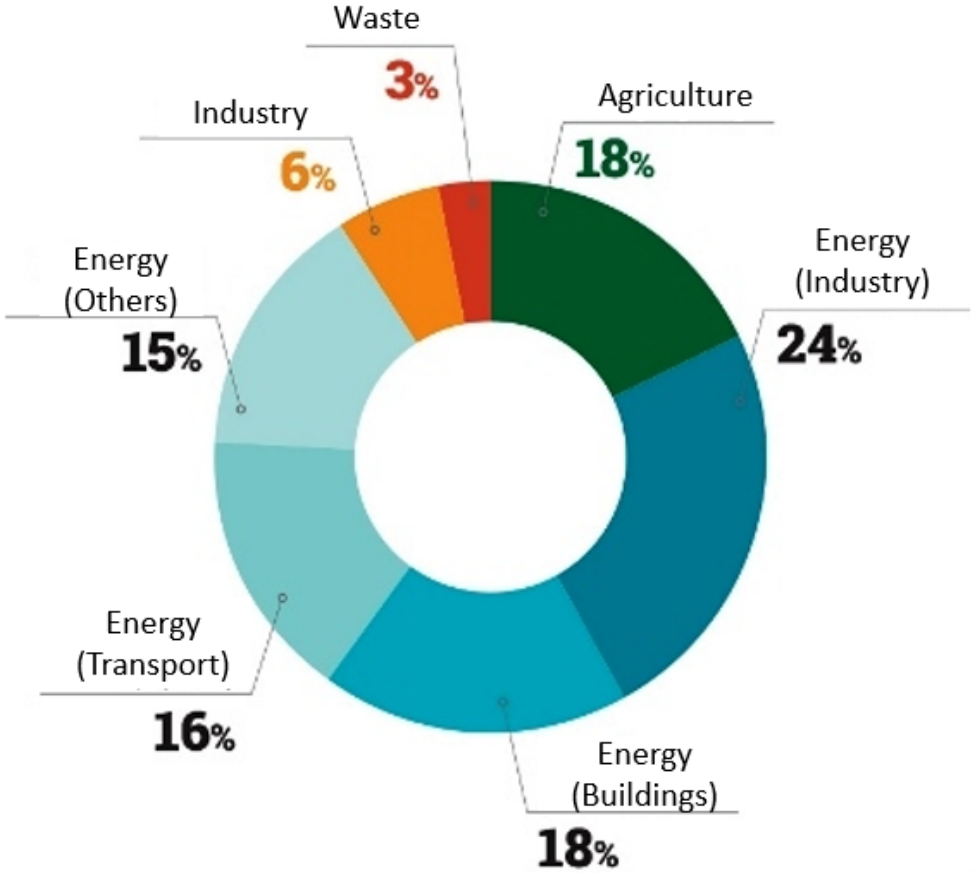
Source: Tractus Global, 2023

Energy is the largest source of greenhouse gas emissions in Viet Nam



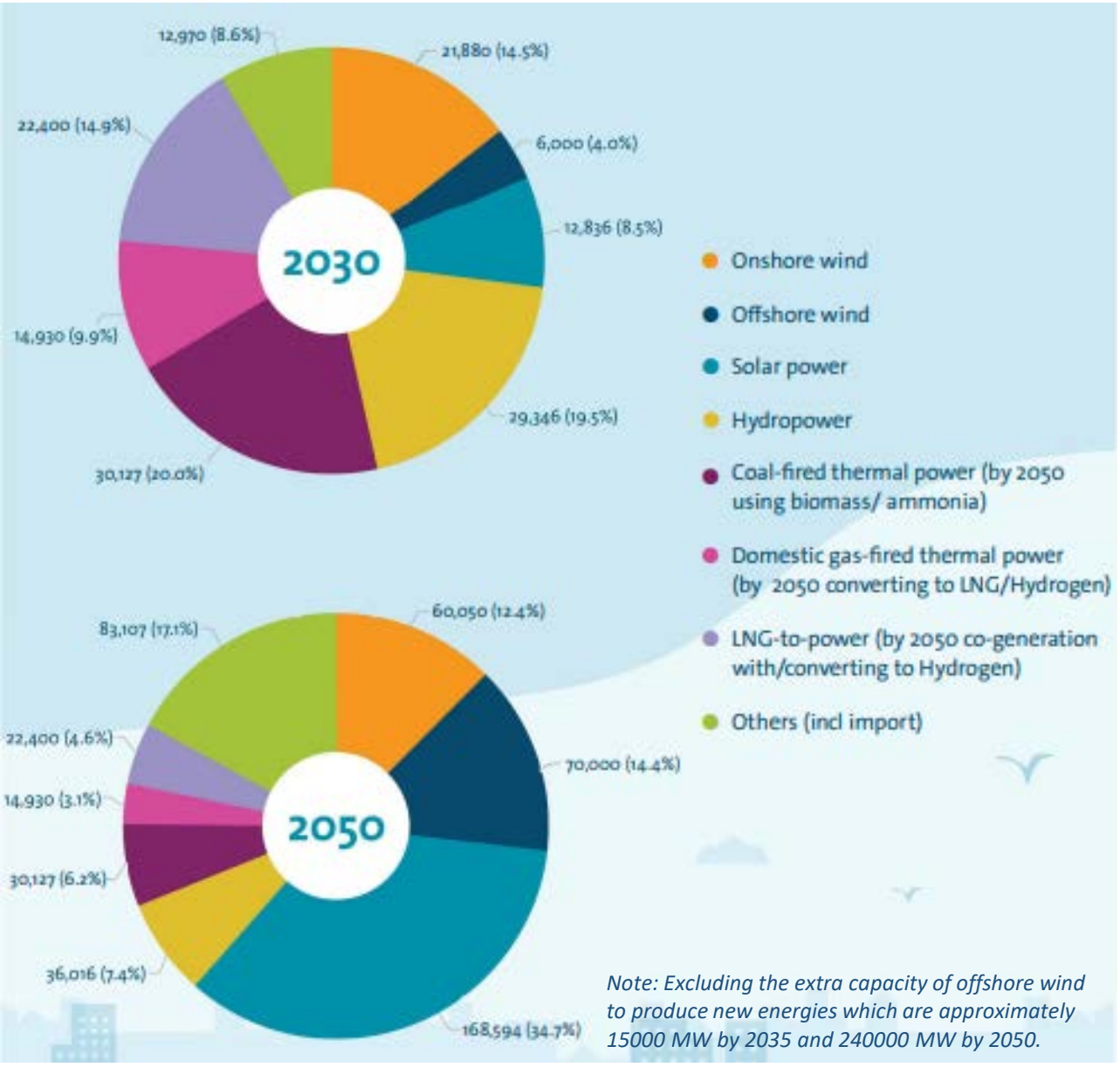
Global greenhouse gas emissions by sector in 2016

Source: World Resources Institute (2020)



Viet Nam's greenhouse gas emissions by sector

Viet Nam has set out the energy- particularly electricity development targets in the Power Development Plan VIII



Note: Excluding the extra capacity of offshore wind to produce new energies which are approximately 15000 MW by 2035 and 240000 MW by 2050.

Specific Targets

1. Strongly develop renewable energy sources for electricity production, reaching a rate of about **30.9 - 39.2% by 2030**; reaching **67.5 - 71.5% by 2050.**

- + Control greenhouse gas emissions from electricity production to about **204 - 254 million tons in 2030 and about 27 - 31 million tons in 2050**. Aim to reach a peak emission level of **no more than 170 million tons in 2030**, provided that commitments under JETP are fully and substantially implemented by international partners.
- + Building a smart grid system capable of integrating and safely and effectively operating large-scale renewable energy sources.

2. Strive to have **50% of office buildings and 50% of houses using self-produced and self-consumed rooftop solar power by 2030** (serving on-site consumption, not selling electricity to the domestic power system).

Installed Capacity for Electricity generation in Vietnam by source, 2030 and 2050

Source: Vietnam Power Development Plan VIII & EVN Vietnam

2. Policy framework for renewable energy development in Viet Nam

2.1. General orientation policy

- **Resolution No. 55-NQ/TW of the Politburo on the orientation of Vietnam's Domestic Energy Development Strategy to 2030 with a vision to 2045** clearly stated the guiding viewpoint: *"... prioritize the thorough and effective exploitation and use of renewable energy sources, new energy, clean energy...",* and emphasized: "*Economical and efficient use of energy and environmental protection must be considered an important domestic policy and responsibility of the whole society*"
- **Vietnam's commitment at COP26** and agreements to achieve Net-zero emission by 2050
- **Political Statement Establishes Just Energy Transition Partnership (JETP)**
- **Law on Economical and Efficient Use of Energy (2010)** also mentioned in Article 5: "*Financial support, energy prices and other necessary preferential policies to promote economical and efficient use of energy*" (Clause 2); "*Increase investment, apply various forms of resource mobilization to promote scientific research, development and application of advanced technologies using energy economically and efficiently; develop renewable energy in accordance with the potential and conditions of Vietnam...*" (Clause 3)
- **Domestic strategy on green growth for the period 2011-2020 and vision to 2050** determine the need to reduce the intensity of greenhouse gas emissions, and at the same time, promote the effective exploitation of renewable energy sources in order to gradually increase the proportion of clean energy sources in the economy's energy production and consumption
- **Power Development Plan VIII** has set a target to achieve the rate of renewable energy for power generation from 30.9 to 39.2% by 2030 and increase to 67.5 - 71.5% by 2050

2.1. General orientation policy (cont.)

- **Law on Economical and Efficient Use of Energy 2010** stipulated *"encourage the production and use of on-site energy sources by hydropower, wind power, sunlight, biogas, agricultural by-products and other renewable energy sources"* (Article 24, Clause 2)

- **Law on Environmental Protection 2020** stipulating that business investment activities in environmental protection are eligible for incentives and supports, including enterprises producing and supplying technologies, equipment, products and services to serve environmental protection requirements including "*energy-saving technology...*"; *public transportation services using electric energy and renewable fuels; clean energy production, renewable energy*" (Article 141, Clause 2, Point b)

- **Law on Investment 2020** also regulating *the production of new materials, new energy, clean energy, renewable energy; production of products with added value of 30% or more, energy-saving products in sectors and trades eligible for investment incentives* (Article 16, Clause 1, Point b).

- **Electricity Law (2024)** also clearly stated that *"there are preferential policies for investment projects to develop power plants using new energy sources, renewable*

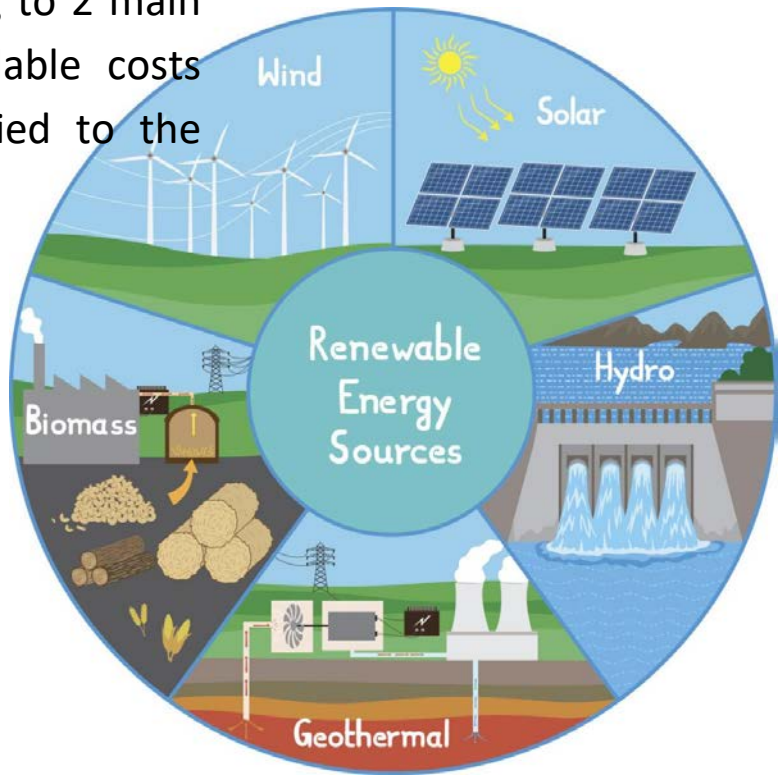
2.2. Policies to encourage investment in renewable energy

- **Law amending and supplementing a number of articles of the Law on Corporate Income Tax (2013)** stipulating **a preferential tax rate of 10% for a period of 15 years** (Clause 1, Article 15) **and tax exemption for 4 years, reducing 50% of the payable tax amount for the next 9 years** (Clause 1, Article 16) applicable to new investment projects, including renewable energy production projects.

- **Decree 58/2025/ND-CP detailing a number of articles of the Electricity Law on the development of renewable electricity and new energy power** stipulating that "**the minimum long-term contractual electricity output is 70% of the loan principal repayment term but not exceeding 12 years**" for new energy power projects, of which, this rate is up to 80% for offshore wind power projects

2.2. Policies to encourage investment in renewable energy (cont.)

- **Wind Energy:** *Decision No. 39/2018/QD-TTg on amending and supplementing a number of articles of Decision No. 37/2011/QD-TTg on the mechanism to support the development of wind power projects in Vietnam* stipulated that the buyer is responsible for purchasing the entire electricity output from wind power projects with a power purchase price of up to **8.5 US cent/kWh** for onshore projects; officially apply the price of **9.8 US cent/kWh** for offshore projects
- **Biomass Energy**: *Decision No. 08/2020/QD-TTg, dated March 5, 2020, of the Prime Minister, on "Amending and supplementing a number of articles of the Prime Minister's Decision No. 24/2014/QD-TTg dated March 24, 2014 on the mechanism to support the development of biomass power projects in Vietnam"* stipulated that the electricity buyer (EVN Group) is obliged to buy all electricity under a non-negotiation contract with the electricity selling price according to 2 main types of biomass: co-generation of heat - electricity (**5.8UScent/kWh**) and avoidable costs according to the price of imported coal-fired power (about **7.5UScent/kWh** applied to the southern region)
- **Waste-to-energy**: *Decision No. 31/2014/QD-TTg, dated May 5, 2014, of the Prime Minister, "On the mechanism to support the development of power generation projects using solid waste in Vietnam"* stipulated the priority and support for waste-to-energy according to two types of technology: landfill, methane recovery and incineration to ensure environmental sanitation with prices of **7.28UScent/kWh** and **10.05UScent/kWh**, respectively.
- **Solar Power**: *Decision No. 11/2017/QD-TTg, dated 11-4-2017, of the Prime Minister, "On the mechanism to encourage the development of solar power projects in Vietnam"* stipulated a fairly high price support level (**9.35UScent/kWh**);



3. State of trade and investment for renewable energy in Viet Nam

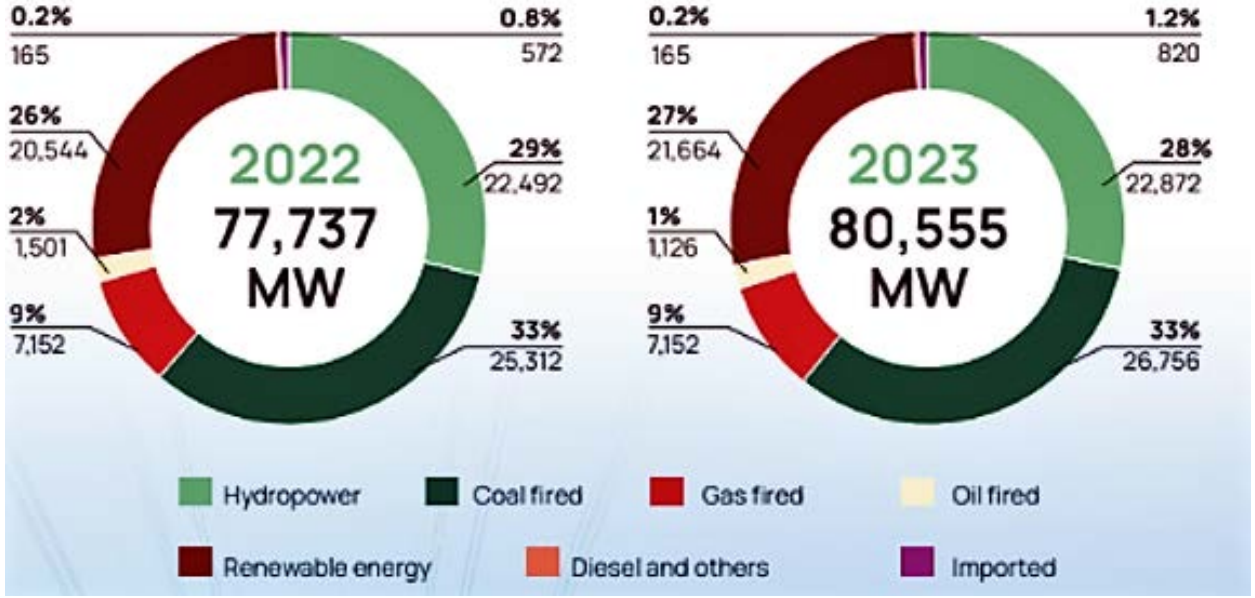
Installed capacity by fuel types (Source: EVN, 2024)

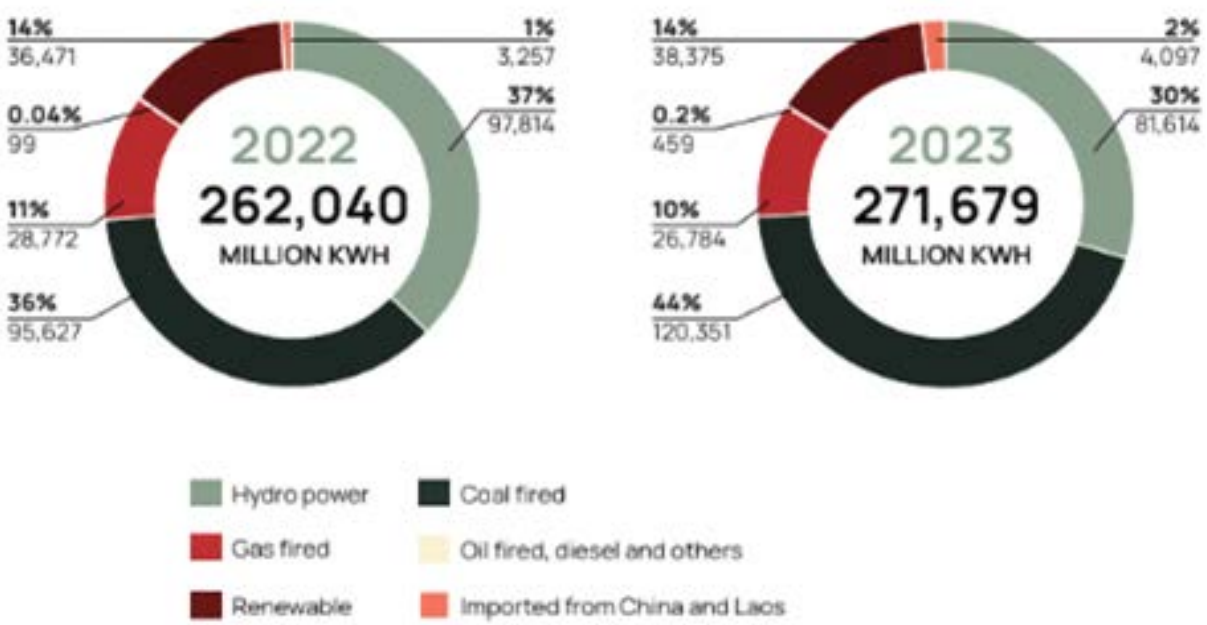
Installed capacity by fuel types (MW)	2022	2023
	77,737	**80,555**
Hydropower	22,492	22,872
Coal fired	25,312	26,756
Gas fired	7,152	7,152
Oil fired	1,501	1,126
Renewable energy	20,544	21,664
Diesel and others	165	165
Imported	572	820

Power generation output by fuel types (Source: EVN, 2024)

	2022	2023	Comparison 2023/2022
Power production and purchase	**262,040**	**271,679**	**104%**
Hydropower	97,814	81,614	83%
Coal fired	95,627	120,351	126%
Gas fired	28,772	26,784	93%
Oil fired, diesel and others	99	459	464%
Renewable	36,471	38,375	105%
Imported from China and Laos	3,257	4,097	126%

Unit: million kWh

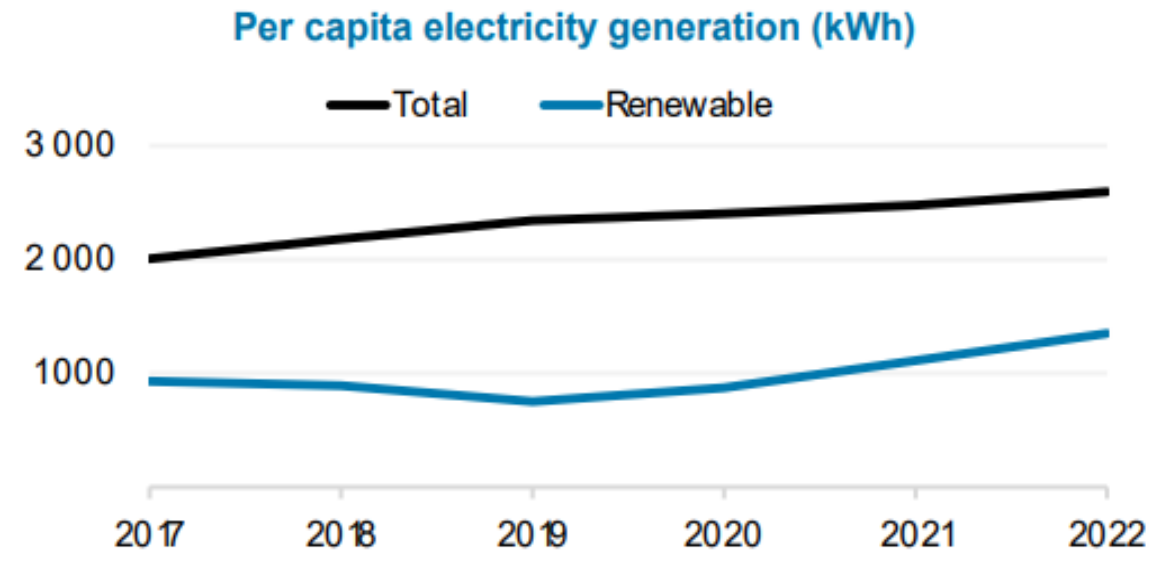




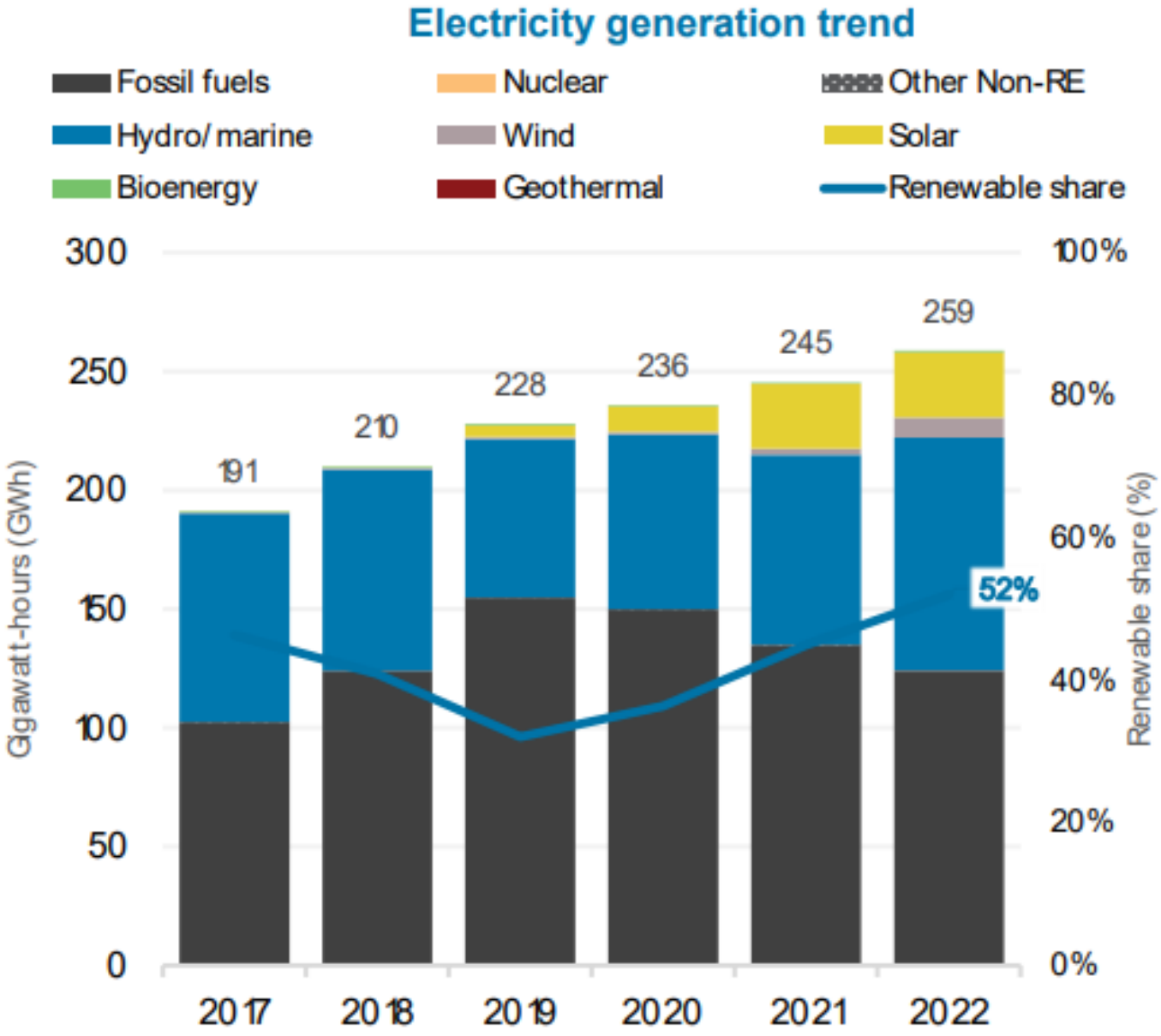
Power generation trends

Electricity generation in 2022

Generation in 2022	GWh	%
Non-renewable	124.183	48
Renewable	134.633	52
- Hydro and marine	97.927	38
- Solar	27.665	11
- Wind	8.445	3
- Bioenergy	595	0
- Geothermal	0	0
Total	258.816	100



Source: IRENA (2023)



VIETNAM: RENEWABLE ENERGY INVESTMENT INCENTIVES

Feed-in Tariff (FiT)	Corporate Income Tax (CIT)	Import Tax	Land-Related Incentives	Value-Added Tax (VAT) Refund
• Competitive fixed price per kWh for renewable energy. • Guaranteed purchase by state-owned Electricity of Vietnam (EVN).	• 10% CIT rate for renewable energy sectors for 15 years. • New projects: 4-year tax exemption, followed by 50% reduction for 9 years.	• Exemption for 5 years on fixed assets, materials, and components (approved projects).	• Land lease and tax exemptions for up to 3 years post-lease (challenging zones). • Post-construction exemptions: 11-15 years (depending on project details).	• Pre-operational project development expenses (with proper documentation).

Source: https://www.sourceofasia.com/vietnam-from-fossil-fuels-to-green-fields/

3.1.Domestic investment

Key investors:

- **Trung Nam Group**: Trung Nam Thuan Nam solar power project with a total investment of 12,000 billion VND and Ea Nam wind power project, with a total investment of 16,500 billion VND
- **Bamboo Capital (BCG Energy):** Rooftop solar project chain (more than 500 million USD) and wind (1.3 billion USD)
- **Xuan Thien Group:** Investment in wind power (Lac Hoa 100 MW, Soc Trang) – 500 million USD.
- **T&T Group**: Cooperation with the EU to develop offshore wind power (expected 1,000 MW) – 2 billion USD.
- **Vietnam Oil and Gas Group (PVN):** Pilot offshore wind power in Bac Lieu and green hydrogen.

Phu My Solar Power (Bamboo Capital)

Lac Hoa Wind Power (Xuan Thien Group)

3.2. Foreign Direct Investment (FDI)

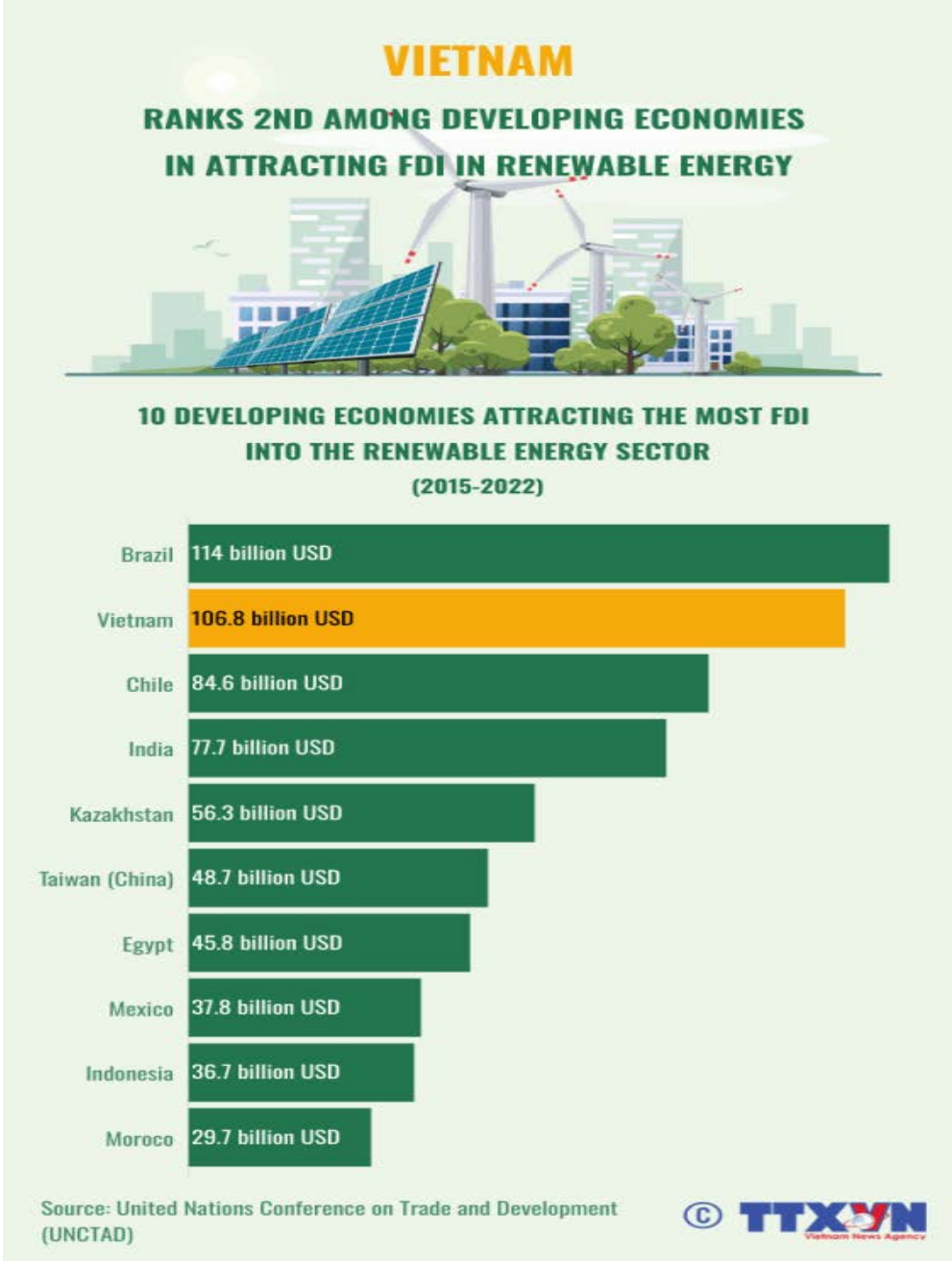
Scale: about **106.8 billion USD (2015-2022)**, ranking in the **top 3 in Southeast Asia.**

Investing economies:

- **Denmark**: offshore wind power, 3.5 GW La Gan project.
- **South Korea**: SK Group, Hanwha Energy – investing in solar & storage batteries
- **Japan**: Shizen Energy, Jinko Solar
- **Singapore:** Blue Circle, Sembcorp
- **China:** GCL Solar, Trina Solar

Typical projects:

- **La Gan offshore wind power** (3.5 GW, Copenhagen Infrastructure Partners - Denmark): $10.5 billion.
  Hoa Hoi Renewable Energy Complex (Binh Thuan, in cooperation with Korea): 1.1 billion USD (wind + solar).



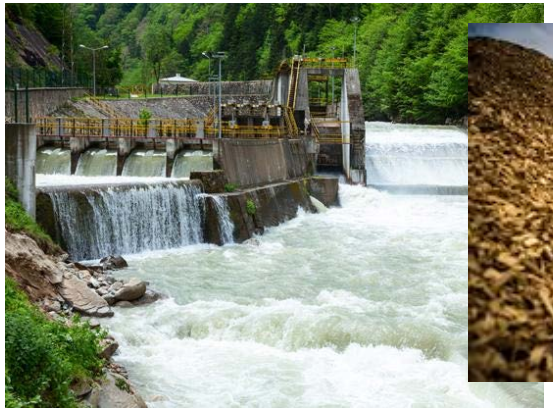
Overview of investment for renewable energy in Vietnam in recent years (2014-2023)

Economy	Type of renewable energy	Enterprises
Japan	Solar and wind power	Corporations such as: Toshiba, Sumitomo,...
South Korea	Solar and wind power	Corporations such as: Hanwha Energy, Samsung C&T, and Doosan Heavy Industries
China	Solar and wind power	Companies such as:Trina Solar, Jinko Solar, JA Solar and PowerChina
Thailand	Solar Power	Companies such as: Banpu and B.Grimm
Singapore	Wind power	Companies such as: Sembcorp and Blue Circle
EU	Offshore wind power, wind turbines supply, waste-to-energy	Danmark (Copenhagen Infrastructure Partners - CIP) Germany (Enercon) France (EDF, TotalEnergies)
USA	Wind turbines supply, solar power and LNG combined with renewable energy	Companies such as: General Electric (GE), AES Corporation

Some investment agencies for renewable energy in Vietnam (2014-2023)

Organisation	Investment activities
World Bank (WB) và Asian Development Bank (ADB)	Preferential loan support for renewable energy projects
U.S. Agency for International Development (USAID)	Financing clean energy projects
Green Climate Fund (GCF)	Financing emission reductions through renewable energy

Focus on **investing heavily in solar and wind power, while biomass power, small hydropower and waste-to-energy power develop slowly** due to limitations in price mechanisms, technology and raw material sources.

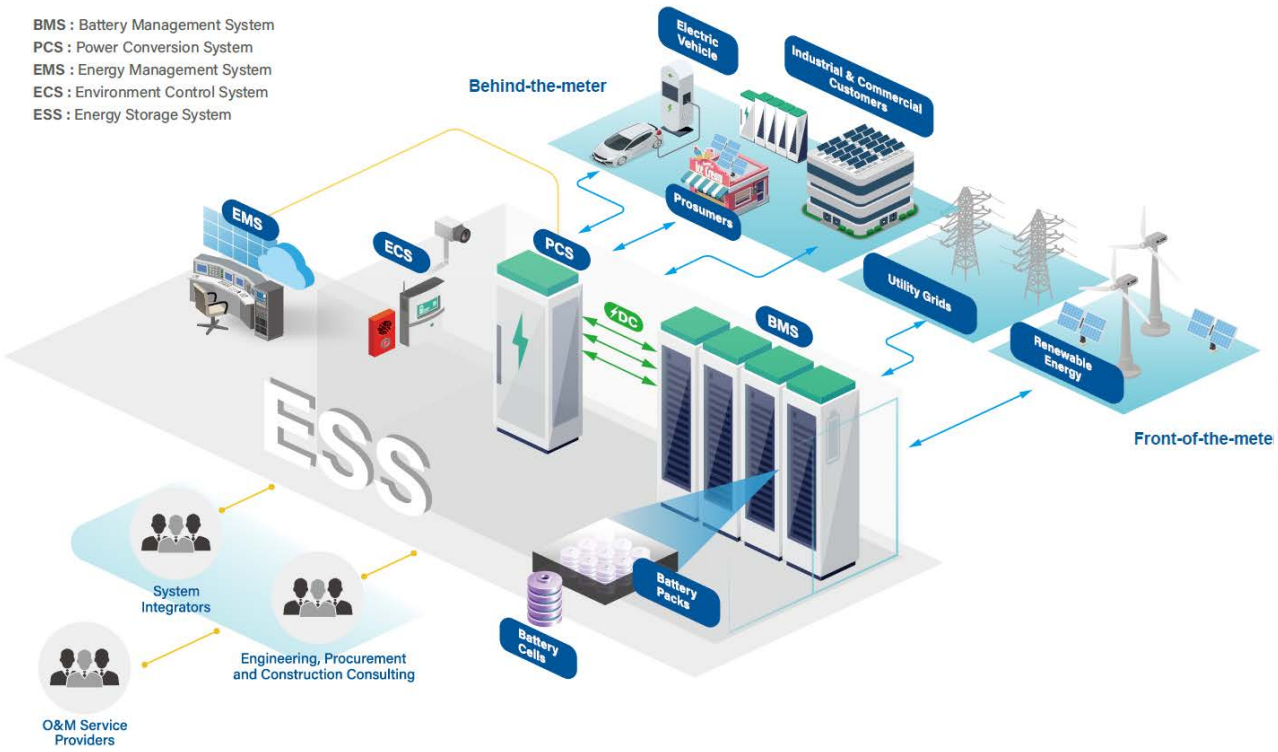


4. Trends/Perspectives for trade and investment in renewable energy

4.1. Global technology trends:

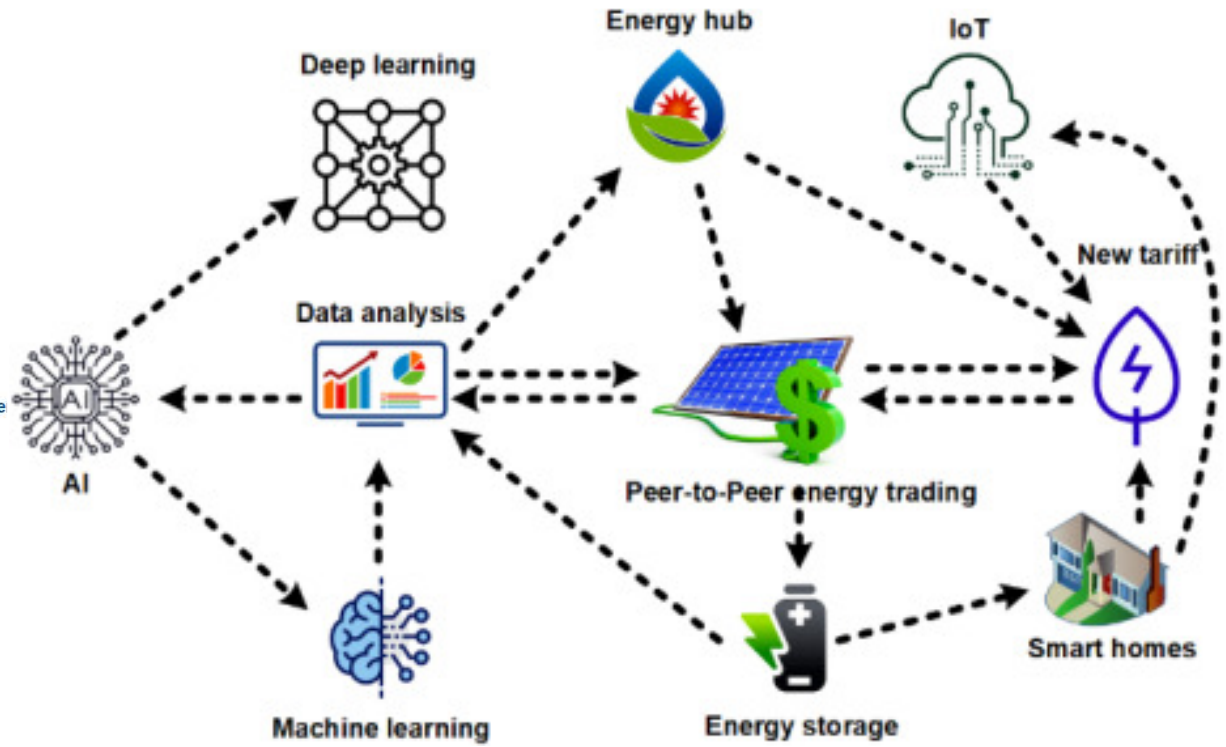
- Development of new and more efficient renewable energy technologies (e.g., new generation solar cells, large-scale offshore wind power, green hydrogen, ocean wave energy).
- The role of energy storage (batteries, hydropower) in system stability.
- The application of artificial intelligence (AI) and the Internet of Things (IoT) in the management and operation of renewable energy systems.

Battery Energy Storage System Eco-system



Source: Jack Pollard (2024)

Flexible energy market structure



Source: Ahmad et al. (2022)

4.2. Global market and investment trends:

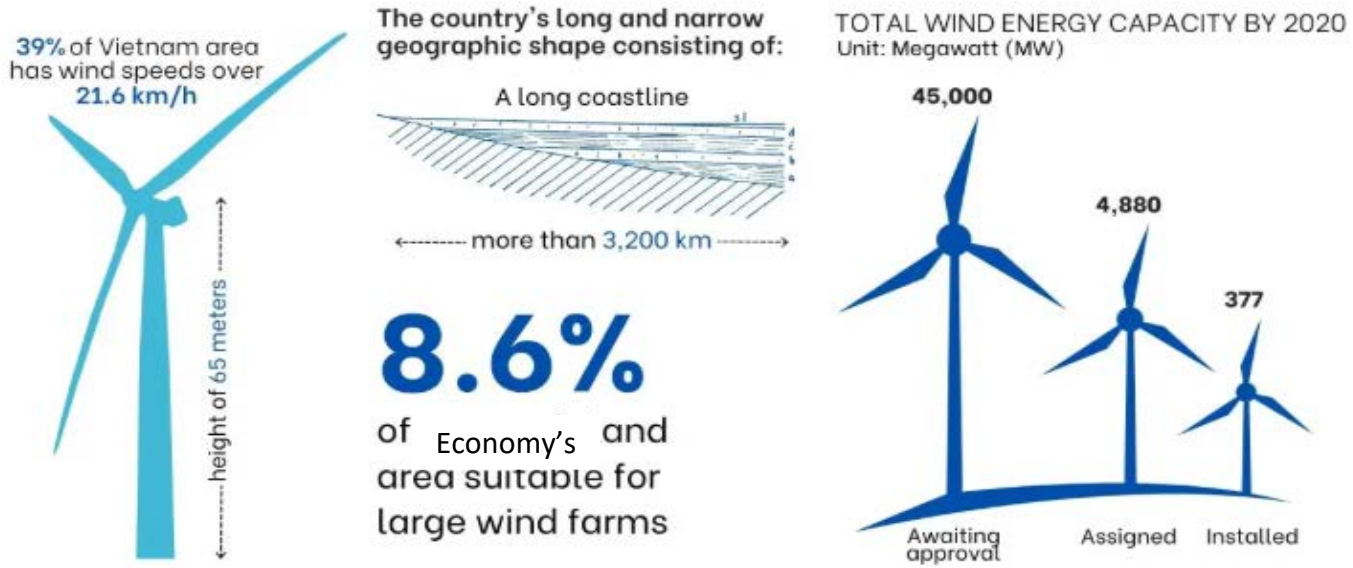
- An increase in **commitment to net-zero emissions** targets worldwide.
- **The shift of investment capital flows to green** and sustainable projects (ESG investing), ESG investment dominates (up 60% of green funds in 2023 – according to Bloomberg).
- **The development of green bonds** (blended finance).
- Opportunities **for international cooperation in renewable energy developmen**t (e.g., EU-ASEAN JETP)

The Ministry of Foreign Affairs of Viet Nam, in partnership with the UNDP hosts an international workshop about Just Energy Transition

Source: tainguyenmoitruong.gov.vn

4.3. Prospective for Vietnam:

- The potential for strong development of **offshore wind power**.
- Opportunity to participate in the **global supply chain of renewable energy industry**
- The development of **new industries related to renewable energy** (e.g. equipment manufacturing, technical services).
- Vietnam's role in **Southeast Asia's energy transition**.

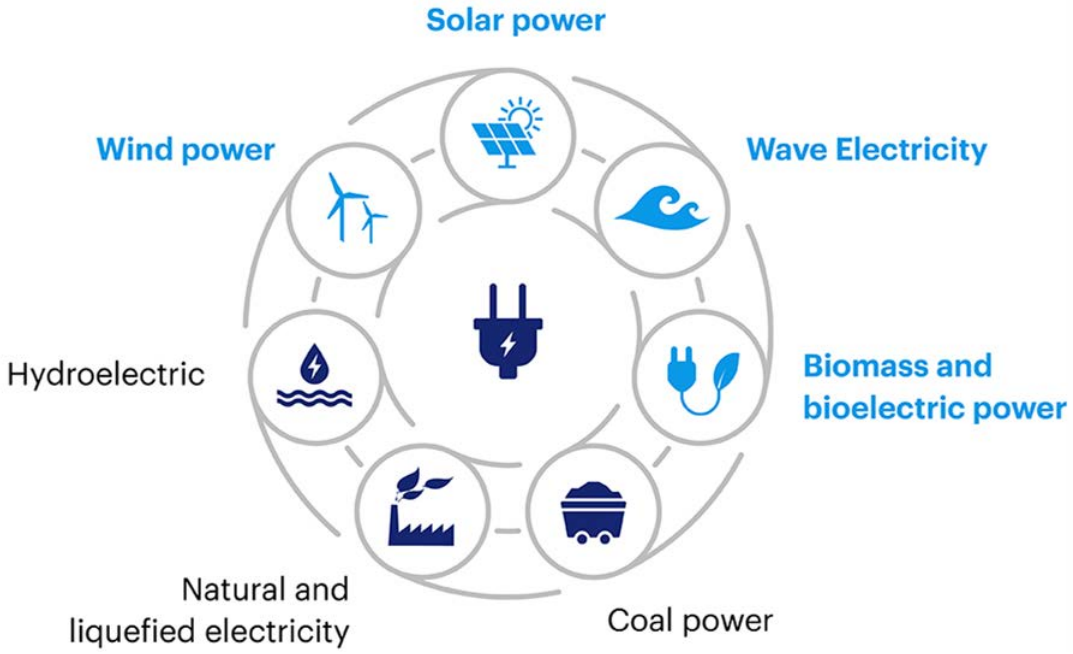


Source: World Economic Forum

5. Challenges and opportunities for investment in renewable energy in VN

5.1. Challenges in Viet Nam

- Uncertainty over **current policy and investment frameworks**, including the energy spatial planning
- Lack of **transparent legal and financial frameworks** that can bring incentives to investors **due to the new area**
- Lack of comprehensive database system on renewable energy sources **that can easy to access and evaluate the potential**
- Human resources, particularly the high skill workforce for off-shore and high tech installation facility;
- Transportation facilities (eg. Roads, ports…) that support the delivery of large equipment on time with suitable cost...and lack of supporting industries for RE development



5. Challenges and opportunities for investment in renewable energy in VN

5.2. Opportunities

- High **demand for energy**, particularly **green and clean energy** in future Net zero commitment
- **Green transition** has been a priority/trend for future development/growth of Viet Nam competition
- **Policy and legal framework for investment** generally and for RE specically is being **more comprehensive and more transparent.**
- Government of Vietnam invests more in **human resources and supporting industries** for renewable energy
- **Innovation and technologies available** for RE is less expensive and cost for **RE production is getting lower**.
- **Capital resources** domestically and internationally is available for investing—in RE, and **trade barriers are being removed/recognized.**

Thank for your attention!

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