



**MINISTRY OF INDUSTRY AND TRADE
ELECTRICITY AND RENEWABLE ENERGY AUTHORITY**

Current development status of renewable energy, policy mechanisms, development orientations and investment opportunities in Viet Nam



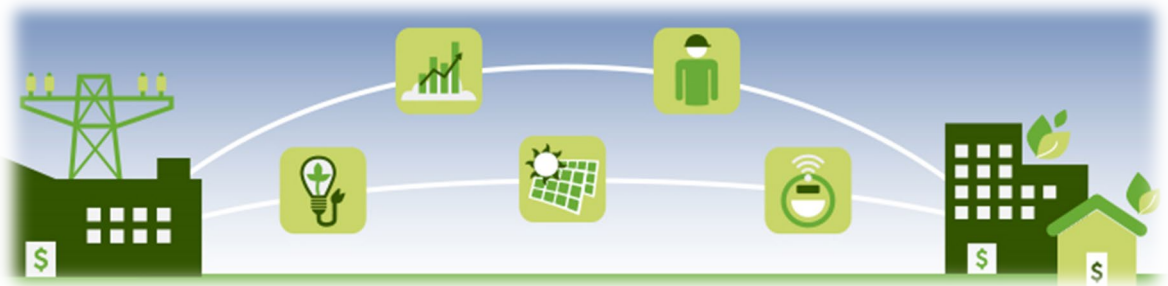
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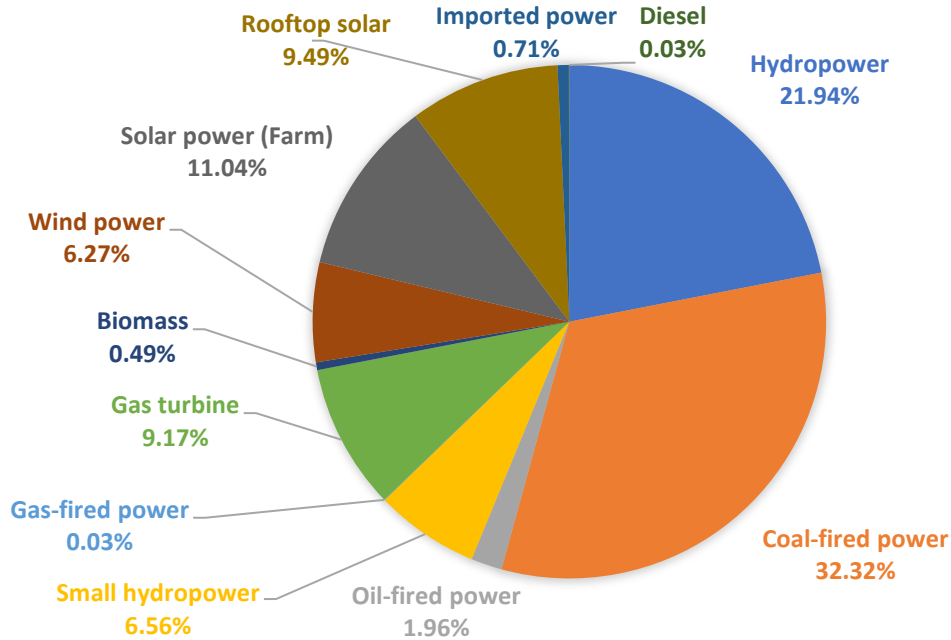
Current status of renewable energy in Viet Nam



Installed capacity by power sources in 2023

Types of sources	Installed capacity (MW)	Share (%)
Hydropower	22,872	28.40%
Coal-fired power	26,757	33.22%
Oil-fired power	1,126	1.40%
Gas turbine	7,152	8.88%
Renewable Energy	21,664	26.89%
Biomass and waste energy	378	9.49%
Diesel and other	165	0.47%
Imported power	820	1.02%
Total	80,555	100.00%

Installed capacity by power sources



Highlights for Coal-fired Power Plants

- Only continue to implement projects already included in the revised PDP7 and currently under construction until 2030. Convert fuel to biomass/ammonia with power plants that have been operating for 20 years. Stop operating power plants that are over 40 years old.
- The 2050: no use coal for electricity generation and shift completely to biomass/ammonia.

02



Development policies for renewable energy in Viet Nam

Development policies for RE in Viet Nam

Renewable energy (RE) development is a major policy of the Party and the State which has been concretized in Resolution No. 55 of the Politburo and the Prime Minister's Decisions approving the RE Development Strategy and incentive mechanisms to encourage the development of RE projects.

In the RE development target in Vietnam's Renewable Energy Development Strategy for the period to 2030, taking into account vision to 2050, which was approved by the Prime Minister in Decision No. 2068/QĐ-TTg dated 25/11/2015, the proportion of electricity produced from renewable energy (including large and small hydropower) in the country's total electricity production must reach 32% by 2030 and 43% by 2050.

Development policies for RE in Viet Nam

RE type	Mechanism	Feed-in Tariff	Ghi chú
Wind power	FIT	Onshore wind power @ 8,5 UScent/kWh <i>(projects COD before 01/11/2021)</i>	Decision No. 39/2018/QĐ-TTg and Decision No. 37/2011/QĐ-TTg
		Offshore wind power @ 9,8 UScent/kWh <i>(projects COD before 01/11/2021)</i>	
Biomass	FIT	Combine Heat and Power Generation @ 7,03 UScent/kWh	Decision No. 08/2020/QĐ-TTg
		Other biomass @ 8,47 UScent/kWh	
Solid waste	FIT	Generating gas for power from landfill @ 7,28 UScent/kWh	Decision No. 21/2014/QĐ-TTg
		Direct combustion @ 10,05 UScent/kWh	
Solar power	FIT	Ground-mounted solar power @ 7,09 UScent/kWh	Decision No. 13/2020/QĐ-TTg dated 06/4/2020
		Floating solar power @ 7,69 UScent/kWh <i>(projects having investment policy and operation before 2020)</i>	
		Rooftop solar power @ 8,38 UScent/kWh	

Development policies for RE in Viet Nam

On May 15, 2023, the Prime Minister issued Decision No. 500/QĐ-TTg on approving the national power development plan for the period 2021 – 2030, vision to 2050

Development solution for new and renewable energy sources:

Target (MW)	2030	2050
National demand (Pmax)	90.512	185.187-208.555
Total national installed capacity	150.489	490.529 - 573.129
Hydropower (including small hydropower)	29.346	36.016
Onshore wind power	21.880	60.050 - 77.050
Offshore wind power	6.000	70.000 - 91.500
Solar (excluding existing rooftop solar)	12.836	168.594 - 189.294
Power from biomass, solid waste and other REs	2.270	6.015
Pumped storage hydropower and battery energy storage	2.700	30.650 - 45.550
Imported power	5.000	11.042
Thermal powerplants supplying for separated load (combine heat and power - CHP)	2.700	4.500

Development policies for RE in Viet Nam

Policy plans:

- To study the bidding/auction mechanisms for RE projects (Competitive bidding);
- To study direct power purchase agreement mechanisms (Direct PPA);
- To build technical standards for wind power and solar power projects;
- To study the mechanism for mobilization of social resources to invest in transmission grid to develop RE projects.



03

Advantages, challenges, potential and orientations for RE development to 2050



Advantages and challenges in RE development

Advantages:

With a long coastal line and tropical monsoon climate, Viet Nam has substantial RE sources (wind, solar, hydroelectric, ocean, biomass, and geothermal).

Challenges:

- ✓ The transmission grid has not developed synchronously with the development of RE sources, resulting in overload cases in some provinces, some projects are curtailed.
- ✓ Operation of the power system: facing more difficulties when there is higher RE shares regarding frequency and voltage stability...
- ✓ Limited reserve capacity

Potential for RE Development

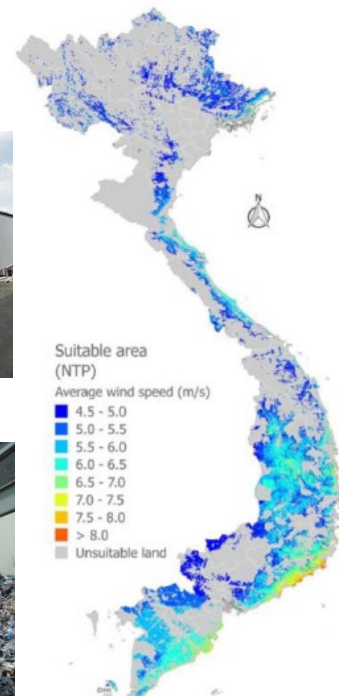
Target (MW) for Power Mix	2025	2030	2050
National demand (Pmax)	59.318	90.512	185.187-208.555
Total national installed capacity	97.234	150.489	490.529 - 573.129
Coal-fired power	28.757	30.127	-
Coal-fired power fully converted to biomass/ammoniac	-	-	25.632 - 32.432
Combined Cycle Gas Turbine (CCGT)+ domestic gas-fired power, converted to LNG	7.076	14.930	7.900
Domestic thermal power fully converted to hydro	-	-	7.030
CCGT using new LNG	2.700	22.400	-
CCGT LNG combined with hydro	-	-	4.500 - 9.000
CCGT LNG fully converted to hydro	-	-	16.400 - 20.900
Flexible thermal power sources	-	300	30.900 - 46.200
Oil-fired + Gas turbine	1.221	-	-
Hydropower (including small hydropower)	26.795	29.346	36.016
Onshore wind power	13.416	21.880	60.050 - 77.050
Offshore wind power	-	6.000	70.000 - 91.500
Concentrated solar power/rooftop solar / self-consumption	10.136	12.836	168.594 - 189.294
Power from biomass, solid waste and other REs	1.180	2.270	6.015
Pumped storage hydropower and battery energy storage	50	2.700	30.650 - 45.550
Imported power	4.453	5.000	11.042
Thermal powerplants supplying for separated load (combine heat and power - CHP)	1.450	2.700	4.500

Orientation for RE Development

Prioritize and adopt breakthrough policies to promote the development of rooftop solar power for households and construction buildings, especially in areas at risk of power shortage, such as the North and promote self-produced and self-consumed solar power.

It is oriented that offshore wind power shall be strongly developed in combination with other types of renewable energy (solar power, onshore wind power...) to produce new energy (green hydrogen, green ammonia ...) to serve the demand for domestic usage and export

Prioritize and encourage the development of biomass power (with a potential at about 7,000 MW), electricity produced from garbage and solid waste (potential at about 1,800 MW) in order to utilize agricultural, forestry and wood processing by-products as well as to promote afforestation and environmental treatment in Viet Nam



04

Solutions for the implementation of the power plan and RE development.



Resources solutions for the implementation of the power plan

1. Solutions to ensure power supply security
2. Solutions to create capital sources and mobilize investment capital for the development of the power industry
3. Solutions regarding legal framework and policy
4. Solutions for environmental protection, natural disaster prevention and control
5. Solutions regarding science and technology
6. Solutions for economical and efficient use of electricity
7. Solutions for human resource development
8. Solutions for international cooperation
9. Solutions for strengthening domestic capacity, localization of electrical equipment, establishment and development of electrical engineering industry
10. Solutions for operational management, improving the performance of electricity activities
11. Solutions for operation, implementation and supervision of the power planning

Some specific solutions for RE development

- ❑ Amending the Law of Electricity to promote and speed up RE exploitation.
- ❑ Studying to enact the Law of RE and relevant regulations (the auction and bidding mechanisms for investor selection accompany with pricing regulation during the process of amending the Law of Electricity).
- ❑ Implementing the pilot and proceeding officially set up the DPPA between the RE producer and buyer.
- ❑ Promoting mechanisms and policies for domestic investors to participate in developing RE and new and RE industry; facilitating procedures for RE development.
- ❑ Incentive policies and mechanisms to promote investment in R&D in new and renewable energy; establishing centres for new and RE development.
- ❑ Developing competitive electricity market in Viet Nam, etc...



THANK YOU FOR
YOUR ATTENTION!