Planning, policy and integration for sustainable development of wind energy in Vietnam 2022 – 2030

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VIET think tank mission:

Accelerate the
Transition of **Vietnam**
toward a
Carbon-neutral Society

Offshore wind studies conducted by VIET

1. The last two years
2. Revisiting scenarios made in 2019
3. Ways forward

Ha-Duong et al. (2021) Planning, policy and integration for sustainable development of offshore wind energy in Vietnam 2022 – 2030. VSOE2021 proceedings,. Lecture Notes in civil engineering vol. 208. Springer ISBN 978-981-16-7734. Available at https://minh.haduong.com .

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Vietnam climate mitigation goals

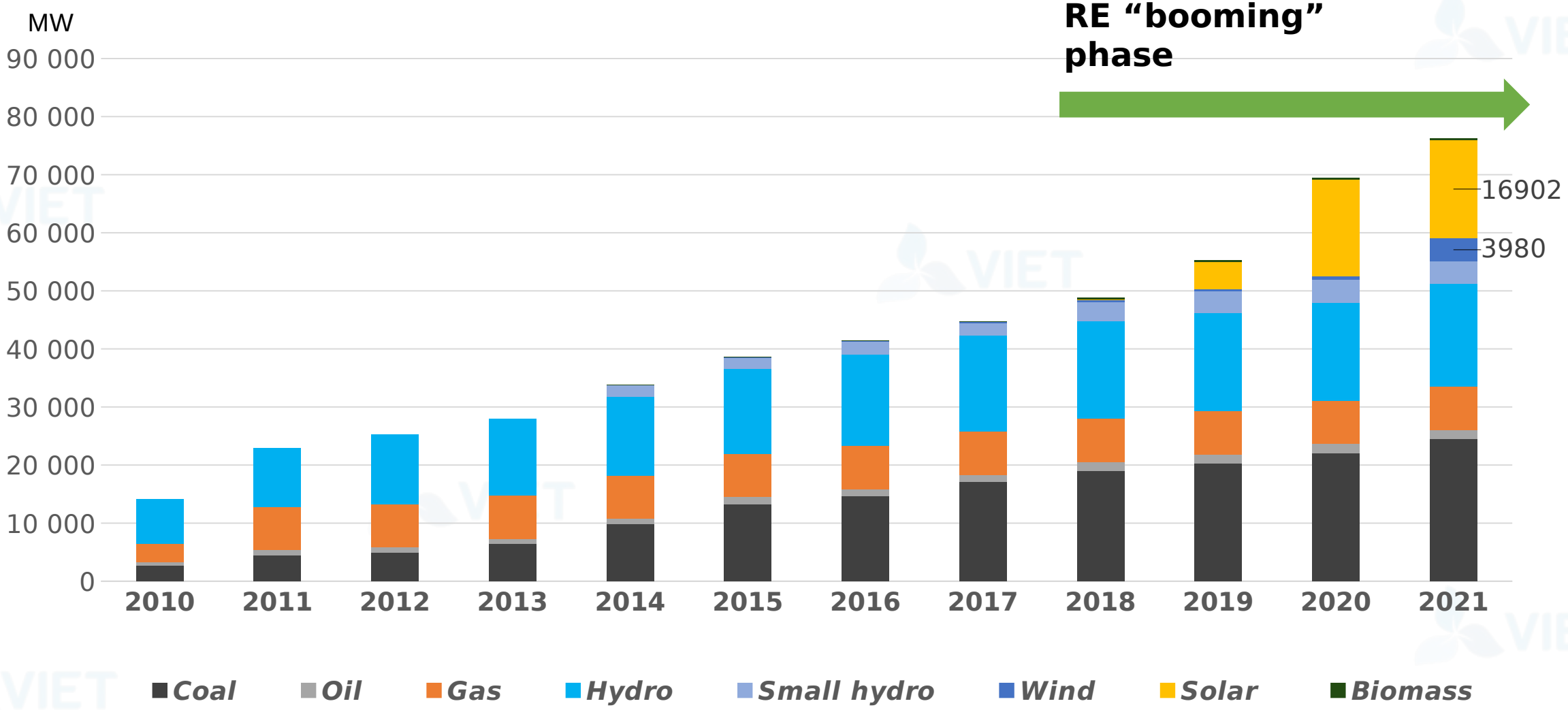
- ***2015 : We commit to a 8% - 25 % GHG reduction by 2030***
  compared to 320% baseline increase, not including industrial processes (INDC)

- ***2016 : We strive to meet 100% domestic renewable energy production***
  as rapidly as possible, while working to end energy poverty and protect water and food security, taking into consideration national circumstances. (Climate Vulnerable Forum)

- ***2020 : We commit to a 9% - 27 % GHG reduction by 2030***
  compared to baseline (updated NDC)

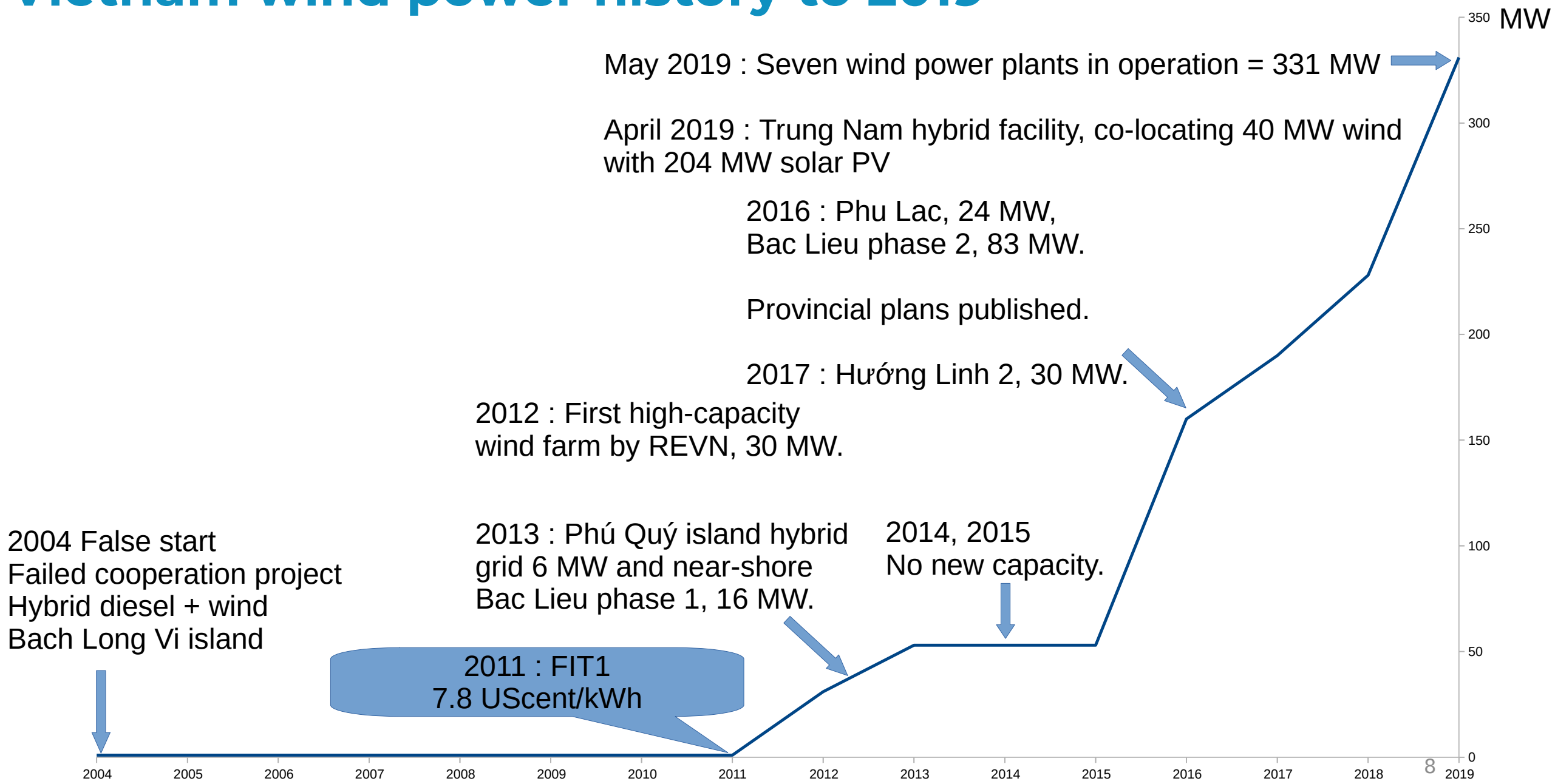
- ***2021 : We will make use of our own domestic resources, along with the cooperation and support of the international community, especially from the developed countries, in terms of finance and technology, including through mechanisms under the Paris Agreement, in order to achieve net-zero emissions by 2050 (COP26)***

Power mix of Vietnam by installed capacity

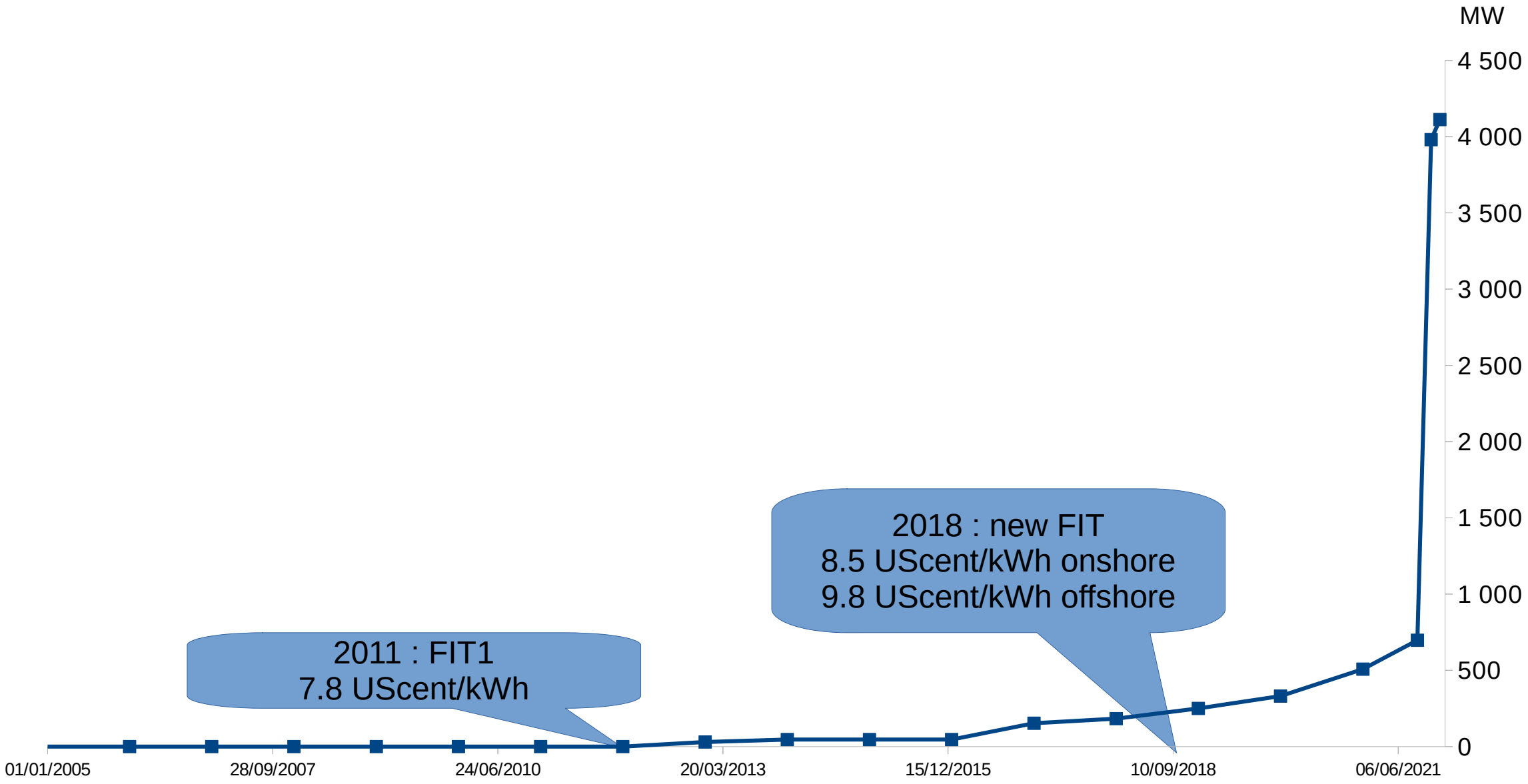


Source: VIET plots based on data from EVN

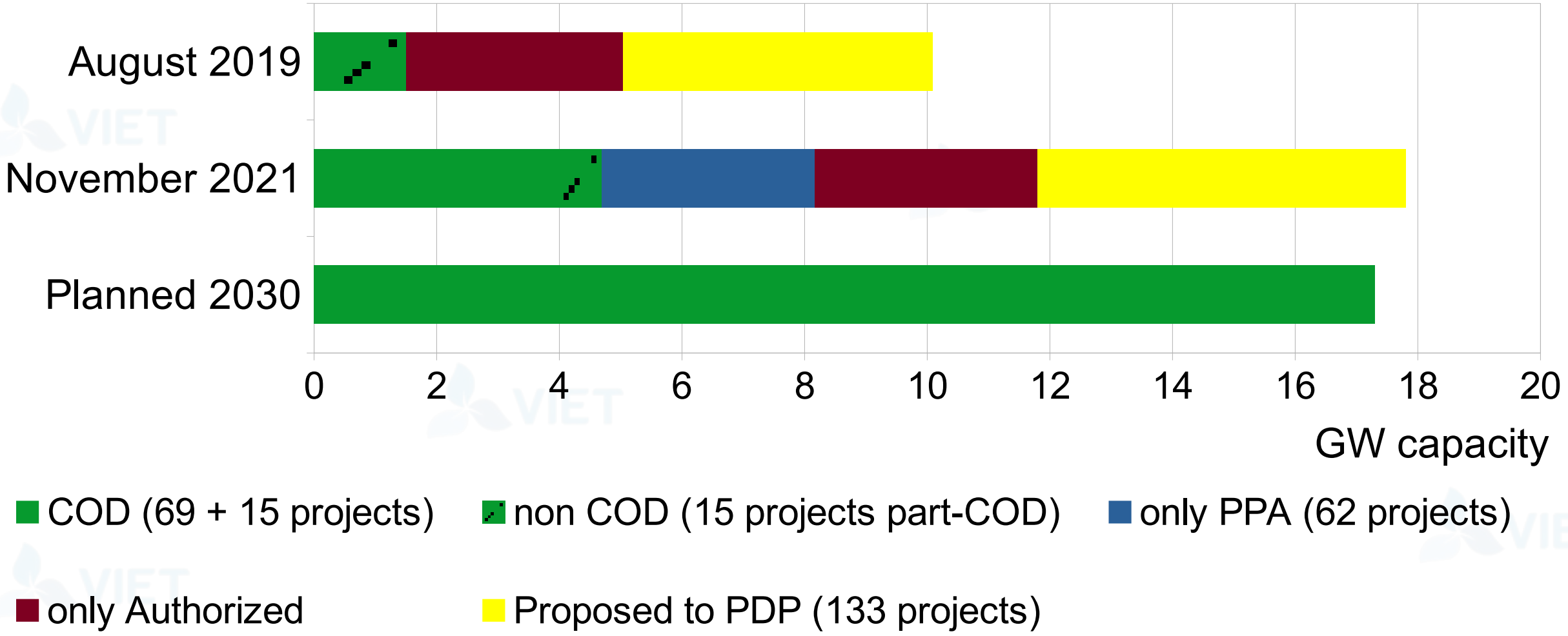
Vietnam wind power history to 2019



Vietnam wind power history – the last two years



Development of the wind projects pipeline in Vietnam



Letter 10052/BCT-DL, Letter 6742/EVN-TTD

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Three scenarios for Installed wind capacity in 2030

	Onshore	Offshore
Old Plan	6.1 GW	0.15 GW
New Normal	16.6 GW	9.5 GW
Factor Three	21.6 GW	20.9 GW

Old Plan scenario

- A wave of new wind farms connected to the grid in time to get the FIT, before November 2021.
- After that, the government does not renew the FIT,
- legal issues delay the first pilot auction and
- a global economic crisis impacts Vietnam, reducing economic growth and therefore domestic electricity demand.

New Normal scenario

- Big initial wave of wind projects in 2021, then
- market pulled by government auctions and
- by multinational companies procuring green electricity directly from wind project developers.
- The government credibly commits to an auction program for 2 GW of offshore wind per year after 2025.

Factor Three scenario

- The national oil and gas company PVN redefines itself as a sustainable energy provider, to play on its offshore work capacities and the complementarity between gas and variable renewables.
- The Thang Long Wind power project starts operating its first 600 MW phase at the end of 2022.
- Government adopts a regional leadership strategy in the wind energy sector.

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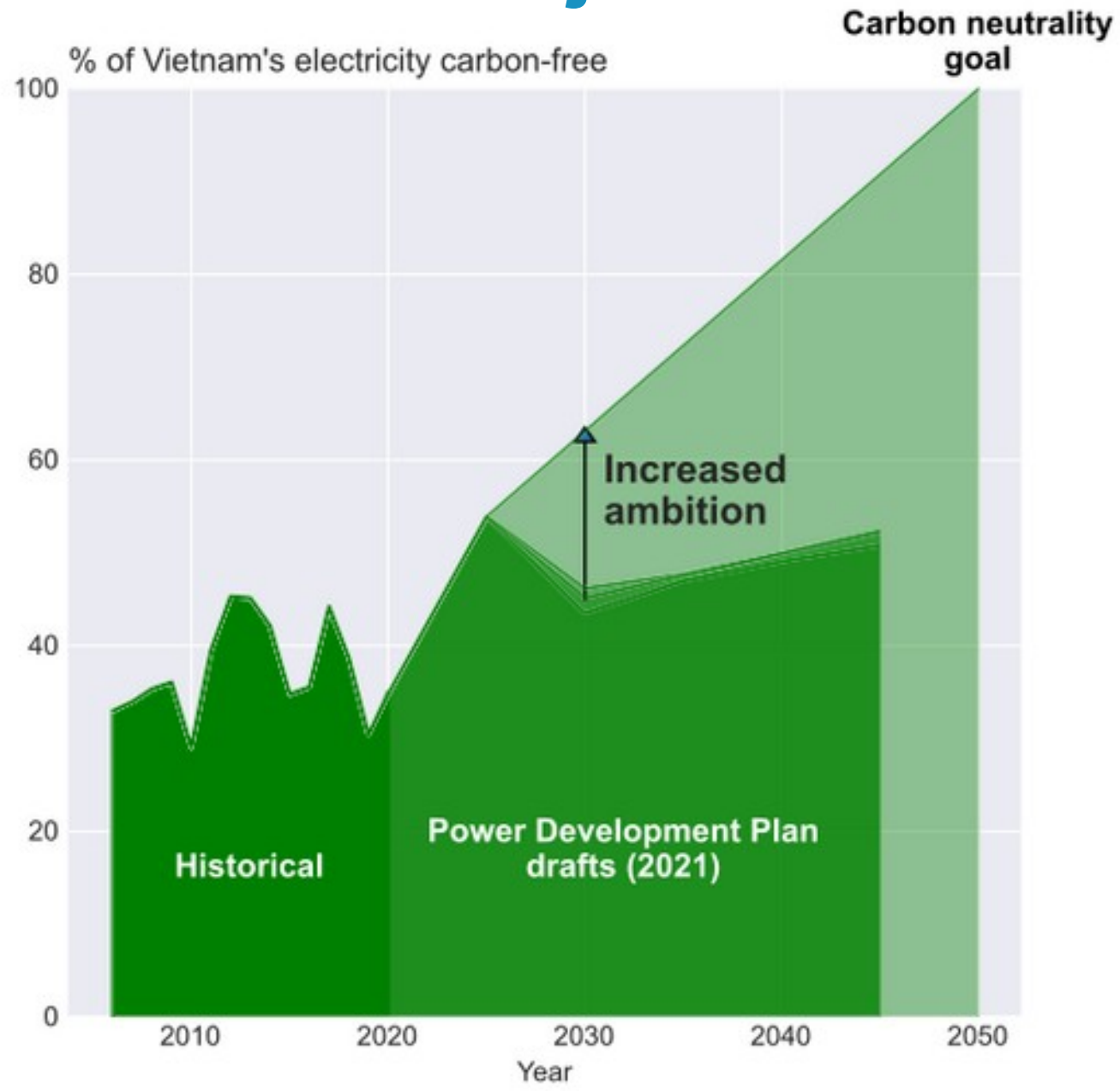
Align 2030 goals on 2050 objective



Plan more Offshore wind

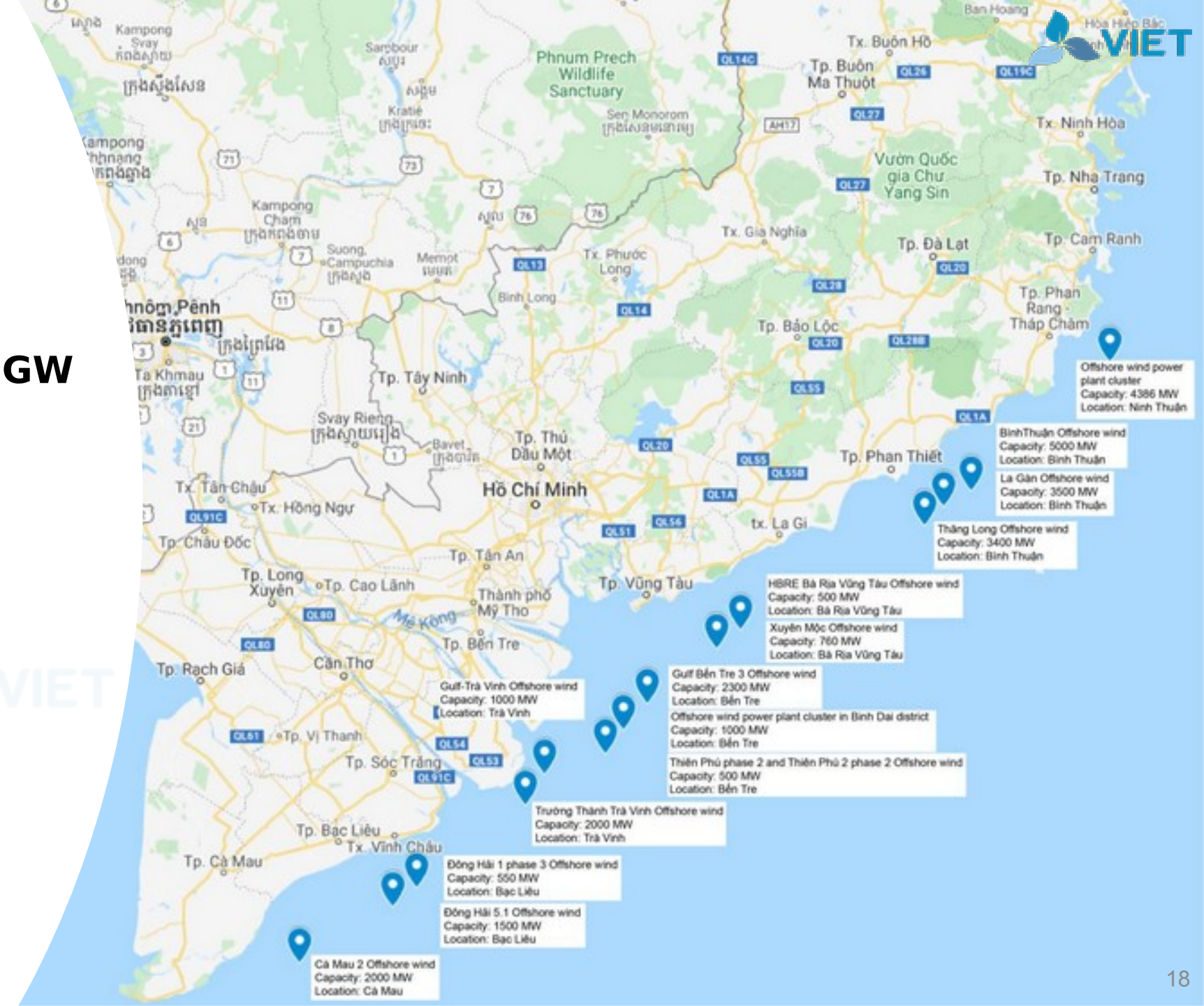
14 projects here for 28,4 GW

vs.

November PDP8 goals

4 GW by 2030

36 GW by 2045



Roadmap to reach 10GW of Offshore wind (2023-2030)

Source: Phuong H. Nguyen, Van Nguyen Dinh et al. (VSOE 2021) Options for zonation and grid integration of offshore wind in Vietnam.

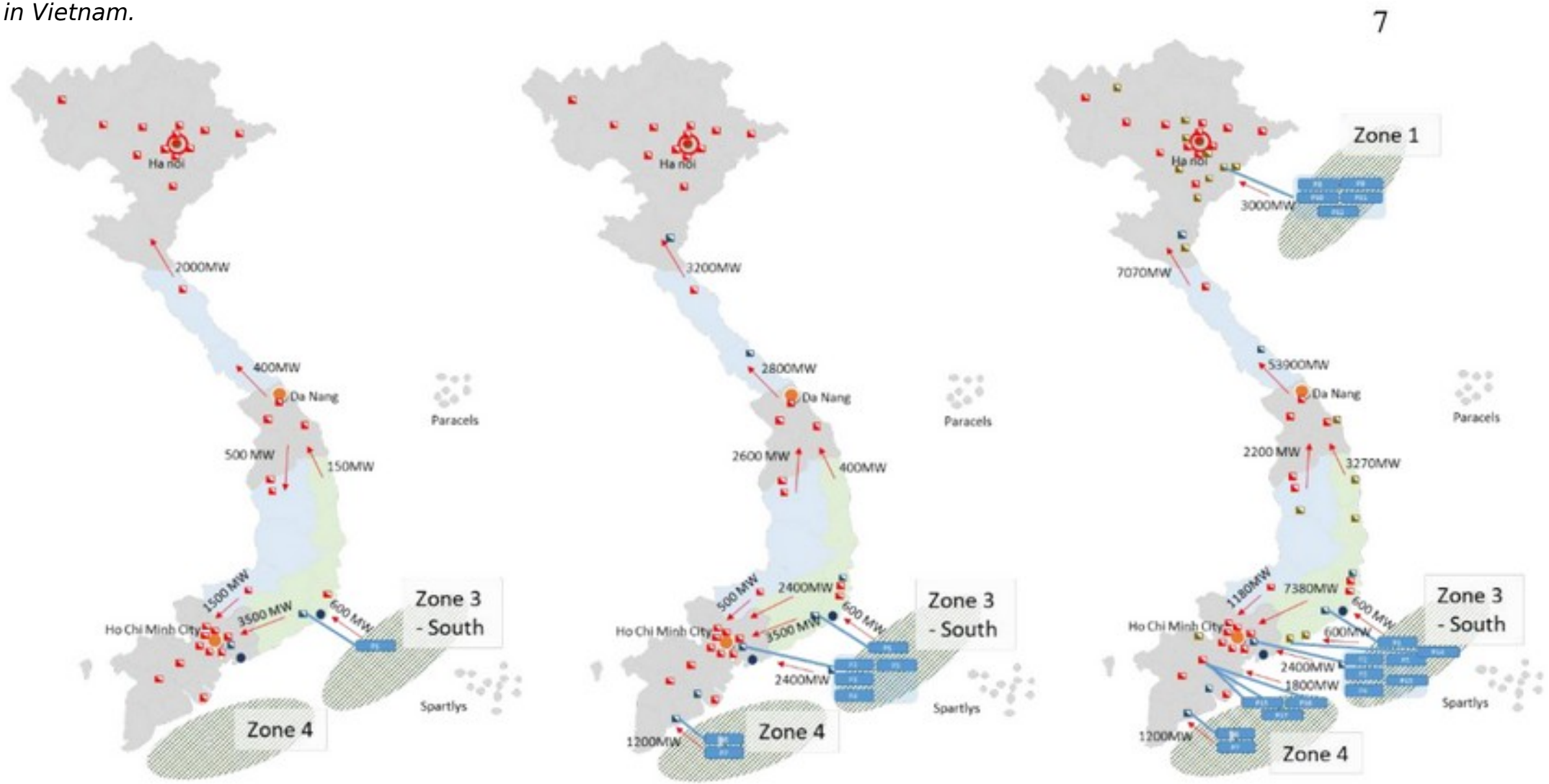
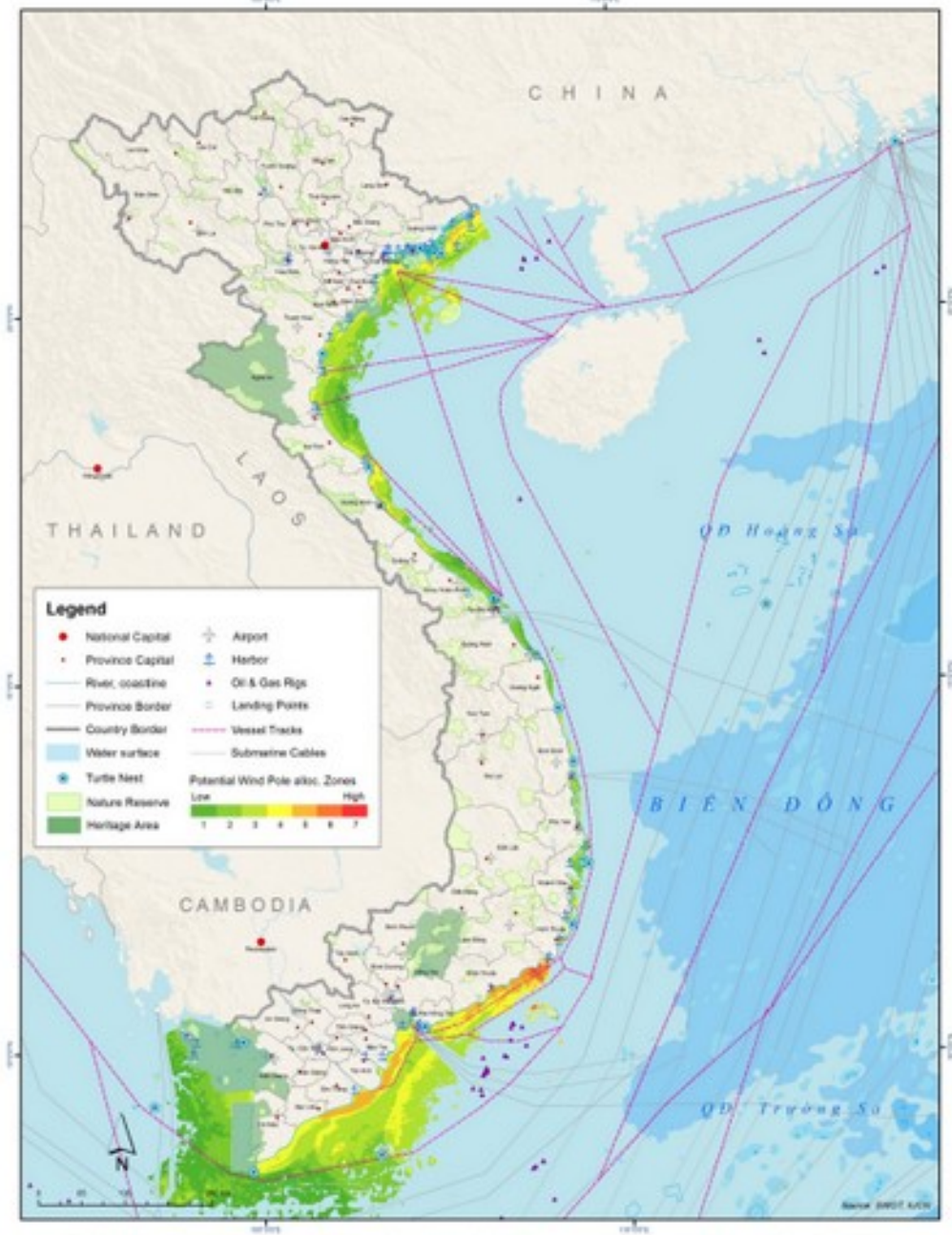


Fig. 3. Load flow snapshot in 2023, 2025 and 2030 (from left to right) - Cases of high renewable sources including max capacity from OWFs.

POTENTIAL SEA PORTS FOR OFFSHORE WIND ENERGY DEVELOPMENT
Tiềm năng cảng biển phục vụ phát triển điện gió ngoài khơi

Bản đồ này là sản phẩm nghiên cứu thuộc quyền sở hữu của Tổ chức Sáng kiến về Chuyển dịch năng lượng Việt Nam (VIET) được công bố vào tháng 08/2021. Trong trường hợp trích dẫn nội dung, đề nghị ghi nguồn như sau: "Sáng kiến về Chuyển dịch năng lượng Việt Nam. 2021. Hệ thống cảng biển tiềm năng."

POTENTIAL WIND POLE ALLOCATION ZONES
Khu vực thích hợp đặt trạm phát điện gió



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Invest North, avoid curtailment in the Center

Worst case: No transmission upgrade, Sunday of June 2022

In Central Highlands

Wind runs at **40%** capacity

Solar at **60%**

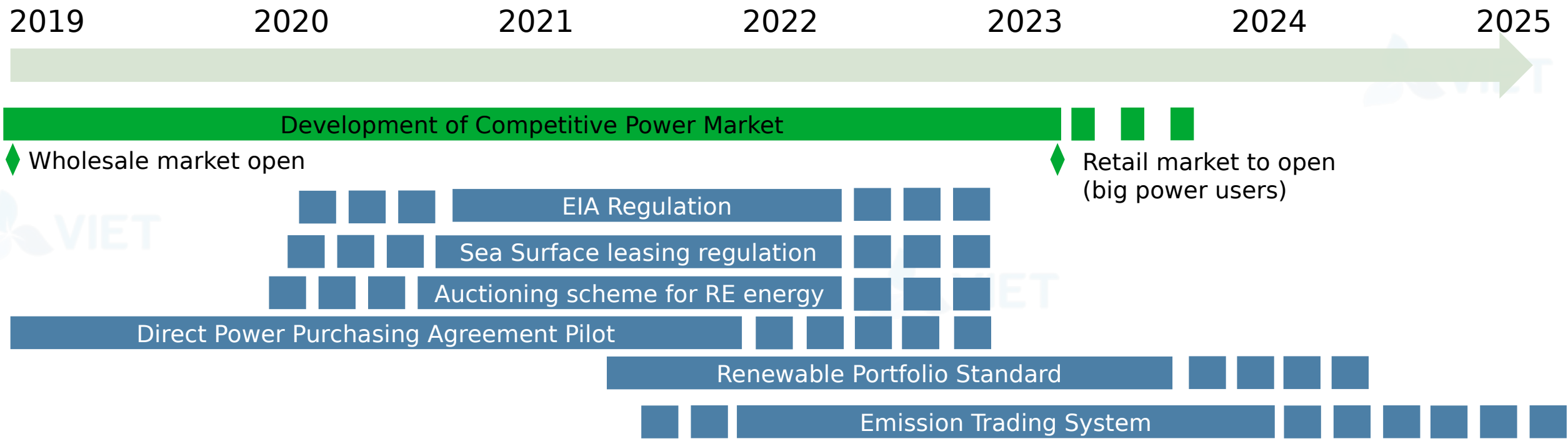
In South-Central

Variable renewables at **74%** capacity in Ninh Thuan, Binh Thuan

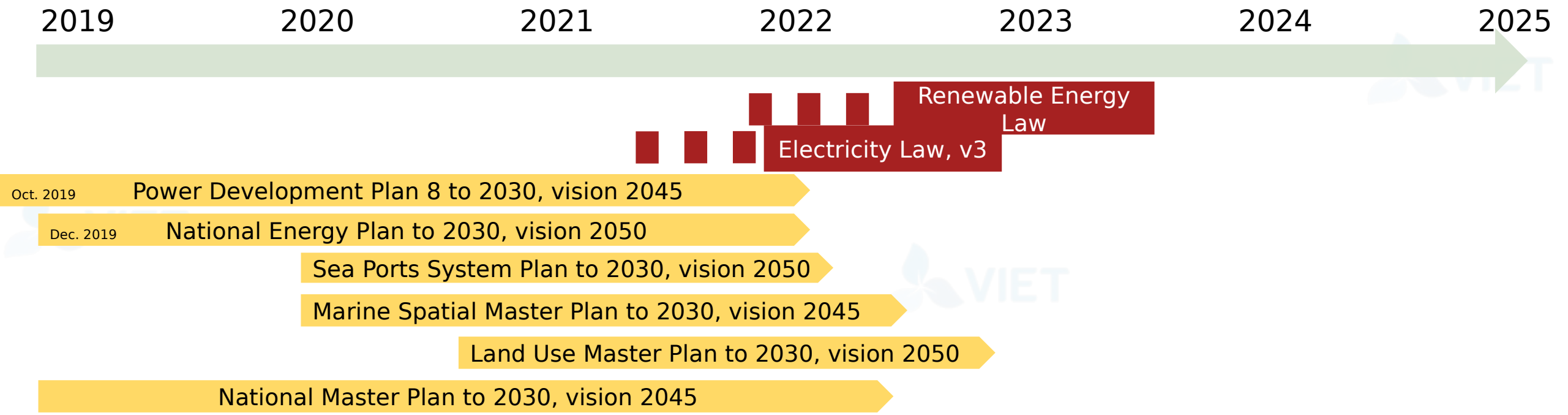
They run at **44%** in Binh Dinh, Phu Yen, Khanh Hoa

Source: VIET (2020) Ability to release capacity for wind power and solar power up to 2022. RR/04 – VIET06.2020

Open the market - *forget FIT*



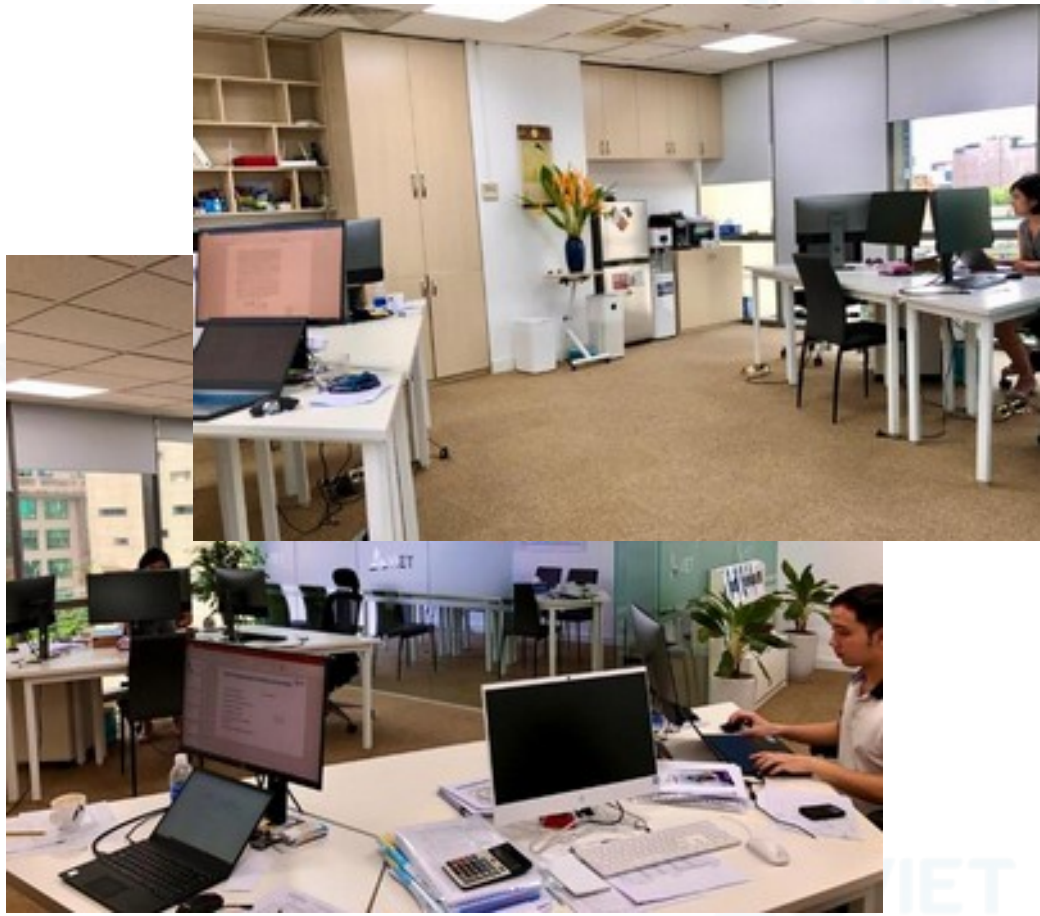
Enact policy framework



Concluding remarks

- *Old plan* scenario is behind us
- *New Normal* is within reach – add more offshore wind
- *Factor Three* needs serious thinking – market-based

Find more insights from the **Vietnam Initiative for Energy Transition** at our LinkedIn, Facebook and vietse.vn



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