

Latest report on National Power Plan VIII (PP8) – Nearing the final draft

On October 21st, 2022 the Ministry of Industry and Trade (MOIT) issued an updated draft of the National Power Plan VIII (PP8) to further clarify the expected final PP8 version related to different power sources, electricity production cost, etc. The main points from the draft include:

Coal-fired power

According to the latest draft version, coal thermal capacity has decreased sharply compared to previous versions (total remaining just over 32,000 MW by 2030 – 14,120 MW of capacity has been removed in the latest draft). In addition, coal-fired capacity would be stagnant after 2030 and by 2050, it is expected only 25,600 MW of this technology left, but it would be completely switched from coal to burning biomass/ammonia fuel. Currently, coal-fired capacity reached 24,674 MW with 39 plants and estimated to achieved 26,400 MW (4 plants) by the end of 2022.

Projects	Capacity: MW	Current Situation
Remaining	10,192	
Na Duong II	110	Achieved domestic loan option
Nghi Son II	1,330	Estimated finish in 2022
Quang Trach I	1,200	Under Construction
Vung Ang II	1,200	Under Construction
Van Phong I	1,432	Under Construction
Duyen Hai II	1,320	Estimated finish in 2022
Song Hau I	1,200	Estimated finish in 2022
Long Phu I	1,200	Construction Pending - Due to USA sanctions, Power Machine constructor (Russia) and Vietnamese investors had not conduct a reimbursement reconciliation
Thai Binh II	1,200	Estimated finish in 2022
Cancelation	6,800	
Nam Dinh	1,200	Not able to arrange capital on time as committed
Quang Tri	1,200	Not able to arrange capital on time as committed
Vinh Tan III	1,800	Not able to arrange capital on time as committed
Song Hau II	2,000	Not able to arrange capital on time as committed
Cong Thanh	600	Change fuel to LPG/LPG & change capacity to 1,200 MW

Sources: ACBS, Vietnam Energy Magazines

The report also gives consideration to the electricity production cost given Levelized Cost of Energy (LCOE – a measure of the average net present cost of electricity generation for a generator over its lifetime) with representative parameter.

Type Energy	Coal-fired
Technology	Supercritical
Fuel	Lignite 5a
Capacity: MW	600
Investment Rate: \$/kW	1,380
Calorific Value: Kcal/kg	5500
Self-consumed	10%
Scenario	1
Load factor: hr/year	6,100
Input price: \$/ton	60 - 100
LCOE: cent/kWh	6.14 - 8.1
Scenario	2
Load factor: hr/year	7,000
Input price: \$/ton	60 - 100
LCOE: cent/kWh	7.7

Sources: ACBS, Vietnam Energy Magazines

Gas thermal

Presently, there is nearly 8,000 MW in capacity across 15 gas electricity generation plants using domestic natural gas (LPG) and there would be additional 6,900 MW including Block B – O Mon gas electricity cluster (3,150 MW) and the Blue Whale – Central region gas-electricity cluster (3,750 MW). Particularly, O Mon's Official Development Assistance (ODA) loans from Japan has been cleared by the Government. Thereby, if deployed urgently, eliminating cumbersome procedures, this project would be commercially operating by 2026.

PP8 has added additional 6,000 MW of capacity from gas power plant projects using imported LNG to the 17,900 MW from PP7 until 2030, especially in the Northern to increase power supply in this region. Furthermore, PP8 also orients that by 2050, these plants would completely switch to hydrogen burning when the technology has advanced sufficiently.

LCOE representative parameters:

Type Energy	Gas-fired
Technology	Combined Cycle Gas Turbine
Fuel	LPG, LNG
Capacity: MW	750
Investment Rate: \$/kW	1,160
Calorific Value: kcal/m ³	8,500
Self-consumed	10%
Load factor: hr/year	6,100
Input price: \$/MMBtu	7.5 - 10
LCOE: cent/kWh	7.67 - 9.6

Sources: ACBS, Vietnam Energy Magazines

Solar and Wind

Solar capacity would be stagnant until after 2030, except for projects which had been already approved.

The Government encourages rooftop solar power development. Even though it is not connected to the national grid system and has had some management shortcomings in recent times, it reduces the investment pressure in substations and transmissions, and it can quickly mobilize domestic private capital thanks to its small scale.

PP8 also indicated that it will pay more attention to allocations to renewable sources to avoid "speculation" and uncontrolled development, which could lead to grid congestion, given what happened with solar in 2018-2020 period, although no particulars have been provided.

Capacity development plan is the same as previous draft which is 8,736 MW Solar (excluding rooftop solar) and 11,700 MW onshore wind power until 2030.

Current LCOE: 4.6 cent/kWh for Solar, 8.2 cent/kWh for Wind (IRENA)

Comments: We think that the plans to add such a large amount of LNG capacity within 8 years according to PP8 might be a bit aggressive. Meanwhile, more than 21,000 MW new gas powered projects would be added excluding NT3 & 4 – 1,500 MW and Hiep Phuoc 1: 1,200 MW, which are already being built. It equals an average of 2,650 MW gas-fired installed capacity per year which is a huge challenge for the Government both in scale of the projects and capital mobilization required.

Given the trend of many countries with energy transition goals from coal power to gas electricity, we forecast that the price level of imported LNG will trend higher, which might adversely influence future gas-fired projects in general.

We expect that the MOIT and the Government will approve the final PP8 by the end of 2022 to accomplish sustainable, secured, safe, reliable and synchronous energy development.

Regarding the new and incentive price baskets for solar and wind energy, the process is going to take about 45 days after effective date according to Circular No. 15/2022/TT-BCT, which is Nov 25th, 2022. We expect the process would be finalized before the Lunar Tet Holiday in late January 2023.

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