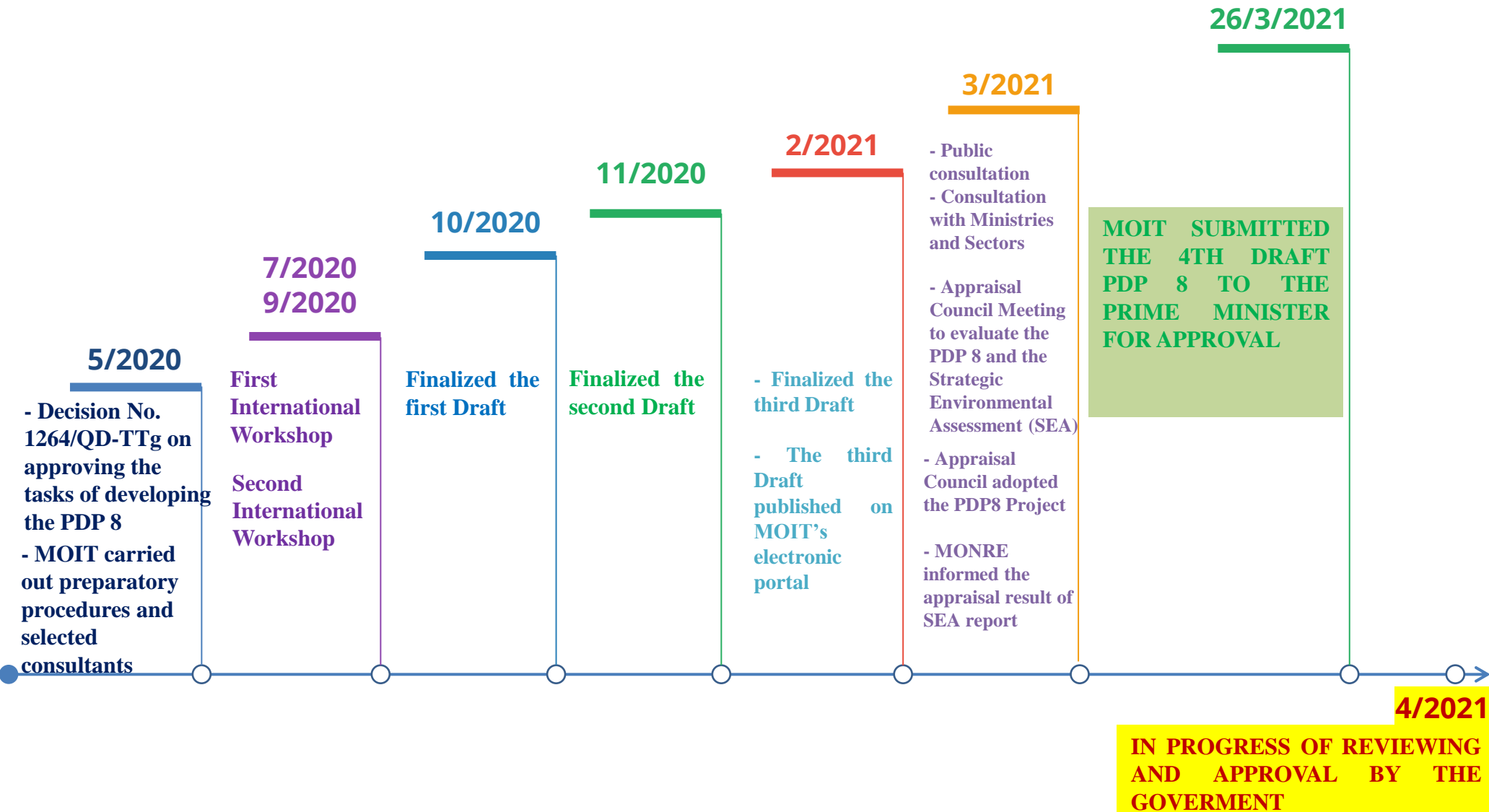


UPDATES ON
NATIONAL POWER DEVELOPMENT PLAN
FOR THE PERIOD 2021-2030, WITH AN OUTLOOK
TO 2045

Hanoi, May 2021

THE DEVELOPMENT OF THE NATIONAL POWER DEVELOPMENT PLAN VIII (PDP 8)



SOCIO-ECONOMIC DEVELOPMENT FORECAST

Forecast of annual GDP growth rate [by Development Strategy Institute under MPI]

GDP growth scenario/ period	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045
Low-growth	5.9	6.2	5.8	5.2	4.8	4.1
Medium	5.9	6.8	6.4	6.0	5.6	5.5
High	5.9	7.5	7.2	6.6	6.1	6.1

POWER DEMAND FORECAST RESULTS

The results of power demand forecast based on the GPD growth scenarios are as follows.

	Year	2020	2025	2030	2035	2040	2045
I	Sales electricity (TWh)						
	Low scenario	217.0	325.0	458.9	580.1	672.2	733.3
	BAU scenario	217.0	335.3	491.2	651.3	779.7	886.9
	High scenario	217.0	346.6	530.5	736.9	938.3	1101.2
II	Maximum capacity (GW)						
	Low-growth scenario	38.7	57.6	80.8	101.9	117.8	128.4
	BAU scenario	38.7	59.4	86.5	114.0	135.6	153.3
	High scenario	38.7	61.4	93.3	128.8	162.9	189.9
III	Production electricity (TWh)						
	Low-growth scenario	247.0	366.9	515.0	647.5	745.6	807.8
	BAU scenario	247.0	378.6	551.3	727.0	864.9	977.0
	High scenario	247.0	391.3	595.4	822.5	1040.8	1213.1

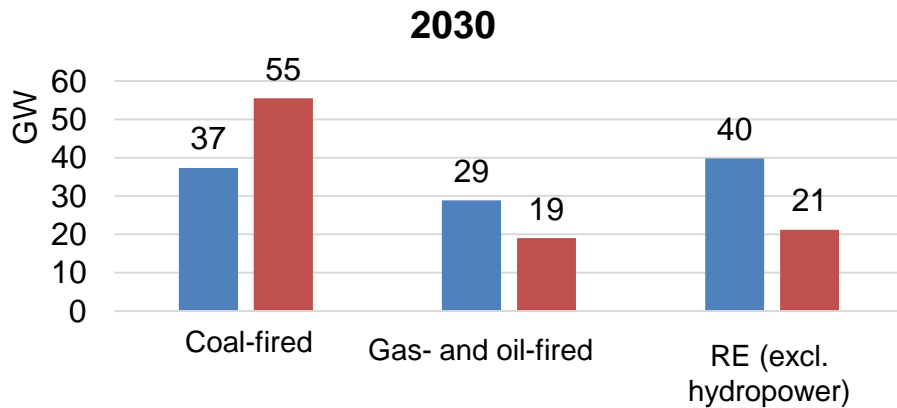
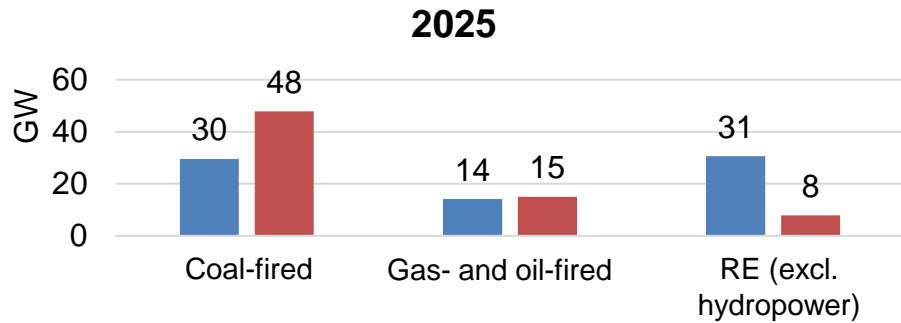
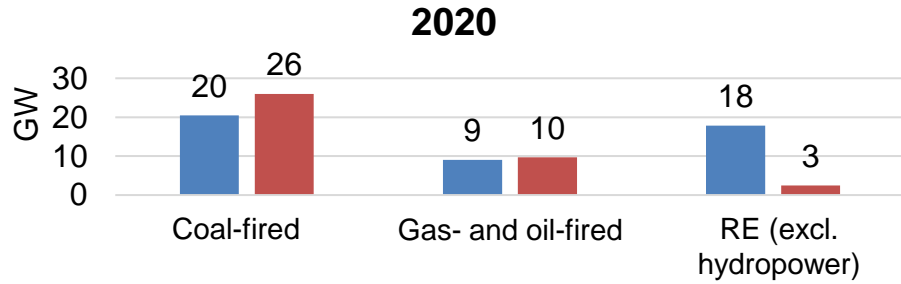
Load growth rate

	Average growth rate	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045
	Low scenario	8.4%	7.1%	4.8%	3.0%	1.8%
	BAU scenario	9.1%	8.0%	5.8%	3.7%	2.6%
	High scenario	9.8%	8.9%	6.8%	5.0%	3.3%

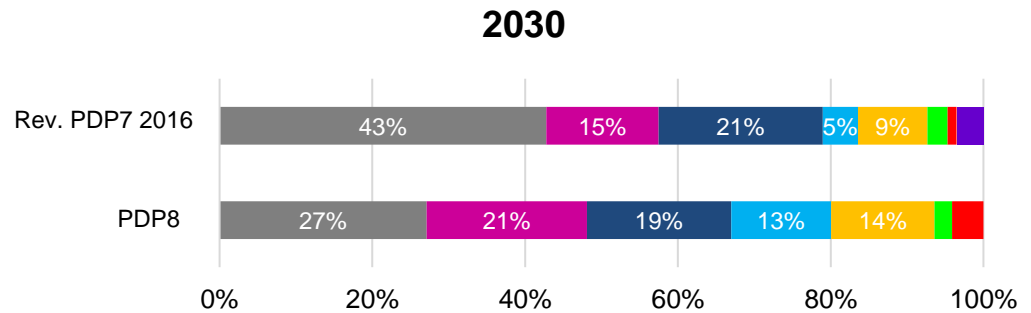
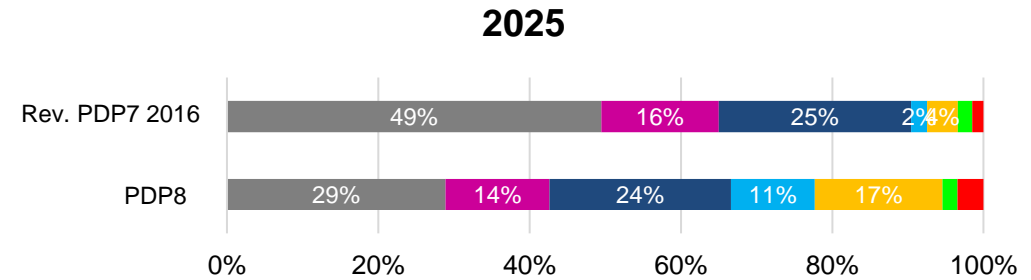
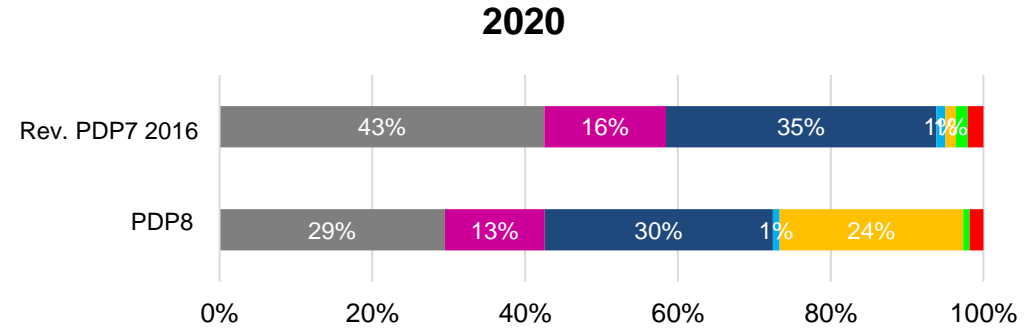
Power source development scenario

- **BAU scenario**
 - Corresponding to the results of BAU-scenario power demand forecast
 - Total installed capacity in 2030: 138,000 MW, of which: Coal-fired power accounts for 27%; solar and wind power represents 27%.
 - The share of renewable energy in the total primary energy supply in 2030: 18.7%
- **High scenario**
 - Corresponding to the results of High-scenario power demand forecast
 - Total installed capacity in 2030: 150,000 MW, of which: Coal-fired power accounts for 27%; solar and wind power represents 27%.
 - The share of renewable energy in the total primary energy supply in 2030: 19.1%
- **High scenario with consideration of power generation projects delay**
 - Corresponding to the results of high-scenario power demand forecast taking into account the delay of some cs
 - Total installed capacity in 2030: 167,000 MW, of which: Coal-fired power accounts for 24%; solar and wind power represents 36.5%.
 - The share of renewable energy in the total primary energy supply in 2030: 19.8%

COMPARISON OF CAPACITY SCALE IN THE BAU SCENARIO AND IN THE REVISED PDP7

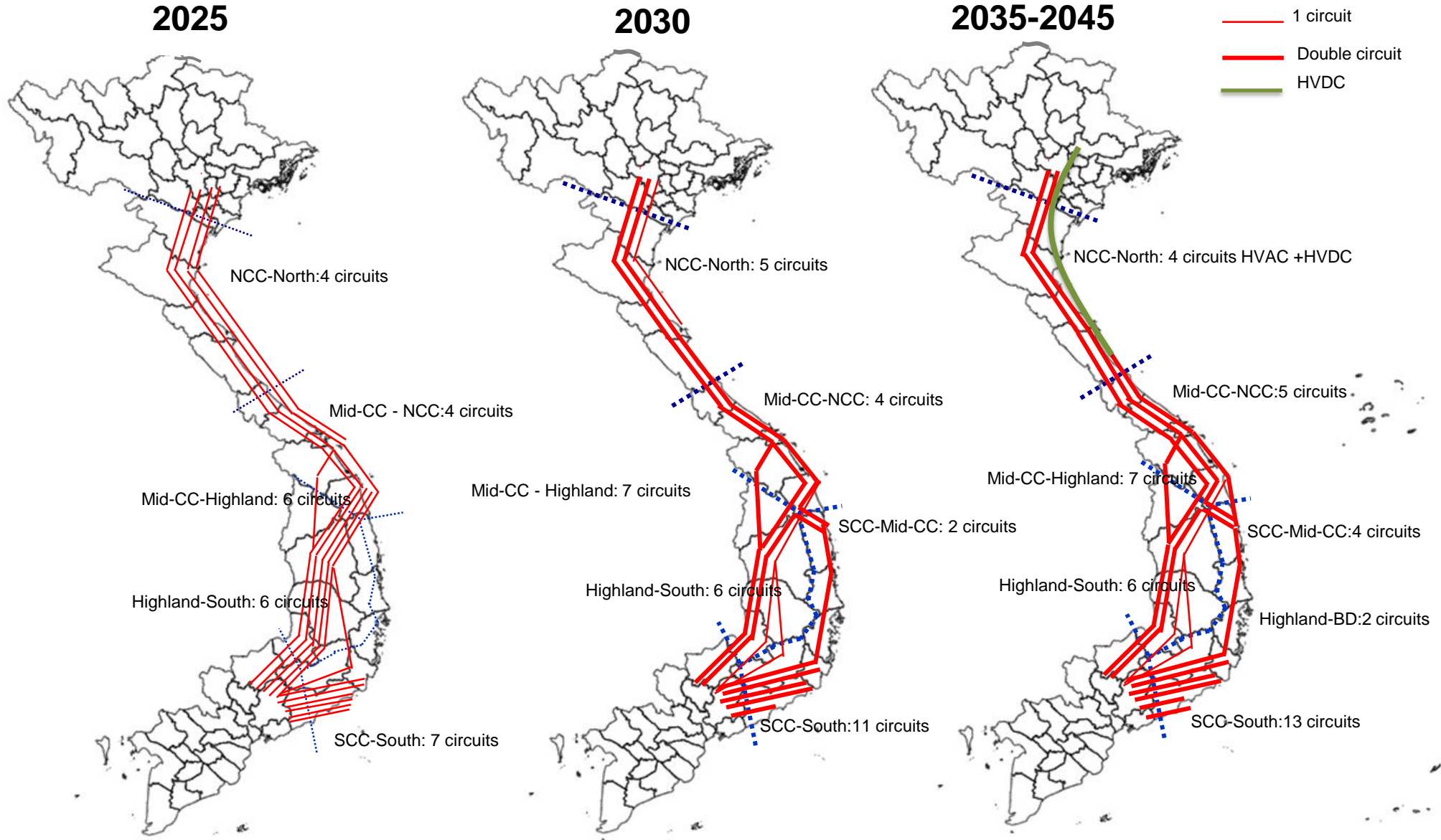


■ PDP8 ■ Rev. PDP7 2016



■ Coal-fired ■ Gas- and oil-fired ■ Hydropower & pumped-storage hydropower ■ Wind
 ■ Solar ■ Biomass and other RE ■ Imported ■ Nuclear

Inter-regional transmission scale in the proposed scenario – Baseload



HIGHLIGHTS OF THE DRAFT PDP 8

❖ **The zoning of planning areas is rational and in line with regional potential. Advanced planning model was applied to verify the operation of the power system with high share of renewable energy:**

- ✓ The PDP was developed based on division of 6 regions instead of 3 regions as previous PDPs to ensure a more reasonable demand-supply, minimize power surplus and optimize the inter-regional power transmission. Advanced planning and calculation models were applied to simulate the system operation in the context of high vRE share in the power system, thereby evaluating the planning of selected power sources.

❖ **The social costs have been included in the power production for the first time:**

- ✓ External costs (emission of CO₂, NO_x, SO_x, fine dust, treatment of solar cells and storage batteries, etc.) have for the first time been included in the calculations of the power development program. Compared to the previous Plans, PDP 8 has evaluated the impact of power development on the lives of the whole society more comprehensively. Such calculation of the external costs will enable the Power development program to run on the right path towards sustainable and environmentally-friendly development, in line with the general trend of the world;
- ✓ The impacts of the Power development program on social lives have been quantified.

HIGHLIGHTS OF THE DRAFT PDP 8 (cont.)

❖ **The power structure will be developed towards a more diversification and high priority given to RE development:**

- ✓ To achieve development targets set in the Resolution 55 and the Renewable Energy Development Strategy. Accordingly, the share of RE would be 32% by 2030 and rise to 46% by 2045. The share of gas-fired power will be increased whereas the coal-fired power will be decreased. An increasing diversification of power sources will help strengthen the power supply security.

❖ **The PDP is quite open, with only big and prioritized power projects listed :**

- ✓ The Government and MOIT will annually calculate and issue a short-term, mid-term and long-term PDP Implementation Plan to create the flexibility in operation of the power system and ensure the power supply security;
- ✓ 3 groups of mechanisms and 11 solutions to implement the PDP are to be developed, of which the key actions: To finalize regulatory framework for the power sector, power pricing mechanisms, and mechanisms to ensure the power system operation. These mechanisms and policies will promote the implementation of the PDP 8.

THANK YOU FOR YOUR ATTENTION!