

VIETNAM WHOLESALE ELECTRICITY MARKET 2019





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01

PREPARATION BACKGROUND



Legal framework

- ❑ Decision 63/2013/QĐ-TTg: Decision on the roadmap, conditions and sector structure for establishment and development of power market grades in Vietnam
- ❑ Decision 8266/QĐ-BCT: Approval of the detailed design of Vietnam's competitive wholesale electricity market
- ❑ Decision No. 3038 / QĐ-BCT dated August 10, 2018 of the Minister of Industry and Trade on the plan to operate the wholesale electricity market in 2019.

Regulatory framework

❑ Cost regulation (cross-subsidizing) between PCs

- ✓ According to Decision 8266/QĐ-BCT: cost regulation (cross-subsidizing) between PCs through a balance account or equivalent mechanism. This appeared to be new mechanism that needs to be researched carefully.
- ✓ In 2019: the cost regulation between the PCs will continue to be implemented through the Bulk Supply Tariff mechanism of EVN.

❑ Contract allocation

- ✓ According to Decision 8266/QĐ-BCT: allocate all existing contracts (CfD) between EVN and Generation company to PCs.
- ✓ In 2019, only a number of contracts will be allocated to PCs due to the absence of a regulatory mechanism between the PCs through the Balance Account.

- ❑ In 2019, EVN will continue to perform the spot electricity payment function until NLDC is accounted independently and the mechanism of separating payment of CFD contracts and spot market is established.

VWEM 2019 objectives

- ❑ Implement the operation of VWEM 2019 under Decision 8266/QD-BCT subjects to the constraints on apparent conditions;
- ❑ Improve mechanisms to participate in electricity market for generation company;
- ❑ Evaluate the mechanisms of VWEM 2019; completing the legal framework, IT infrastructure to gradually implement VWEM under Decision 8266/QD-BCT.

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KEY FEATURES OF VWEM 2019



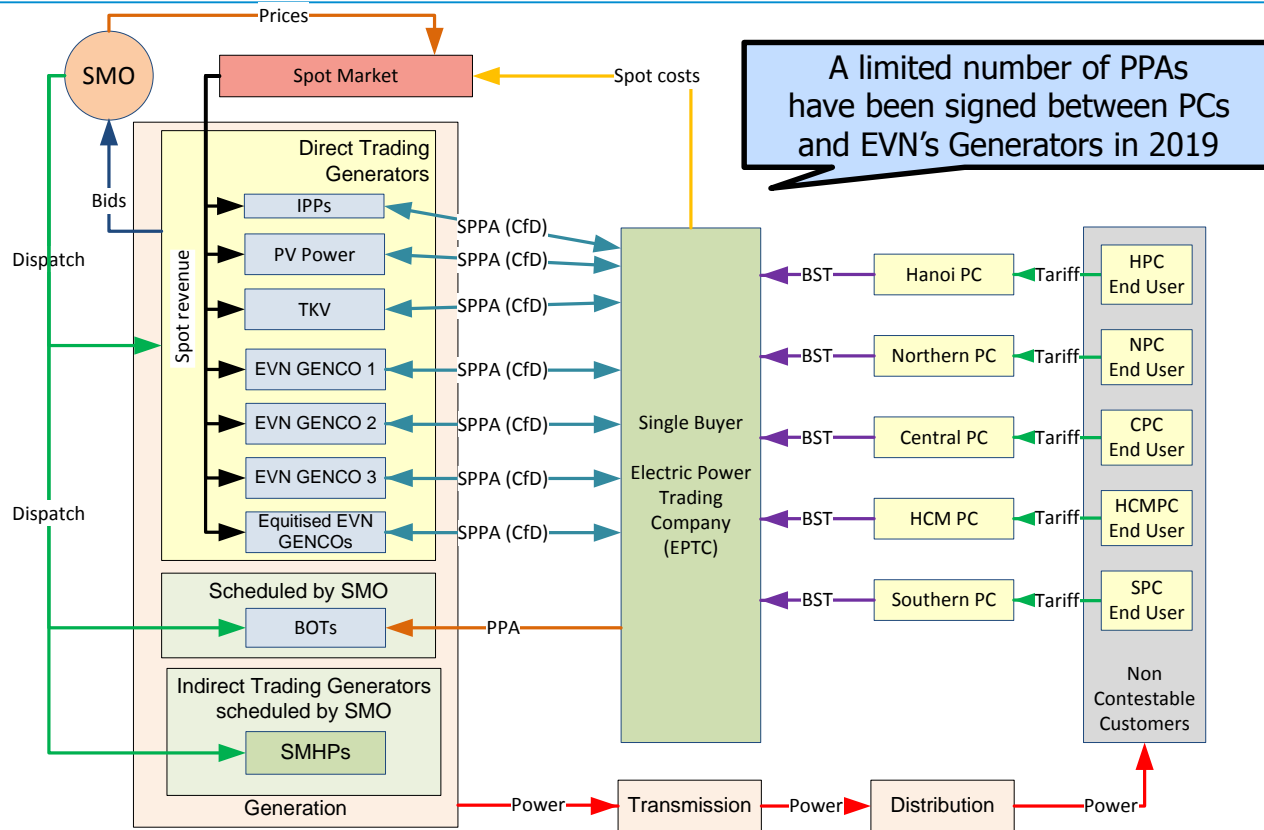
The operating mechanism

- ❑ Generators: participate in electricity market similar to the on-going generation market;
- ❑ PCs:
 - ✓ Purchase a part of the electricity consumption (off-take from the grid) on the electricity market. The rest of the electricity consumption is purchased from EVN under the mechanism of BST;
 - ✓ Continue to implement the contract allocation of Phu My 1 and Phu My 4 power plants with the same mechanism as 2018;
 - ✓ Directly sign PPAs with 04 new power plants (go into operation in 2018 and 2019).

Signing contracts with new power plants participating in VWEM

- ❑ In 2019, there are expected to be 04 new power plants participating in the power market to sign contracts directly with the PCs: Thai Binh 1, Vinh Tan 4, Duyen Hai 3 MR, Vinh Tan 4 MR (From the first day of the month following the month of COD).
- ❑ Principles of negotiation and signing contract:
 - ✓ EVN negotiates with 05 PCs as regulated in Circular 56/2014/TT-BCT and Circular 13/2017/TT-BCT of the Ministry of Industry and Trade and other Circulars (if any).
 - ✓ Each new power plant signs 05 contracts with 05 PCs. The contract quantity (Q_c) of the power plant with a PC is directly proportional to the power consumption (load) of the PC. The contract price is the negotiated price agreed between 06 parties.

Current VWEM Arrangements under Circular No. 45 (for 2019)



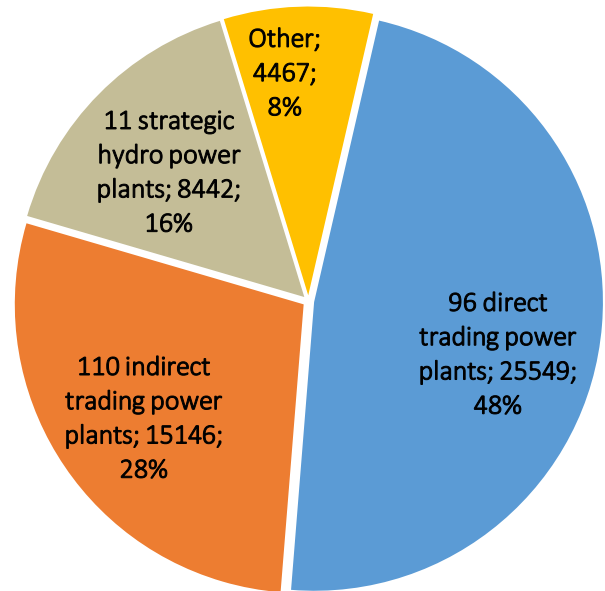
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OPERATIONAL RESULTS IN THE FIRST 6 MONTHS OF 2019



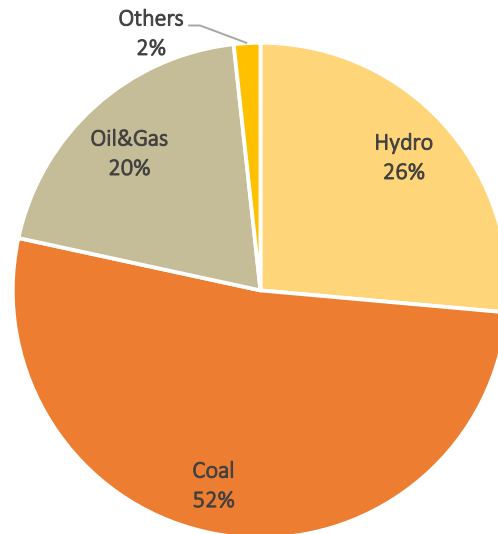
Generation Installed Capacity & Energy Production for First 6 months

Generation Installed Capacity by Market Participation Status



■ 96 direct trading power plants ■ 110 indirect trading power plants
■ 11 strategic hydro power plants ■ Other

Category	Energy production (bil. kWh)	(%)
Hydro	30.3	26 %
Coal	59.6	52 %
Oil & Gas	22.8	20 %
Others	1.98	2 %
Total	114.7	100%



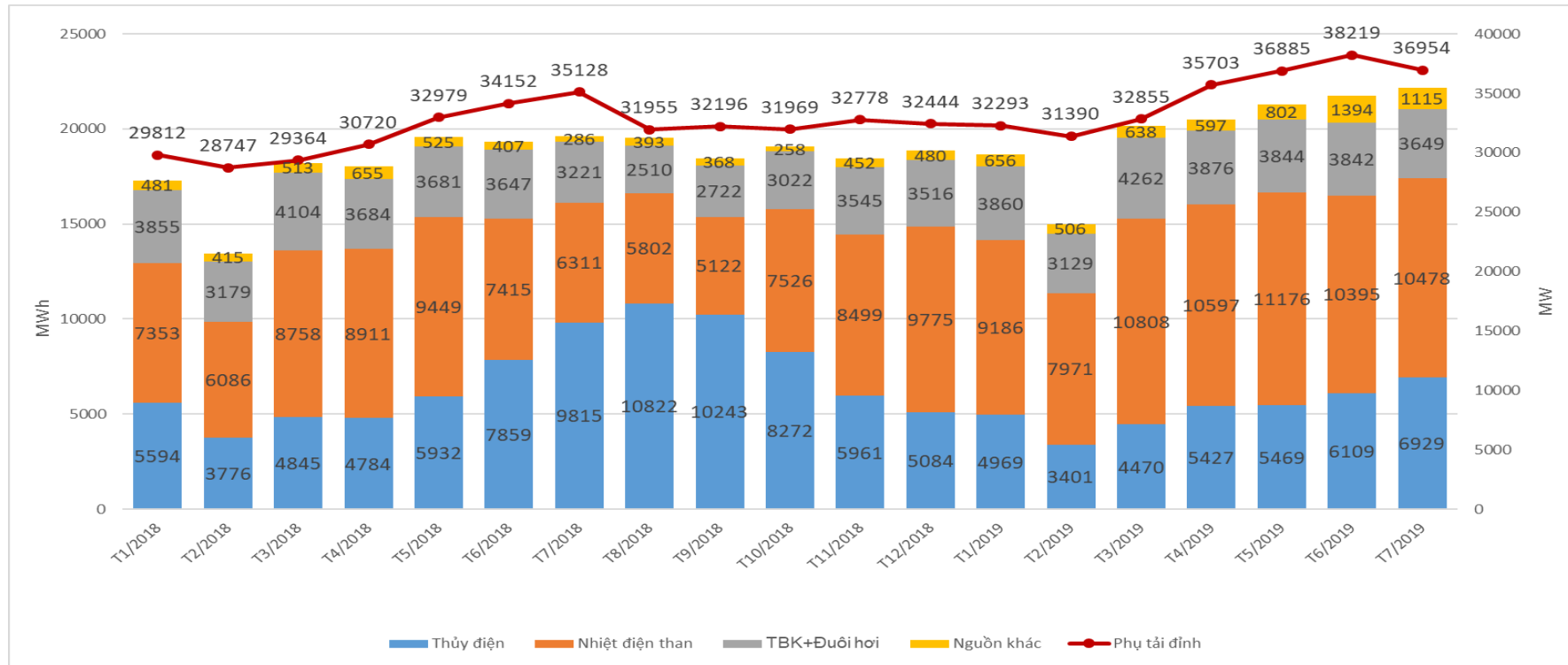
Operational results - System

❑ System Operation difficulty

- ✓ The rate of load growth is still high (approximately 10% annually)
- ✓ The installation of plants and grid is slow and inconsistent. It does not meet proposed schedule causing overload and electricity shortage on the power system.
- ✓ Uncertainty of hydro power plant with many constraints in operation and irrigation
- ✓ Limited fuel for electricity generation (coal, gas...)

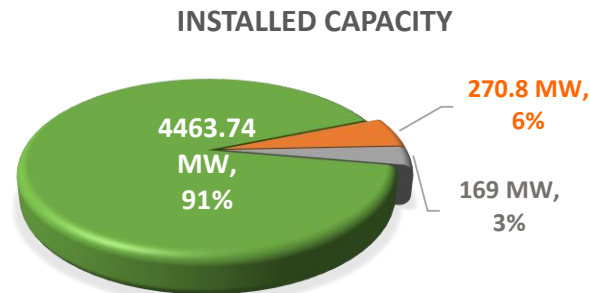
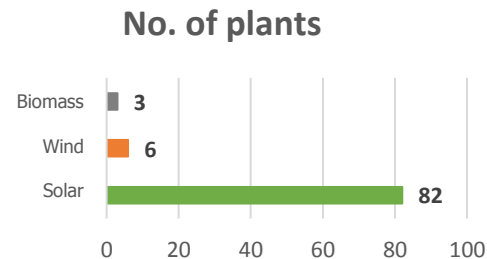
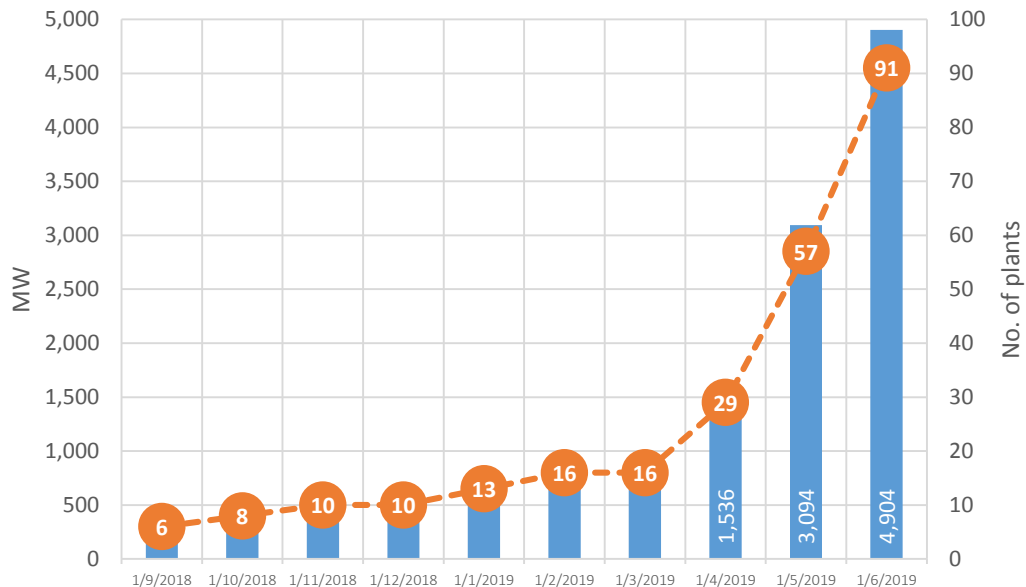
Operational results - System

System Operation difficulty



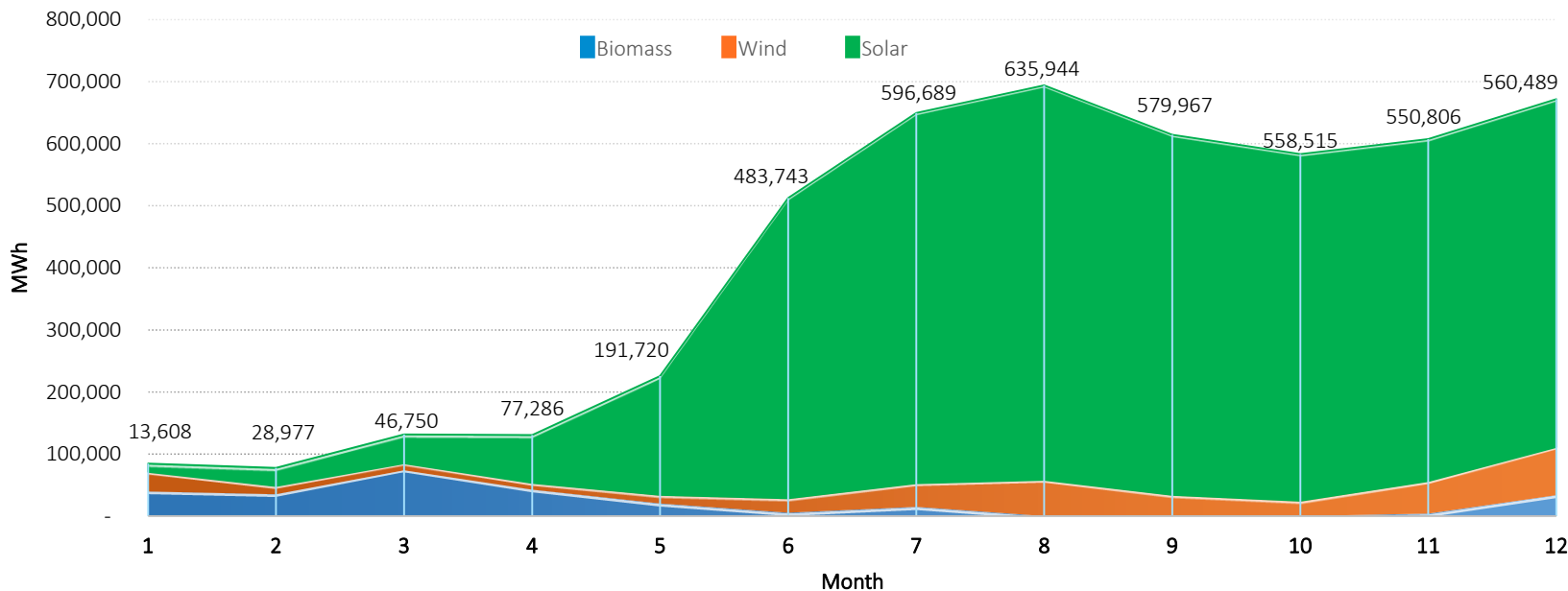
Renewable Energy

- By the end of June 2019, the total number of renewable power plants in operation was 91 (including 82 solar power plants, 06 wind power plants and some other biomass) with a total installed capacity of 4900 MW.

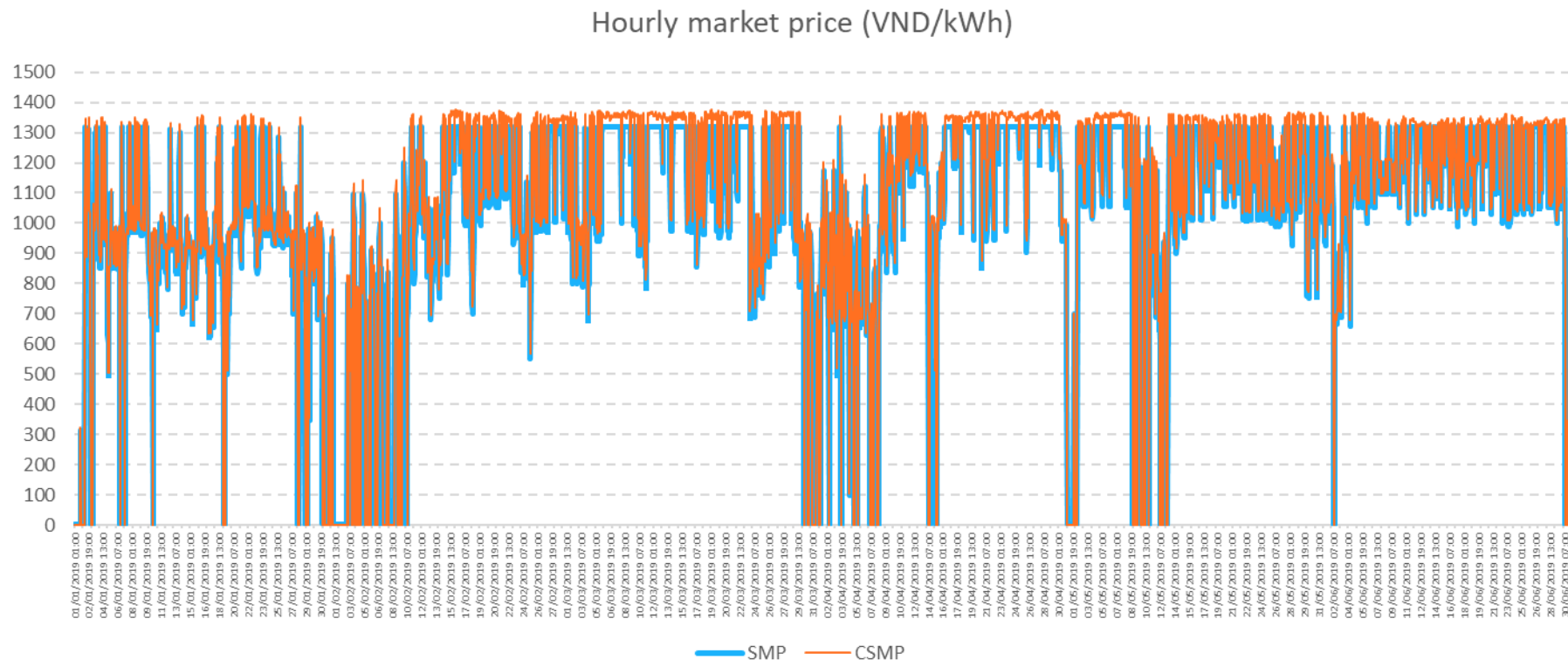


Renewable Energy

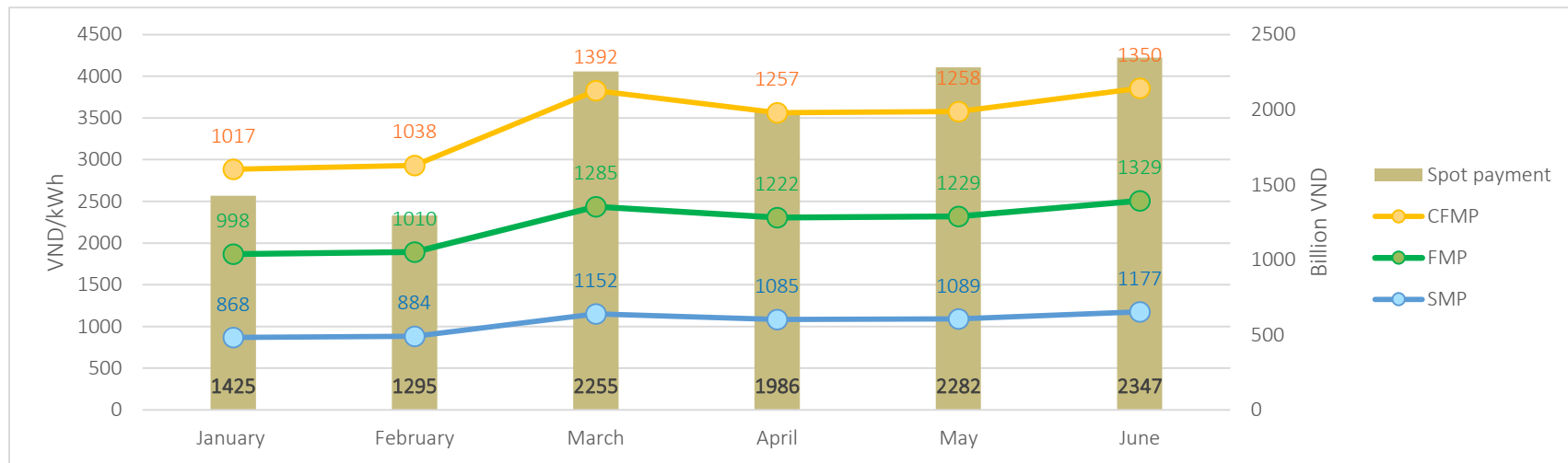
- ❑ The total renewable power production reached about 607 billion kwh (about 20.23 million kwh per day), contributed 2.8 percent of the total power production of national power system.



Operational results – Hourly market Price

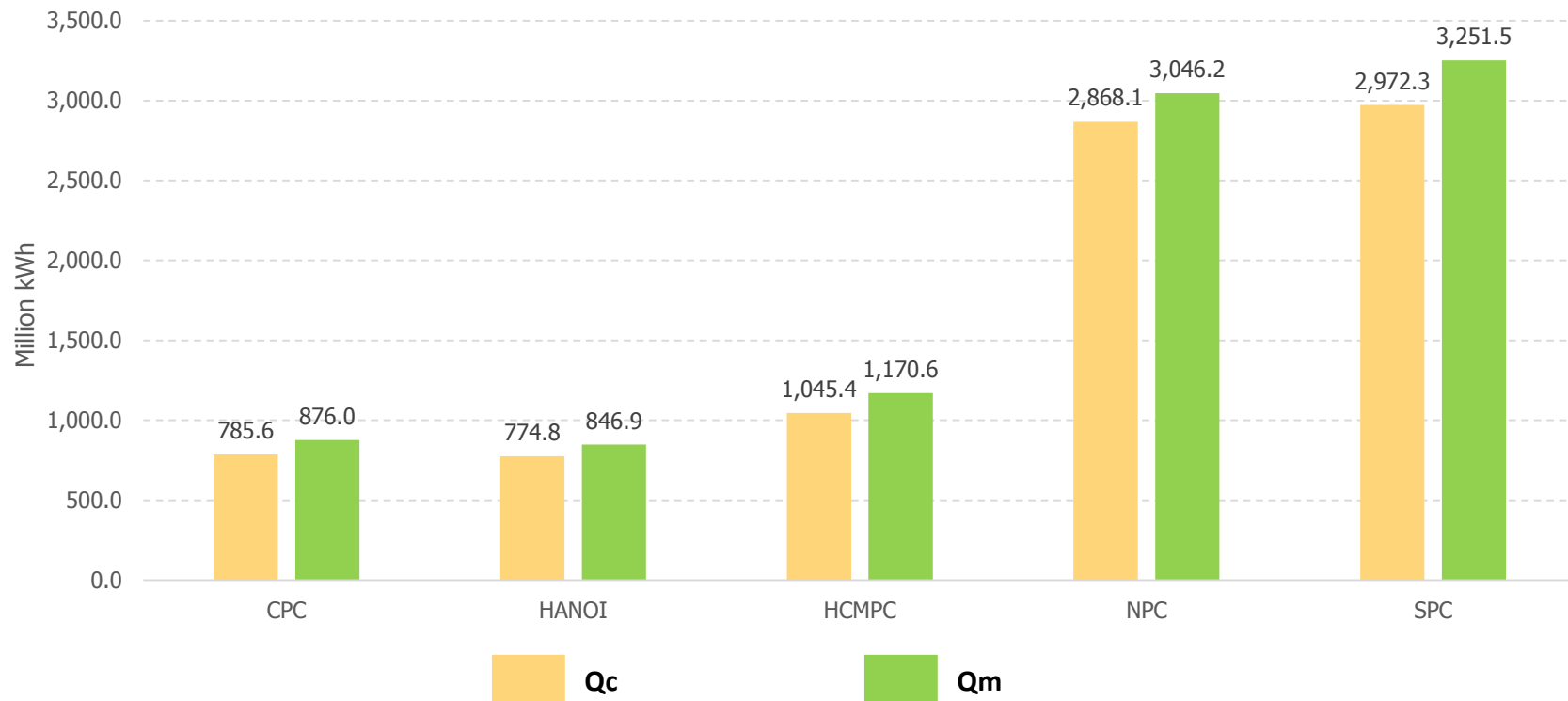


Operational results – Full market Price



Month	SMP (VND/kWh)	CAN (VND/kWh)	No. of hour reach Celling price	FMP (VND/kWh)	CFMP (VND/kWh)	Max thermal bid (VND/kWh)
January	868	130	52	998	1017	1285
February	884	126	172	1010	1038	1345
March	1152	133	423	1285	1392	1345
April	1085	138	312	1222	1257	1347
May	1089	140	311	1229	1258	1394
June	1177	152	331	1329	1350	1418

Contract Quantity (Qc) versus Metered Quantity (Qm)



Operating results

- ❑ The capability of PCs and market participants in the VWEM has been significantly improved
 - ✓ CfD contracts, market settlement mechanism;
 - ✓ Improve knowledge of electrical system operation and skills through training and practical operations.
- ❑ Demand forecasting ability has been developed
 - ✓ The load forecast is noticeably improved, leaving only a few unstable moments due to the large proportion of the residential load, affected by unpredictable factors such as weather, especially in abnormal weather periods.
- ❑ Complete the collection, publication and checking of metered data: with over 99% of accurate data collected by NLDC
- ❑ Information technology infrastructure operates stably, meeting operation requirements

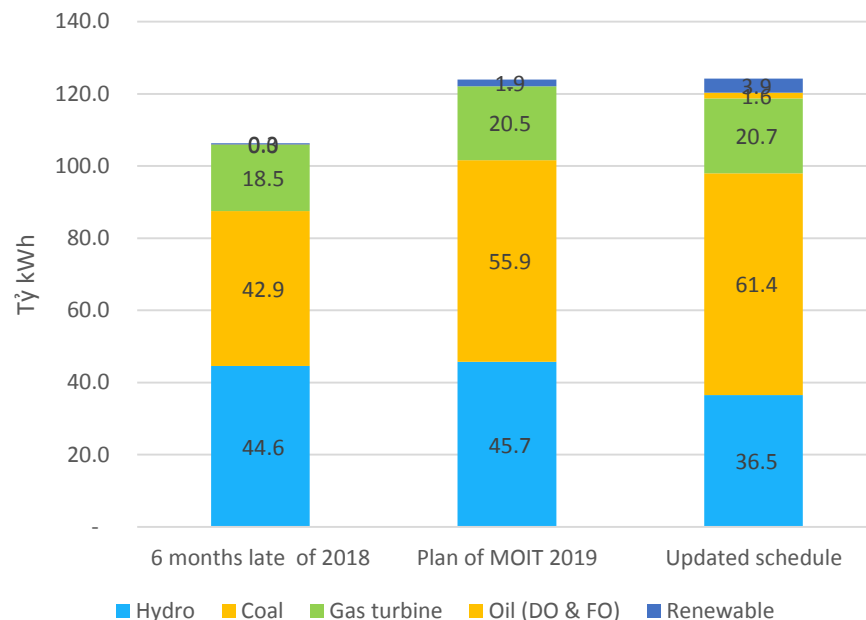
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**VWEM IMPLEMENTATION
IN THE NEXT 6 MONTHS OF 2019**

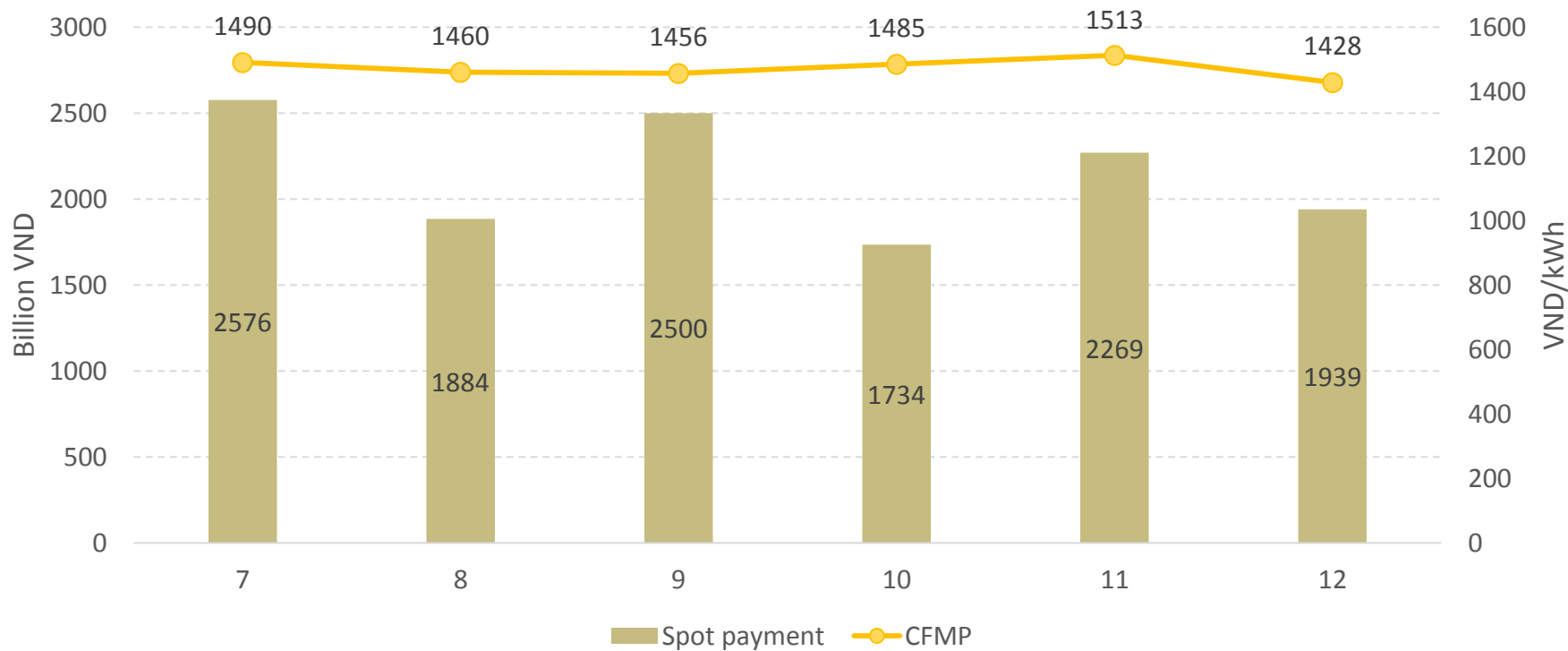


Electricity production for 2nd half of 2019

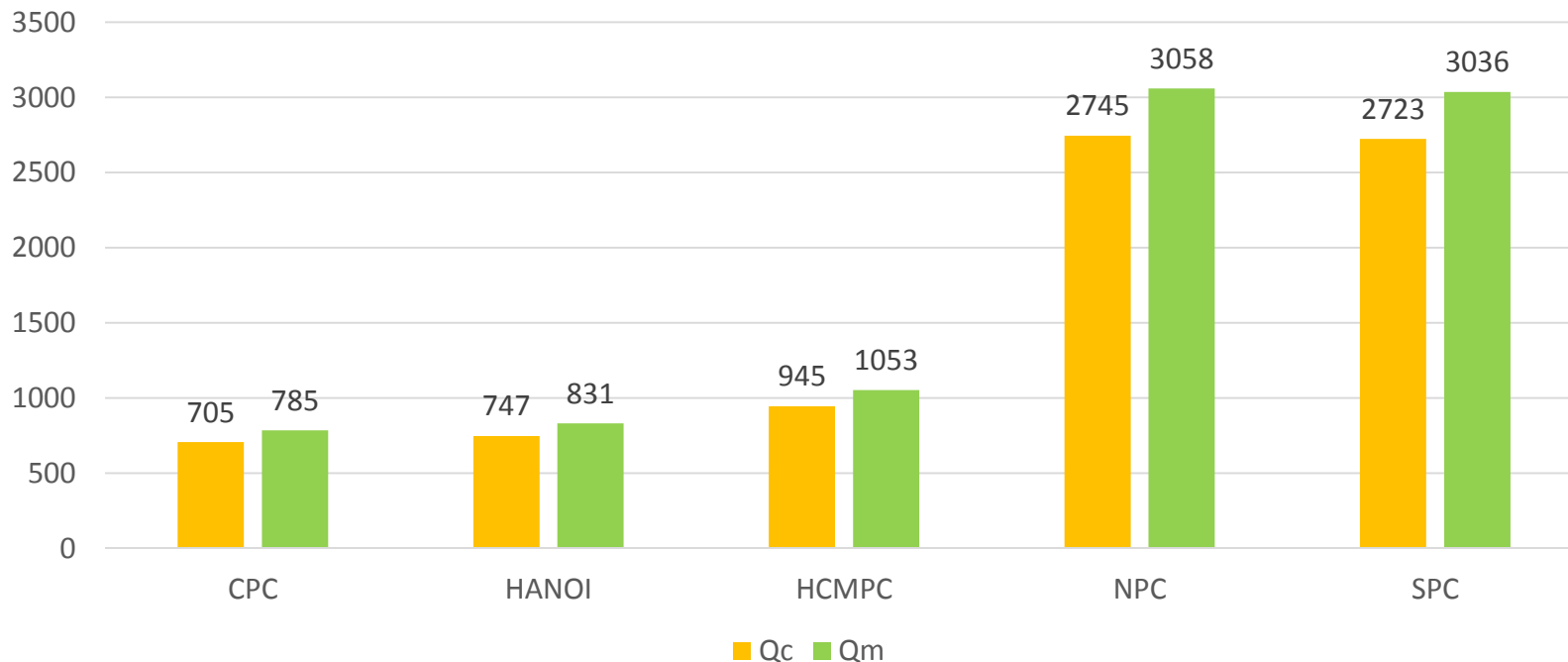
Electricity (bil.kWh)	2 nd half of 2018	Plan of MOIT for 2 nd half of 2019	Updated Schedule
Hydro	44.6	45.7 (3%)	36.5 (-18%)
Coal	42.9	55.9 (30%)	61.4 (43%)
Gas turbine	18.5	20.5 (11%)	20.7 (12%)
Oil (DO & FO)	0.0	-	1.6
Renewable	0.3	1.9 (537%)	3.9 (1232%)
Total	106.3	124.0 (17%)	124.2 (17%)



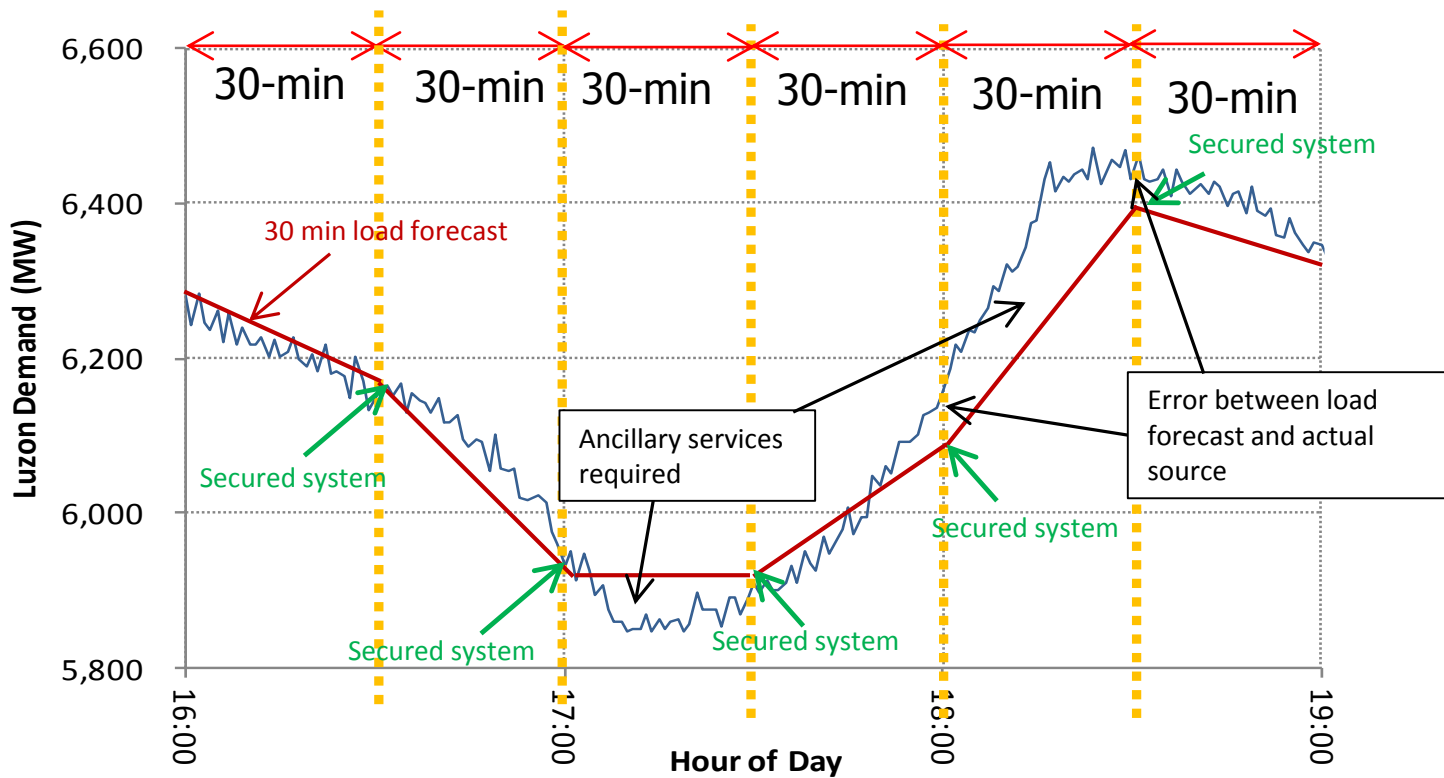
Forecast market price and spot payment

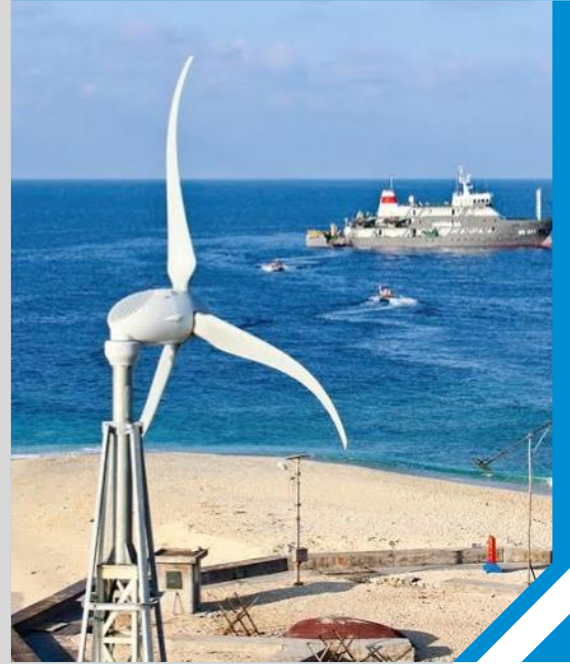


Contract Quantity (Qc) versus Expected Metered Quantity (Qm)



Shorten the trading and dispatching interval from 60 min to 30 min





Thank You!