

PEMC MARKET ASSESSMENT HIGHLIGHTS

• The average demand (including the average reserve schedule), recorded at 10,577 MW for the week, is 15.72% lower than the previous week's 11,549 MW but is higher than the same week last year at 9,140 MW (which marked the second week of the first implementation of Enhanced Community Quarantine (ECQ) in 2020). It is noted that the subject week of 29 Mar – 04 Apr covered the re-implementation of ECQ in NCR plus (Metro Manila plus Bulacan, Cavite, Laguna, and Rizal) which likewise coincided with the Holy Week.

• An average supply margin of 2,400 MW was observed during the period, about 14% higher than the previous week and 38% lower from the same week last year.

• The WESM registered capacity stood at 20,871 MW at the end of the week.

• The outage capacity averaged at 3,216 MW, 65% of which came from coal plants. Sixty-three percent (63%) of the outage capacity were categorized as forced outages.

• The average effective supply during the week was 12,976 MW, lower than both the 13,665 MW of the previous week and the 13,017 MW during the same week last year.

• Despite the ECQ and Holy Week, the average GWAP was on a high level at PHP 3,088/MWh from PHP 2,484/MWh last week, a 24.43% increase. This is also way higher than the PHP 1,734/MWh during the same week last year. This is due to high prices on the first three days (29 - 31 Mar 2021) of the week before the holiday. The average GWAP during these 3 days (29 – 31 Mar 2021) is PHP 4,623/MWh, while the average GWAP from Maundy Thursday to Easter Sunday (01 – 04 Apr 2021) is only PHP 1,724/MWh. These high prices can be explained by the increase in outage capacity. The average outage capacity during the week of 29 Mar – 04 Apr is 3,216 MW, higher than 2,884 MW of the previous week.

• The secondary price cap was not imposed during the week.

• The top 5 participant groups accounted for about 76% of the offered capacity. The Herfindahl-Hirschman Index (HHI) by participant group indicated a moderately concentrated market based on the registered capacity.

• Based on the effective supply, the top 3 pivotal plants during the week were –

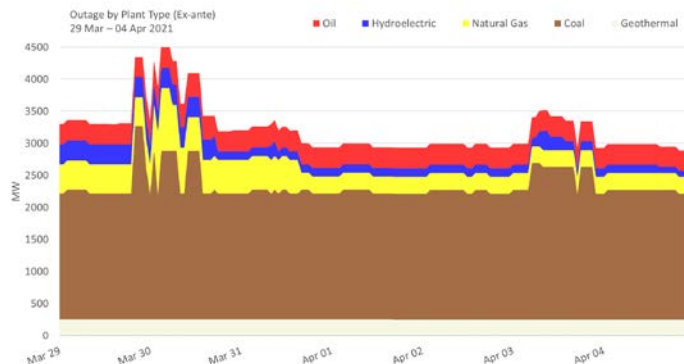
1. Masinloc Coal-Fired Thermal Power Plant (about 6.55% of the time)
2. Ilijan Natural Gas Power Plant (about 3.57% of the time)
3. Sta. Rita Natural Gas Power Plant (about 2.98% of the time)

• The offer pattern analysis shows a decrease in offered quantity of coal and natural gas plants. The average price increased for coal, natural gas, hydroelectric, and oil plants.

IEMOP MARKET SYSTEMS ADVISORY

• No IT-related issue was advised in IEMOP's market systems from 29 Mar –04 Apr 2021.

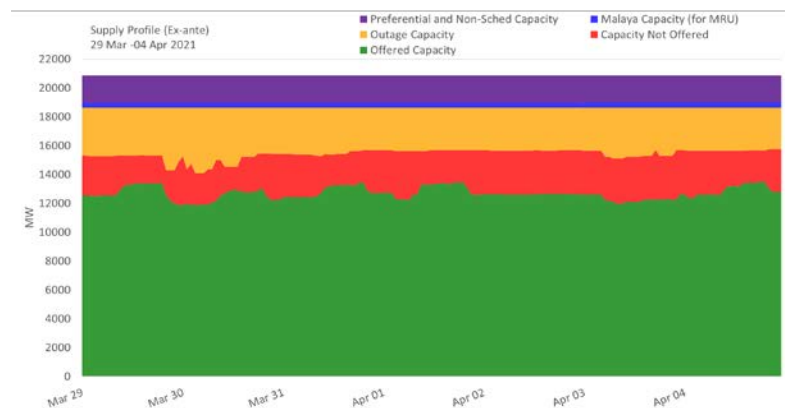
OUTAGE CAPACITY BY PLANT TYPE



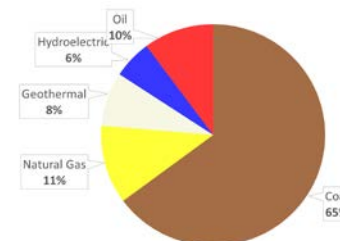
SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		22 Mar–04 Apr 2021	Previous Week (22–28 Mar 2021)	Same Week, Previous Year (23–29 Mar 2020)	Percent Change From	
					Previous Week	Same Week, Previous Year
GWAP (PHP/MWh)	max	26,197.06	10,175.20	2,914.97	157.46%	798.71%
	min.	0.00	0.00	0.00	-	-
	w. ave.	3,088.42	2,483.89	1,734.08	24.34%	78.10%
Effective Supply (MW)	max	14,591.86	15,126.86	14,303.76	-3.54%	2.01%
	min.	11,360.66	12,267.30	12,041.46	-7.39%	-5.65%
	ave.	12,976.40	13,664.70	13,017.44	-5.04%	-0.32%
System Demand (MW)	max	11,896.34	12,186.43	9,190.90	-2.38%	29.44%
	min.	7,072.25	8,457.18	6,740.16	-16.38%	4.93%
	ave.	9,409.10	10,383.04	8,124.33	-9.38%	15.81%
Demand + Reserve Schedule (MW)	max	13,109.24	13,441.81	10,356.00	-2.47%	26.59%
	min.	8,197.35	9,617.38	7,612.56	-14.77%	7.68%
	ave.	10,576.88	11,549.29	9,140.06	-8.42%	15.72%
Supply Margin (MW)	max	3,870.76	3,108.92	4,950.31	24.50%	-21.81%
	min.	133.04	974.56	2,373.06	-86.35%	-94.39%
	ave.	2,399.52	2,115.41	3,877.38	13.43%	-38.11%

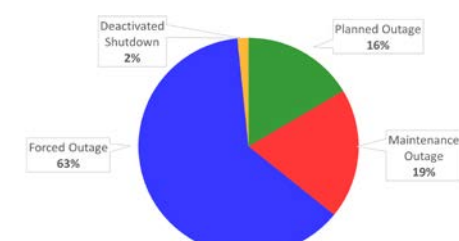
SUPPLY PROFILE



OUTAGE CAPACITY BY PLANT TYPE

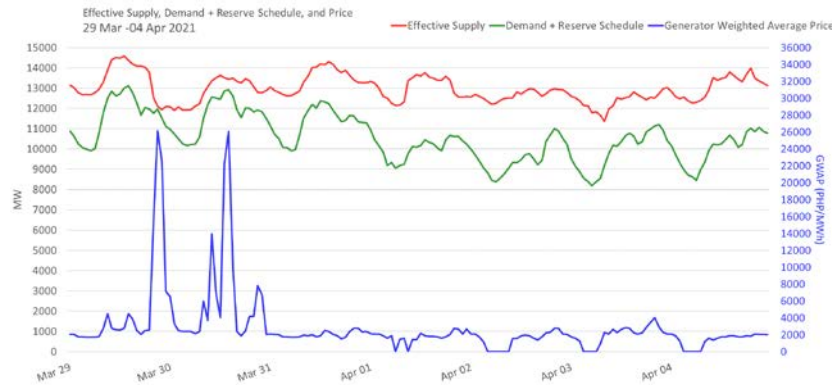


OUTAGE CAPACITY BY OUTAGE CATEGORY

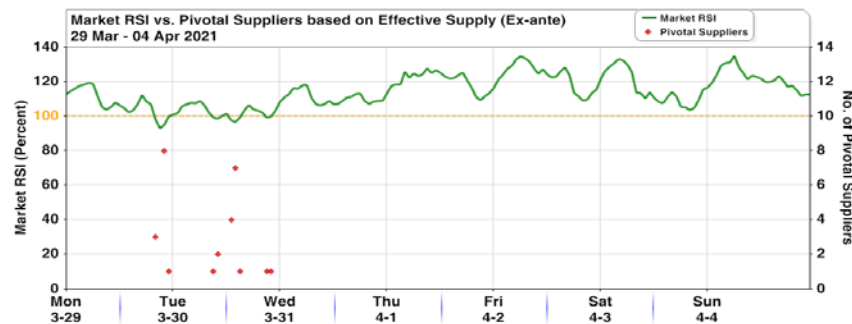




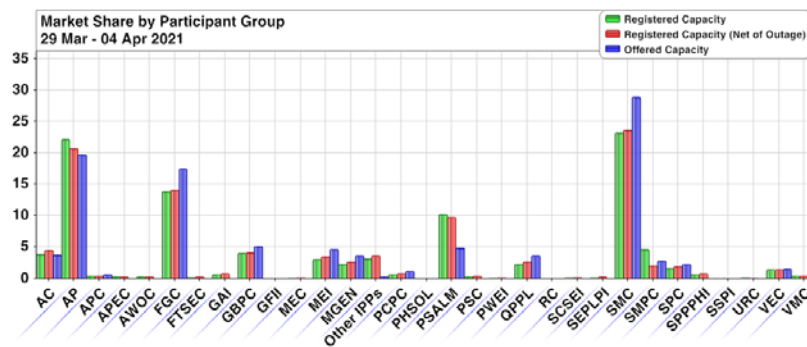
SUPPLY, DEMAND AND PRICE



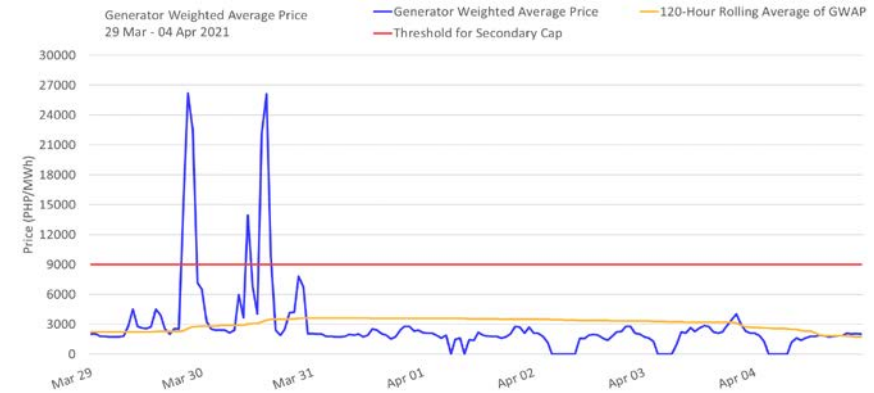
MARKET RSI VS PIVOTAL PLANTS



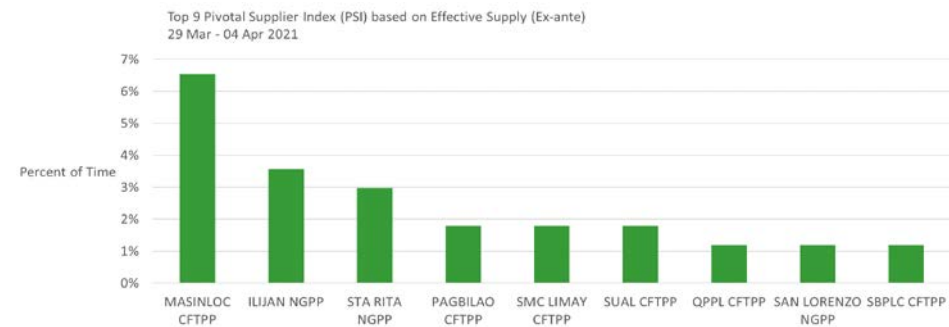
MARKET SHARE



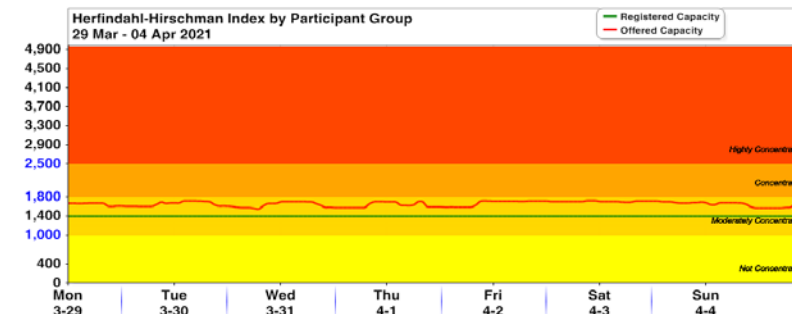
GENERATOR WEIGHTED AVERAGE PRICE



PSI



HERFINDAHL-HIRSCHMAN INDEX



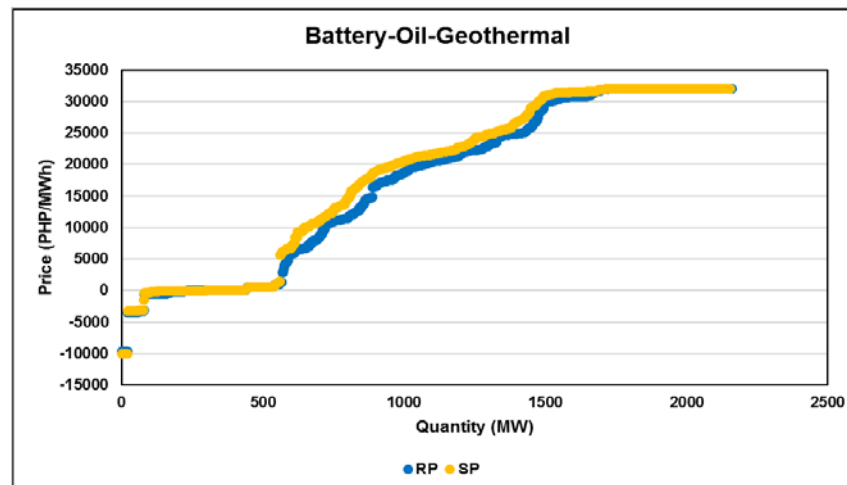
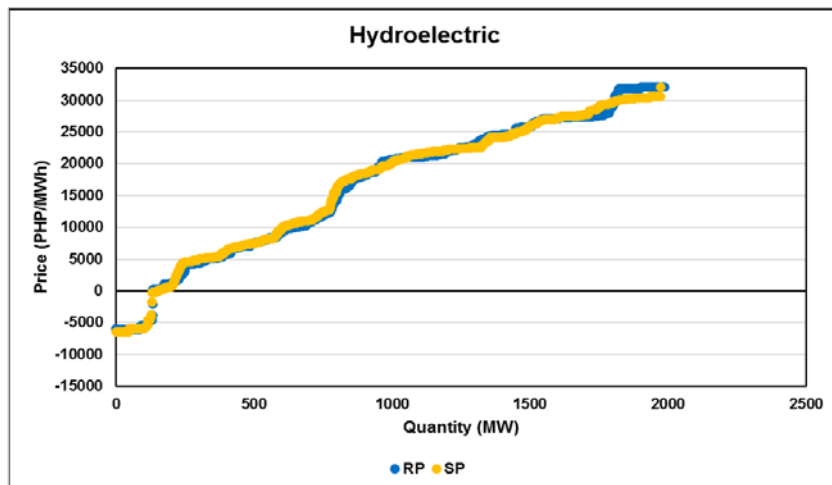
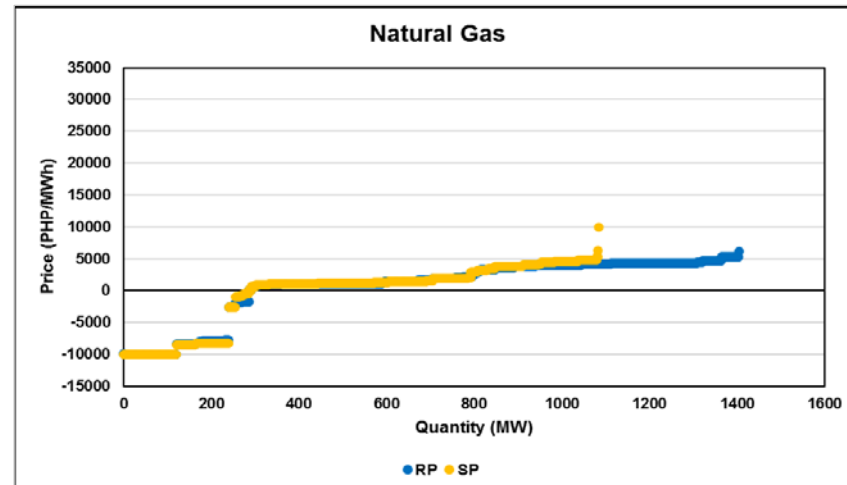
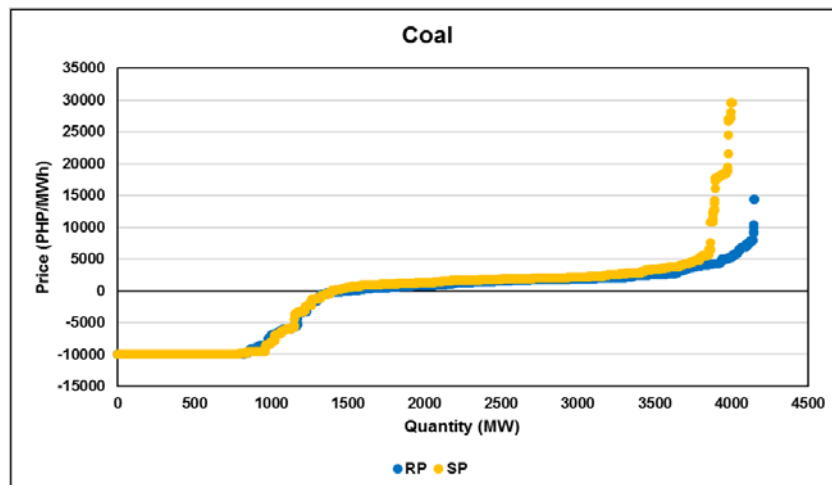
OFFER PATTERN ANALYSIS

Legend

RP: Reference Offer Price – the week of 22–28 Mar 2021 was used as a control for the comparison with the subject price

SP: Subject Offer Price – the week of 29 Mar–04 Apr 2021

Note: Pmin capacities were excluded in this Offer Pattern Analysis.



GLOSSARY OF TERMS

HERFINDAHL-HIRSCHMAN INDEX (HHI) - is a commonly accepted measure of market concentration that takes into account the relative size and distribution of participants in the market. The HHI is a number between 0 and 10,000, which is calculated as the sum of squares of the participant's market share. The HHI approaches zero when the market has very large number of participants with each having a relatively small market share. In contrary, the HHI increases as the number of participants in the market decreases, and the disparity in the market shares among the participants increases. The following are the widely used HHI screening numbers: (1) less than 1,000 - not concentrated; (2) 1,000 to 1,800 - moderately concentrated; (3) greater than 1,800 - concentrated; and (4) greater than 2,500 - highly concentrated.

The HHI is calculated using the (i) registered capacity, (ii) registered capacity net of outage, (iii) offered capacity, (iv) metered quantity, and (v) spot transaction (metered quantity net of bilateral contract declarations).

MARKET RESIDUAL SUPPLY INDEX (Market RSI) - The RSI is a dynamic continuous index measured as ratio of the available generation without a generator to the total generation required to supply the demand. The RSI is measured for each generator. The greater the RSI of a generator, the less will be its potential ability to exercise market power and manipulate prices, as there will be sufficient capacity from the other generators. In contrary, the lower the RSI, the greater the market power of a generator (and its potential benefit of exercising market power), as the market is strongly dependent on its availability to be able to fully supply the demand. In particular, a RSI greater than 100% for a generator means that the remaining generators can cover the demand, and in principle that generator cannot manipulate market price. On the other hand, a RSI less than 100% means that the generator is pivotal in supplying the demand.

The RSI for the whole market (Market RSI) is measured as the lowest RSI among all the generators in the market. A Market RSI less than 100% indicates the presence of pivotal generator/s.

PRICE SETTING FREQUENCY INDEX (PSFI) - A generator trading node is considered as a price setter when its last accepted offer price is between 95% to 100% of its nodal price. A generating plant is considered as price setter if at least one of its trading nodes was price setter in a given trading hour. The price setters are determined from: (i) ex-ante for trading intervals without pricing error during ex-ante, (ii) ex-post with pricing error during ex-ante but without pricing error during ex-post, (iii) market re-run results for trading intervals with pricing error both in ex-ante and ex-post, and (iv) trading intervals where the price substitution methodology (PSM) was applied. For trading intervals affected by PSM, the unconstrained marginal plants are considered price setters. Further, in instances of regional price separation, price setters are determined separately for each region.

MARKET SHARE - The fraction of the total capacity or energy that a company or related group owns or controls in the market.

PIVOTAL SUPPLIER INDEX (PSI) - The pivotal supplier index is a binary variable (1 for pivotal and 0 for not pivotal) for each generator. The index identifies whether a generator is pivotal in supplying the demand. The PSI is calculated as the percentage of time that a generator is pivotal in a period (i.e. monthly).

CAPACITY FACTOR - The index assesses the performance of the generators in the market. A high capacity factor indicates the high utilization of the generators.

CAPACITY PROFILE - The hourly factors affecting supply, which include, among others, the offered capacity, outage capacity and ancillary services schedule.

MAJOR PARTICIPANT GROUP - The grouping of generators by ownership or control.

REGISTERED CAPACITY - The capacity registered by a generator with WESM.

REGISTERED CAPACITY (NET OF OUTAGE) - The capacity registered by a generator with WESM less capacity on outage.

OFFERED CAPACITY - The hourly offer to supply electricity submitted by a generator.

METERED QUANTITY - The hourly quantity of electricity generated by a generator.

SPOT TRANSACTION - The hourly quantity of electricity sold to the market by a generator net of bilateral contract declaration accounted for in the settlement.

ANCILLARY SERVICES SCHEDULES - The hourly quantity scheduled by the System Operator to provide regulating, contingency and dispatchable reserves.

EFFECTIVE SUPPLY - The hourly effective supply is equal to the offered capacity of all scheduled generator resources, nominated loading level of non-scheduled generating units and projected output of preferential dispatch generating units, adjusted for any security limit provided by the System Operator and other constraints considered during MMS simulation such as generator offered ramp rates. Scheduled output of plants on testing and commissioning through the imposition of security limit by SO and scheduled output of Malaya plant when it is called to run as Must Run Unit (MRU) are likewise accounted for in the effective supply.

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