

PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 13,638 MW during the week of 15 - 21 Apr 2024, was higher than the previous week at 12,949 MW and higher than the same week last year at 12,765 MW.
- The average effective supply during the week was 13,955 MW, higher than the 13,506 MW of the previous week and higher than the 13,323 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
 - The capacity on outage averaged at 3,507 MW, higher than last week's 2,833 MW. In terms of capacity on outage by plant type, about 46% of the 3,507 MW involved Coal Plants, while in terms of category, about 75% were Forced Outages.
- As a result, an average supply margin of 317 MW was observed during the week, which is lower by about 42.958% relative to the previous week and lower by about 43.12% in comparison with the same week last year. The supply deficit based on MMS solution was 53.99 MW on 16 April 2024 18:30h. The average supply margin was 272.22 MW at peak intervals and 351.5 MW at off-peak intervals.
- Correspondingly, the average GWAP was recorded at PHP 8,510/MWh from PHP 6,283/MWh last week. This is lower than the PHP8,631/MWh during the same week last year.
 - The secondary price cap was imposed during 557 intervals out of the 2,016 intervals of the week (about 28% of the time).
- The top 5 participant groups accounted for about 79% of the offered capacity. The Herfindahl-Hirschman Index (HHI) by participant group indicated partially concentrated and moderately concentrated market based on the offered and registered capacities, respectively.
- The top 5 pivotal plants during the week were –
 1. GNP DINGININ CFTPP (about 99.75% of the time)
 2. STA RITA NGPP (about 99.6% of the time)
 3. SUAL CFTPP (about 99.5% of the time)
 4. MARIVELES CFTPP (about 99.5% of the time)
 5. SAN LORENZO NGPP (about 99.26% of the time)
- Based on the MMS Solution, the top 5 congested equipment during the week were –
 1. 138kV Maasin-Ubay Line 1 (about 32.4% of the time)
 2. 230kV Bauang-BPPC Line1 (about 24.5% of the time)
 3. 138kV Samboan-Amlan Line1 (about 20.4% of the time)
 4. 230kV Mexico-Hermosa Line2 (about 15.3% of the time)
 5. 230kV Mexico-Hermosa Line1 (about 12.5% of the time)

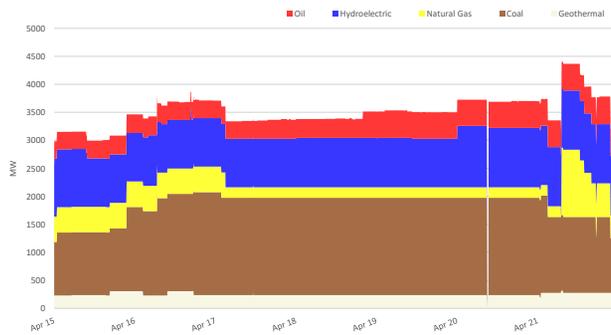
OFFER PATTERN ANALYSIS

- The offered capacity of coal plants was lower than previous week due to increase in outages and simultaneous testing of coal plants scheduled thru security limits imposed by the Systems Operator.
- The offered capacity of the hydro plants was lower than the previous week due to increase in outages. Moreover, from April 16 to 20, the observed capacity around 100 to 250 MW were offered at prices ranging from Php 30,000/MWh to Php 32,000/MWh.
- The offered capacity in Natural gas plants was higher than the previous week due to the resumption of generation, however a sudden decrease in offered capacity on April 21 was caused by forced outage in Ilijan.
- The lowest Solar Plant nomination was recorded on April 15, while the highest was recorded on April 20.
- The lowest nomination for Wind Plants was recorded on April 20, while the highest was on April 16.

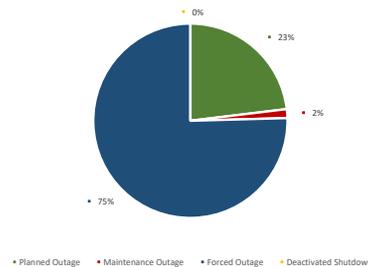
IEMOP MARKET SYSTEMS ADVISORY

- On 16 April 2024, SO initiated Market Intervention for the Luzon Region from 16:20h to 17:35h due to generation deficiency, MLD was implemented.
- On 20 April 2024, MO initiated Market Intervention from 09:05h to 09:20h due to power flow divergence resulting from the islanding of the Buenavista substation.

CAPACITY ON OUTAGE BY PLANT TYPE



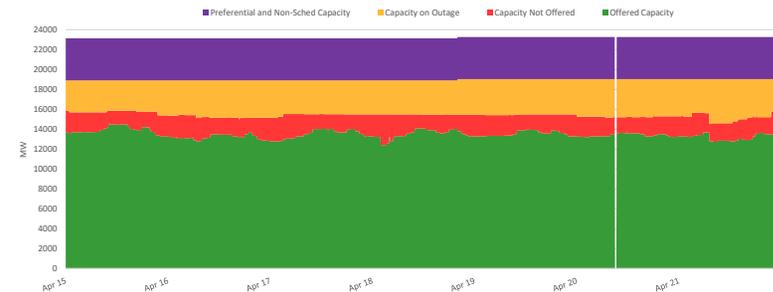
CAPACITY ON OUTAGE BY OUTAGE CATEGORY



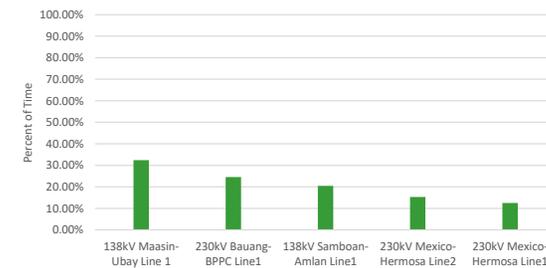
SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars	15 - 21 Apr 2024	Previous Week (08 - 14 Apr 2024)	Same Week, Previous Year (17 - 23 Apr 2023)	Percent Change From		
				Previous Week	Same Week, Prev Year	
GWAP (PHP/MWh)	max	38,812.765	32,792.560	33,112.363	18.358%	17.215%
	min	-840.166	-163.460	-9,587.808	-413.989%	91.237%
	ave	8,510.036	6,282.714	8,631.196	35.452%	-1.404%
Effective Supply (MW)	max	16,509.968	16,342.545	15,545.058	1.024%	6.207%
	min	11,275.874	10,871.259	10,855.994	3.722%	3.868%
	ave	13,955.347	13,505.865	13,323.080	3.328%	4.746%
System Demand (MW)	max	15,717.060	15,068.600	14,548.040	4.303%	8.036%
	min	10,506.100	9,599.150	9,675.430	9.448%	8.585%
	ave	13,215.508	12,373.102	12,185.445	6.808%	8.453%
Demand + Reserve Schedule (MW)	max	16,300.250	15,850.730	15,214.040	2.836%	7.140%
	min	11,096.050	10,209.220	10,122.430	8.687%	9.618%
	ave	13,637.980	12,949.493	12,765.117	5.317%	6.838%
Supply Margin (MW)	max	858.462	1,059.572	1,014.402	-18.980%	-15.373%
	min	-53.991	110.540	-8.992	-148.843%	-500.434%
	ave	317.368	556.372	557.963	-42.958%	-43.120%

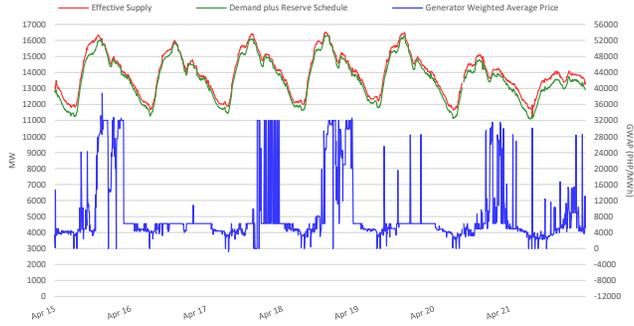
CAPACITY PROFILE



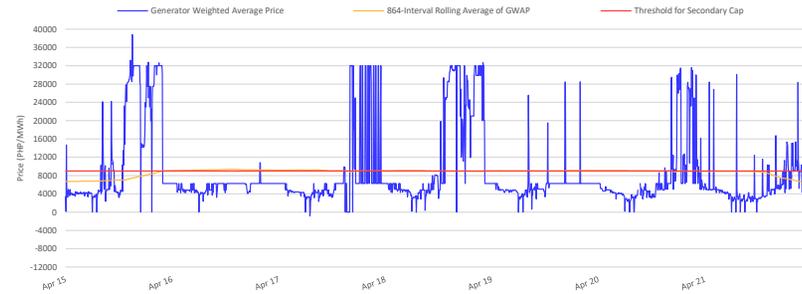
RTD CONGESTION



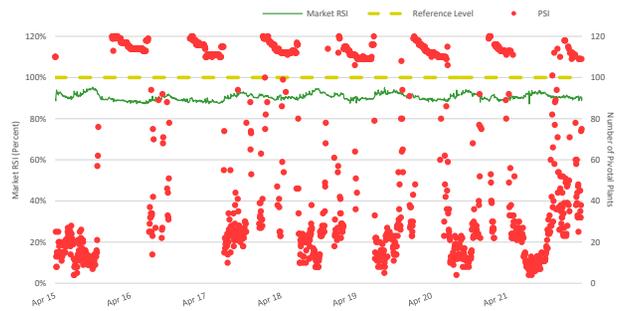
SUPPLY, DEMAND AND PRICE



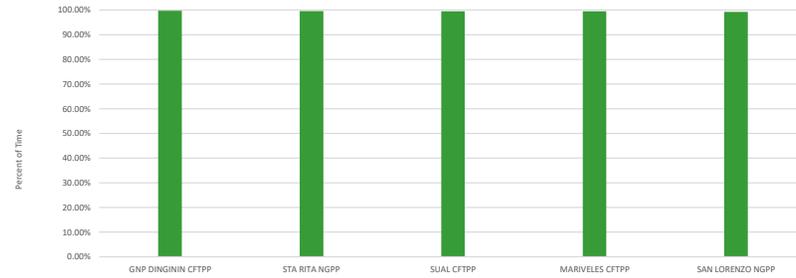
GENERATOR WEIGHTED AVERAGE PRICE



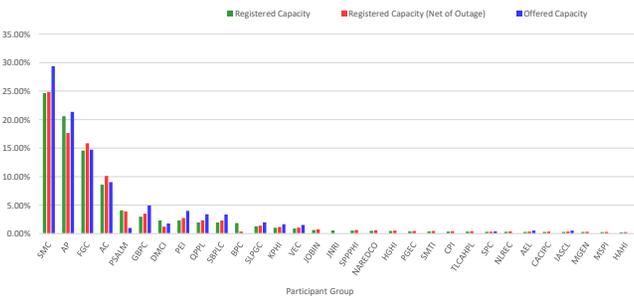
MARKET RSI VS PIVOTAL PLANTS



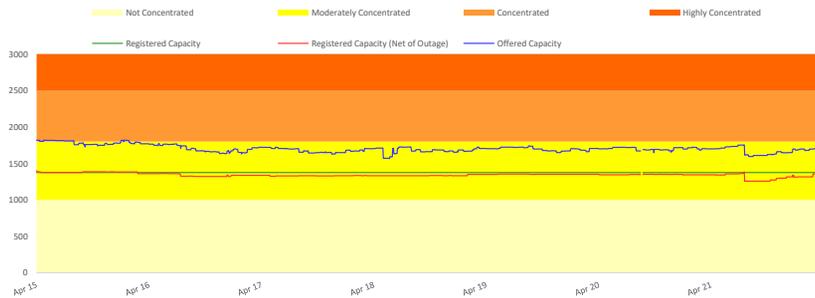
PSI



MARKET SHARE



HERFINDAHL-HIRSCHMAN INDEX

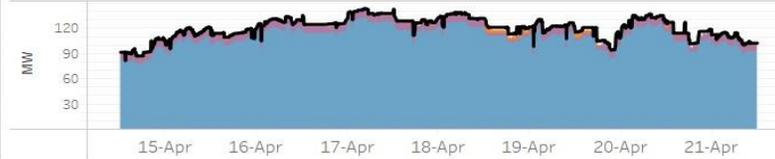


OFFER PATTERN ANALYSIS

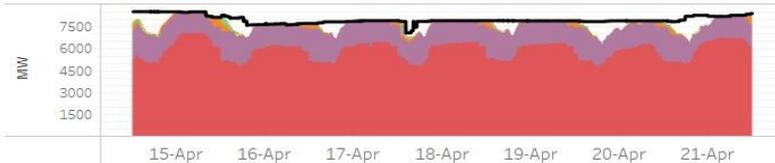
BATTERY



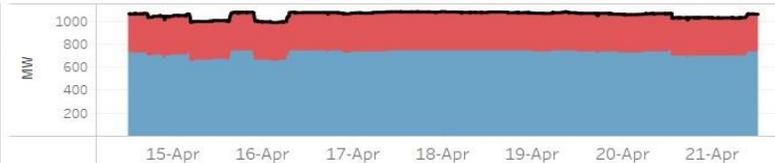
BIOFUEL



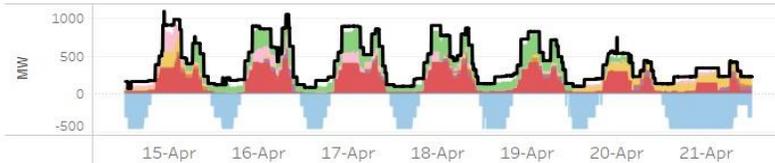
COAL



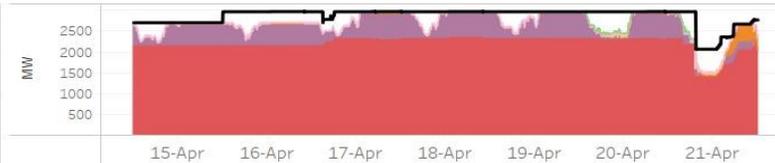
GEOHERMAL



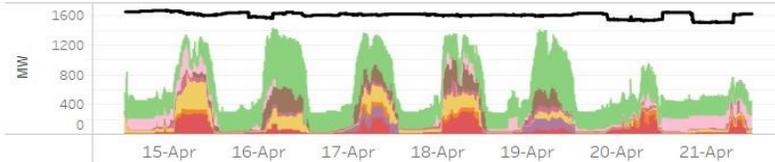
HYDRO



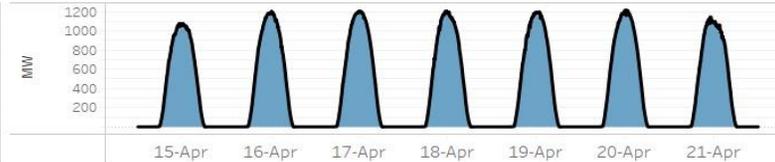
NATURAL GAS



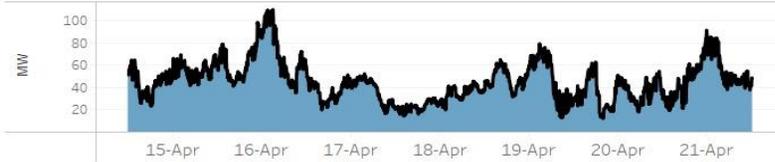
OIL-BASED



SOLAR



WIND



Notes:
1. In Php (X, Y], it includes offer price greater than Php X but less than or equal to Php Y.
2. Reflected capacity includes offered capacity of all scheduled generators, nominated loading level of nonscheduled generators and projected output of preferential dispatch generators adjusted based on submitted ramp rate limitations.

GLOSSARY OF TERMS

EFFECTIVE SUPPLY - The 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.

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.

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

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

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).

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.

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 offer to supply electricity submitted by a generator.

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