

PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 12,293 MW during the week of 26 Feb to 03 Mar 2024, was lower than the previous week at 12,530 MW and higher than the same week last year at 11,039 MW.
- The average effective supply during the week was 12,778 MW, lower than the 13,007 MW of the previous week and higher than the 11,682 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
 - The capacity on outage averaged at 3,985 MW, higher than last week's 3,237 MW. In terms of capacity on outage by plant type, about 48% of the 3,985 MW involved Coal Plants, while in terms of category, about 59% were Planned Outages.
- As a result, an average supply margin of 485 MW was observed during the week, which is higher by about 2% relative to the previous week and lower by about 24.673% in comparison with the same week last year. The supply deficit based on MMS solution was 184.55 MW on 01 March 2024 19:15h. The average supply margin was 468.4 MW at peak intervals and 497.19 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 5,703/MWh from PHP 6,199/MWh last week. This is lower than the PHP5,384/MWh during the same week last year. Administered Prices were used in Visayas region during the System Operator (SO) initiated market intervention from 19:00h on March 01 to 00:30h on 02 March 2024. Note: intervals with missing GWAPs on the graphs were declared as pricing errors.
 - The secondary price cap was imposed during 38 intervals out of the 2,016 intervals of the week (about 2% 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 concentrated and moderately concentrated market based on the offered and registered capacities, respectively.
- The top 5 pivotal plants during the week were –
 - MASINLOC CFTPP (about 100.% of the time)
 - GNP DINGININ CFTPP (about 100.% of the time)
 - SUAL CFTPP (about 99.95% of the time)
 - STA RITA NGPP (about 99.9% of the time)
 - SMC LIMAY CFTPP (about 98.02% of the time)
- Based on the MMS Solution, the top 5 congested equipment during the week were –
 - 138kV Samboan-Amlan Line1 (about 8.6% of the time)
 - 230kV Bauang-Latrinidad Line1 (about 6.% of the time)
 - 230kV Bauang-Latrinidad Line2 (about 4.9% of the time)
 - 138kV Maasin-Ubay Line 1 (about 1.5% of the time)
 - 230kV Bauang-BPPC Line1 (0.3% of the time)

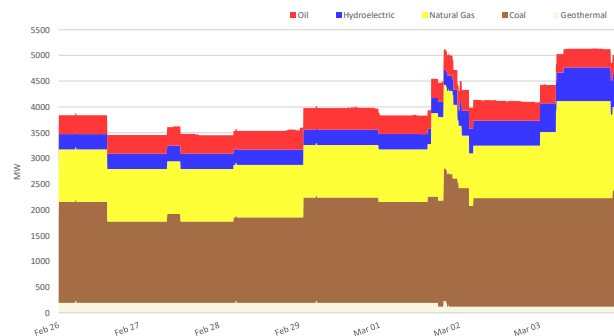
OPA ANALYSIS

- The offered capacities of coal plants were lower than the previous week due to the increase in capacity outages. There was an observed sudden decrease in offered capacity during the evening peak of March 01 due to simultaneous forced outages of the plants in both regions
- The capacity offered by the hydro plants was lower than the previous week due to increased outages. Particularly, on March 02 and 03, the observed capacity, ranging from 450MW to 500MW, was offered at prices ranging from Php 30,000/MWh to Php 32,000/MWh
- Natural gas plants experienced a decrease in offered capacity due to higher outages compared to the previous week. The observed sudden decrease of offered capacity on March 01 and 03 was due to an increase in the capacity on forced outage of the plant.
- The lowest Solar Plant nomination was recorded on February 29, while the highest was recorded on March 01.
- The lowest nomination for Wind Plants was recorded on March 01, while the highest was on February 26.

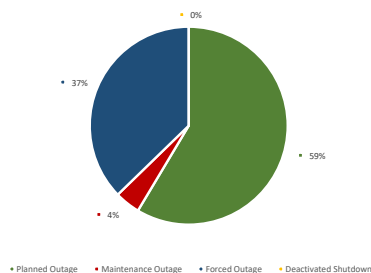
IEMOP MARKET SYSTEMS ADVISORY

- SO initiated Market Intervention from 19:00h on March 01 to 00:30h on March 02, 2024 in Visayas region due to a partial blackout at Panay sub-grid.

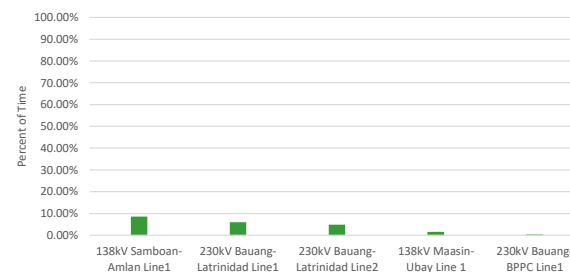
CAPACITY ON OUTAGE BY PLANT TYPE



CAPACITY ON OUTAGE BY OUTAGE CATEGORY



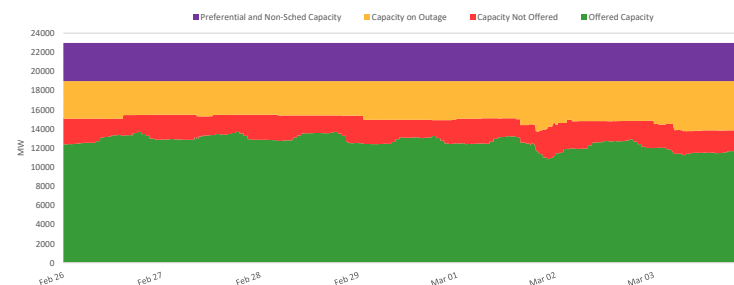
RTD CONGESTION



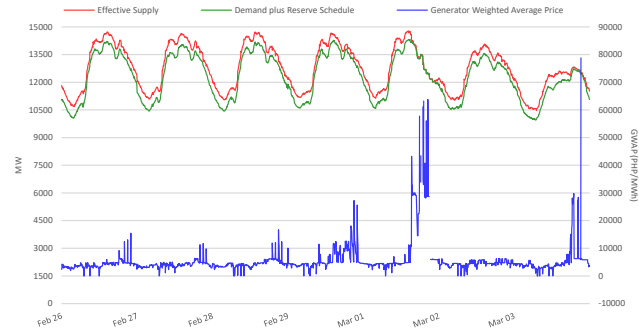
SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		26 Feb -03 Mar 2024	Previous Week (19 - 25 Feb 2024)	Same Week, Previous Year (27 Feb- 05 Mar 2023)	Percent Change From	
					Previous Week	Same Week, Prev Year
GWAP (PHP/MWh)	max	78,804.458	39,544.233	22,249.316	99.28%	254.19%
	min	-0.012	-0.982	-995.093	98.81%	100.00%
	ave	5,703.293	6,198.944	5,384.123	-8.00%	5.93%
Effective Supply (MW)	max	14,785.686	15,230.334	13,807.638	-2.92%	7.08%
	min	10,474.914	10,690.477	9,550.805	-2.02%	9.68%
	ave	12,777.889	13,007.491	11,682.301	-1.77%	9.38%
System Demand (MW)	max	13,023.560	13,474.910	12,065.900	-3.35%	7.94%
	min	8,976.180	9,110.970	8,127.340	-1.48%	10.44%
	ave	11,052.783	11,387.807	10,015.337	-2.94%	10.36%
Demand + Reserve Schedule (MW)	max	14,329.850	14,860.220	13,290.830	-3.57%	7.82%
	min	9,946.650	10,033.790	8,833.300	-0.87%	12.60%
	ave	12,293.381	12,530.417	11,039.096	-1.89%	11.36%
Supply Margin (MW)	max	876.849	815.409	1,177.609	7.53%	-25.54%
	min	-184.554	-0.860	300.112	-21.1%	-161.50%
	ave	484.508	477.074	643.205	1.56%	-24.67%

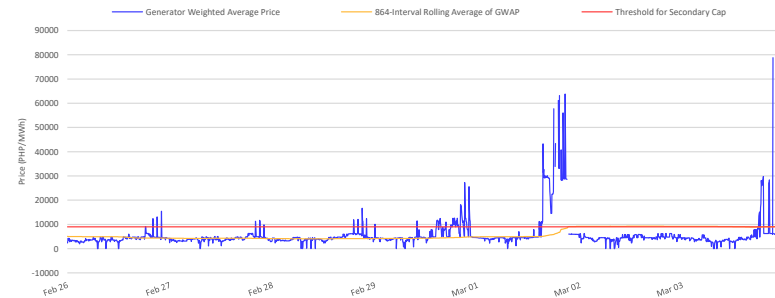
CAPACITY PROFILE



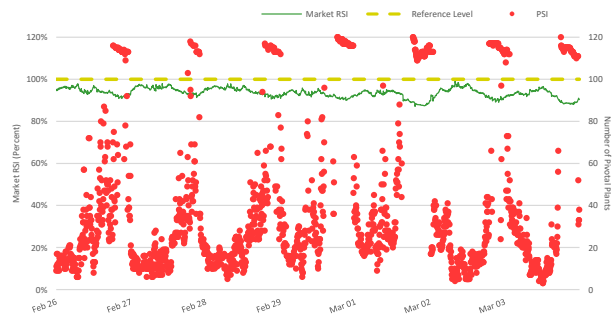
SUPPLY, DEMAND AND PRICE



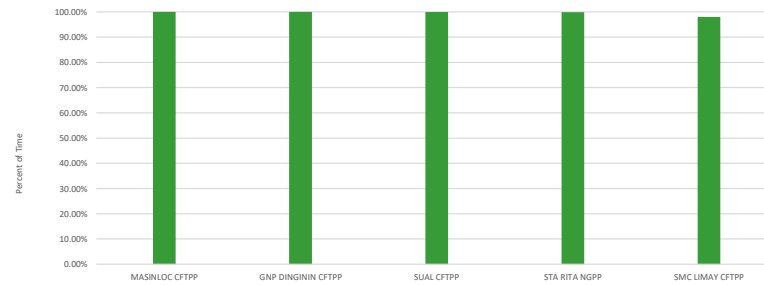
GENERATOR WEIGHTED AVERAGE PRICE



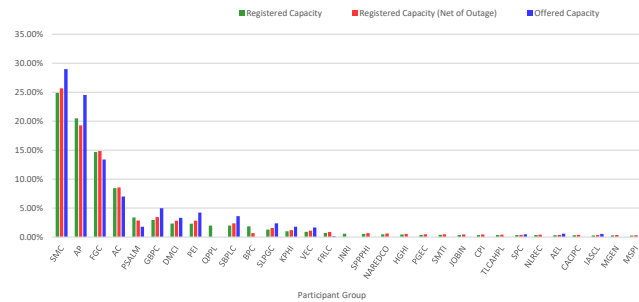
MARKET RSI VS PIVOTAL PLANTS



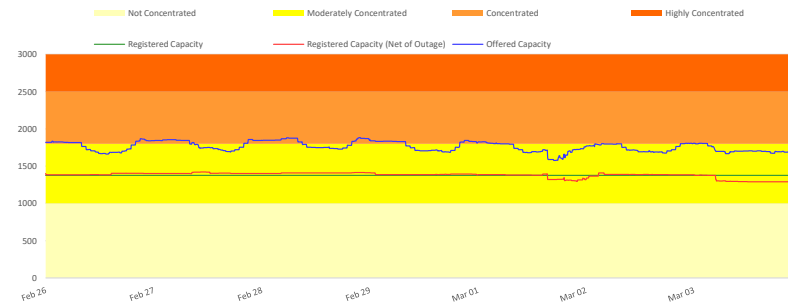
PSI



MARKET SHARE

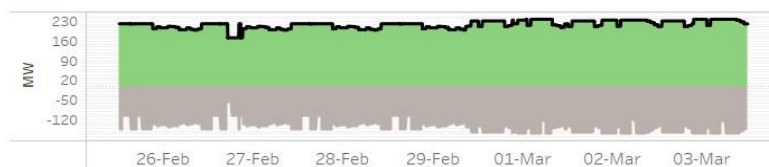


HERFINDAHL-HIRSCHMAN INDEX

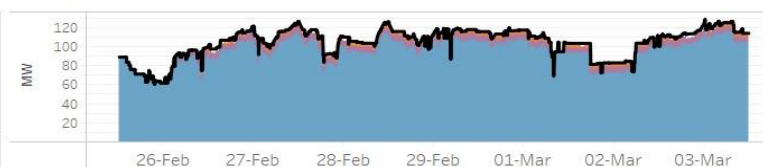


OFFER PATTERN ANALYSIS

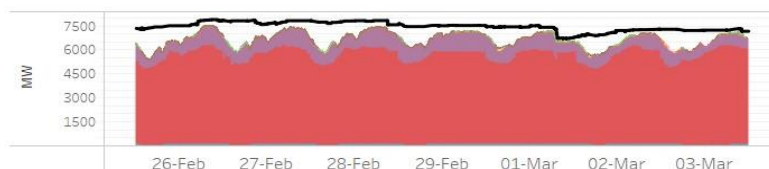
BATTERY



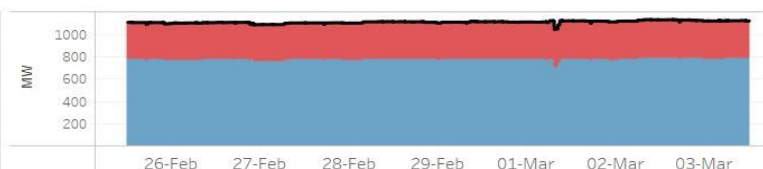
BIOFUEL



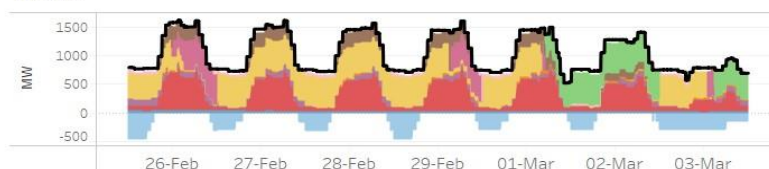
COAL



GEOTHERMAL



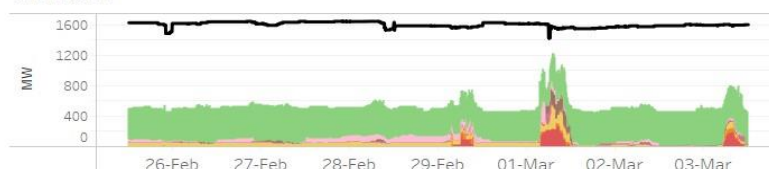
HYDRO



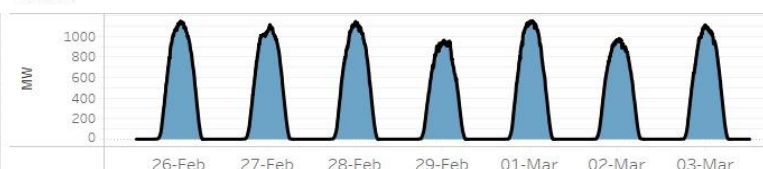
NATURAL GAS



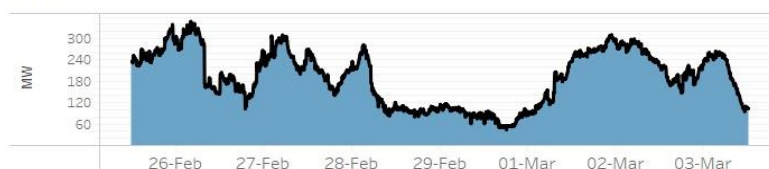
OIL-BASED



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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