

PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 11,702 MW during the week of 10 - 16 Jul 2023, was lower than the previous week at 12,718 MW and lower than the same week last year at 12,086 MW.
- The average effective supply during the week was 12,471 MW, lower than the 13,470 MW of the previous week and lower than the 12,505 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
 - The capacity on outage averaged 2,530 MW, higher than last week's 1,676 MW. About 46% of the 2,530 MW involved Coal plants, while in terms of category, about 45% were Forced Outages.
- As a result, an average supply margin of 768 MW was observed during the week, which is higher by about 2% relative to the previous week and higher by about 83% in comparison with the same week last year. The minimum supply margin based on MMS solution was 4.05 MW on 11 July 2023 13:35. The average supply margin was 588.13 MW at peak intervals and 910.19 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 5,818/MWh from PHP 7,187/MWh last week. This is also lower than the PHP8,815/MWh during the same week last year.
 - The secondary price cap was imposed during 163 intervals out of the 2,016 intervals of the week (about 8% of the time).
- The top 5 participant groups accounted for about 75% of the offered capacity. The Herfindahl-Hirschman Index (HHI) by participant group indicated moderately concentrated market based on the offered and registered capacities.
- The top 5 pivotal plants during the week were –
 - GNP DINGININ CFTPP (about 95.39% of the time)
 - STA RITA NGPP (about 54.81% of the time)
 - SUAL CFTPP (about 38.1% of the time)
 - MARIVELES CFTPP (about 28.03% of the time)
 - SMC LIMAY CFTPP (about 26.59% of the time)

Based on the MMS Solution, the top 5 congested equipment during the week were –

- 138kV Maasin_Ubay (about 48.8% of the time)
- 138kV Coton_Cebu Line 2 (about 1.8% of the time)
- 138kV Coton_Cebu Line 3 (about 1.6% of the time)
- Magat_Transformer 5 (0.64% of the time)
- Makban-A_Transformer 2 (0.5% of the time)

Coal plants recorded lower offered capacity following the outages of Masinloc CFTPP Unit 2 and Sual CFTPP Unit 1. On the other hand, natural gas plants recorded higher offered capacity after the synchronization of Ilijan NGPP Block B. Lastly, oil-based plants and battery recorded slightly lower offered capacity while geothermal and hydro plants have no significant changes with their offer pattern.

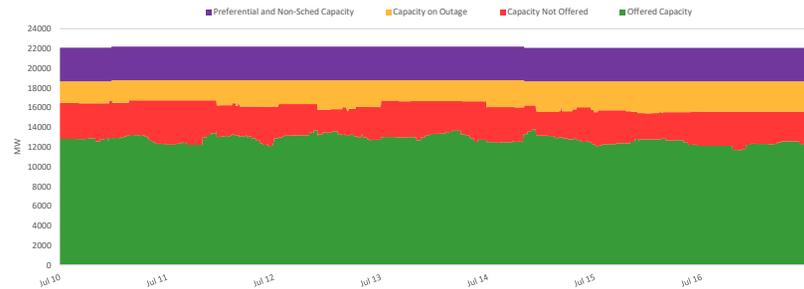
IEMOP MARKET SYSTEMS ADVISORY

- No IT-related issue was advised in IEMOP's market systems from 10 - 16 Jul 2023.

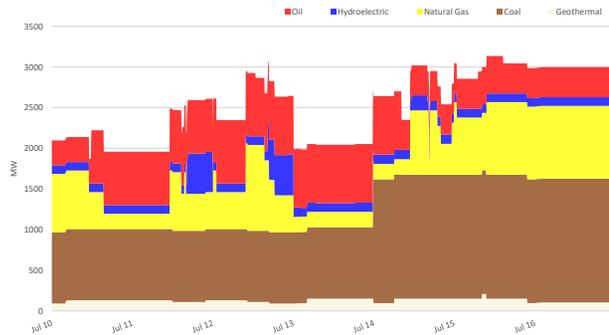
SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars	10 - 16 Jul 2023	Previous Week (03 - 09 Jul 2023)	Same Week, Previous Year (11 - 17 Jul 2022)	Percent Change From		
				Previous Week	Same Week, Prev Year	
GWAP (PHP/MWh)	max	33,921.588	33,538.002	34,297.854	1.144%	-1.097%
	min	-9,521.852	-1.023	-844.440	-930k%	-1,027.594%
	ave	5,817.549	7,186.591	8,815.239	-19.050%	-34.006%
Effective Supply (MW)	max	14,936.996	15,701.458	14,339.191	-4.869%	4.169%
	min	9,922.710	10,980.572	10,395.058	-9.634%	-4.544%
	ave	12,470.690	13,469.573	12,504.739	-7.416%	-0.272%
System Demand (MW)	max	14,551.720	14,821.870	13,275.030	-1.823%	9.617%
	min	8,531.990	9,400.580	8,787.040	-9.240%	-2.903%
	ave	11,318.740	12,263.973	11,122.311	-7.707%	1.766%
Demand + Reserve Schedule (MW)	max	14,882.584	15,435.664	14,297.436	-3.583%	4.093%
	min	8,795.490	9,744.180	9,756.570	-9.736%	-9.851%
	ave	11,702.356	12,718.420	12,086.006	-7.989%	-3.174%
Supply Margin (MW)	max	1,352.041	1,361.975	913.906	-0.729%	47.941%
	min	4.049	18.668	-1.348	-78.310%	400.371%
	ave	768.334	751.154	418.734	2.287%	83.490%

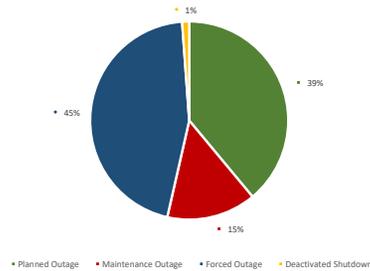
CAPACITY PROFILE



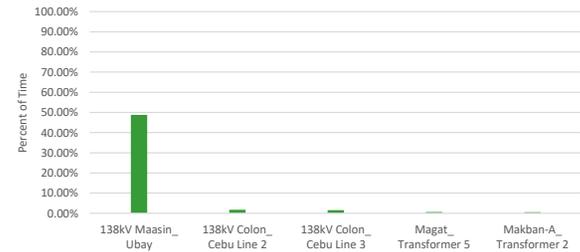
CAPACITY ON OUTAGE BY PLANT TYPE



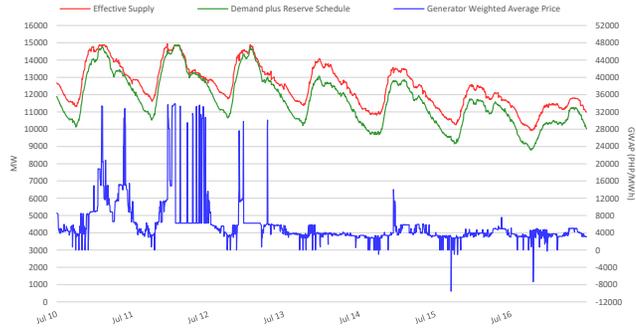
CAPACITY ON OUTAGE BY OUTAGE CATEGORY



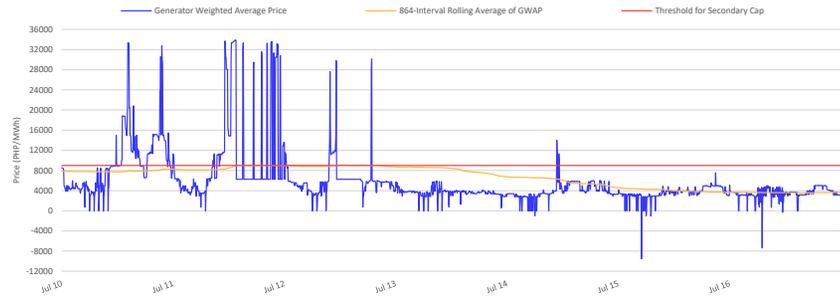
RTD CONGESTION



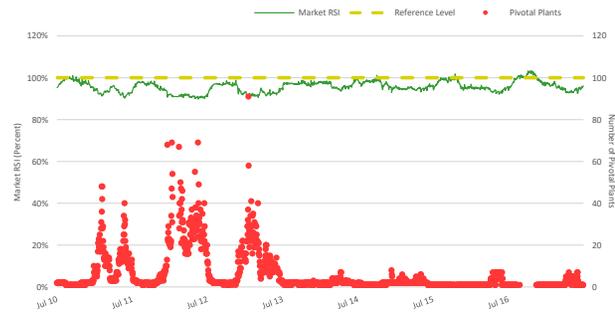
SUPPLY, DEMAND AND PRICE



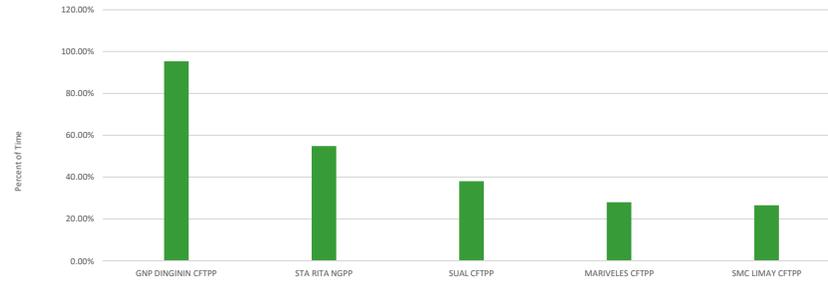
GENERATOR WEIGHTED AVERAGE PRICE



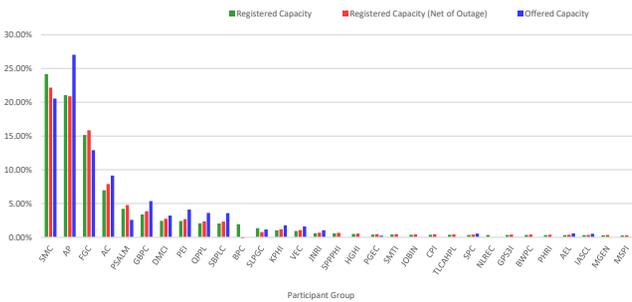
MARKET RSI VS PIVOTAL PLANTS



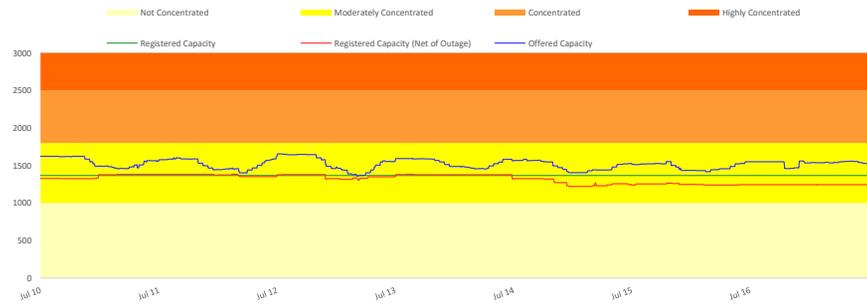
PSI



MARKET SHARE



HERFINDAHL-HIRSCHMAN INDEX

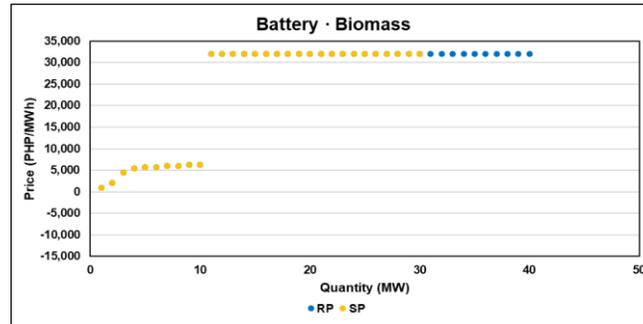
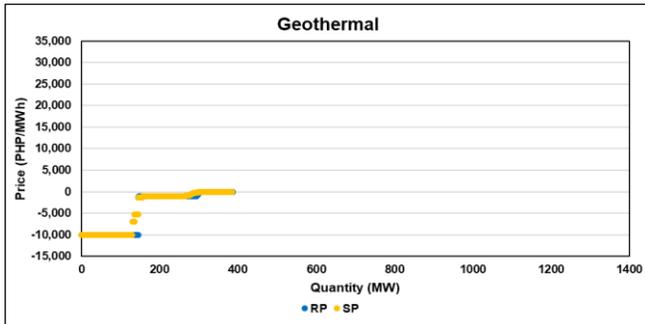
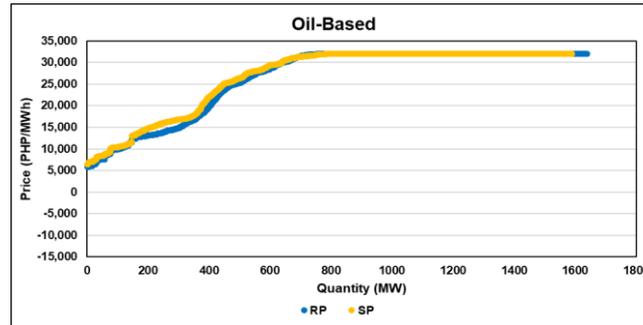
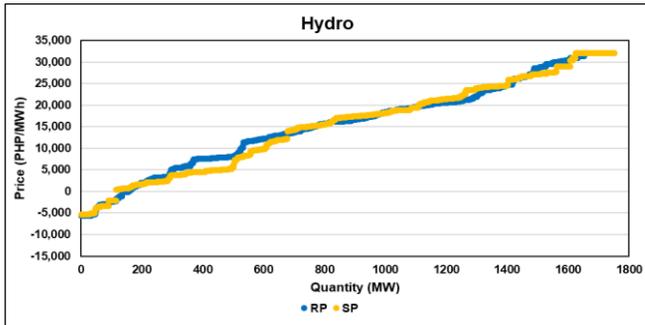
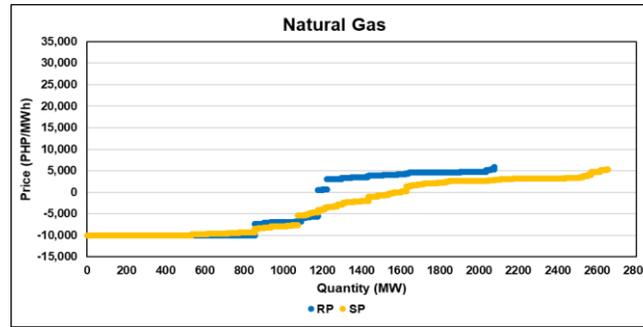
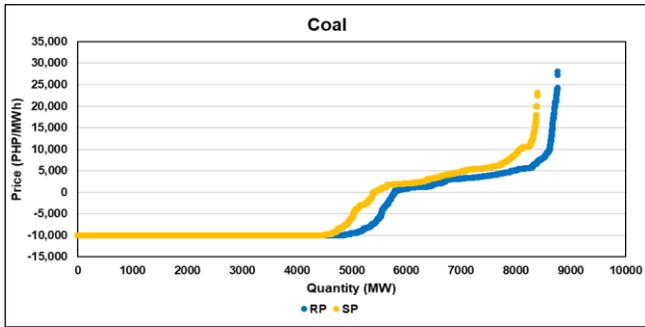


OFFER PATTERN ANALYSIS

Legend

RP: Reference Offer Price – the week of 03-09 Jul 2023 was used as a control for the comparison with the subject price

SP: Subject Offer Price – the week of 10-16 Jul 2023



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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