

PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 2,021 MW during the week of 18 - 24 Sep 2023, was lower than the previous week at 2,053 MW.
- The average effective supply during the week was 2,245 MW, higher than the 2,220 MW of the previous week. Ramping limitations were considered in the calculation of the effective supply.
 - The capacity on outage averaged at 848 MW, higher than last week's 524 MW. About 86% of the 848 MW involved Coal plants, while in terms of category, about 72% were Maintenance Outages.
- As a result, an average supply margin of 223 MW was observed during the week, which is higher by about 34% relative to the previous week. The thinnest supply margin based on MMS solution was 40.63 MW on 19 September 2023 18:10. The average supply margin was 138.36 MW at peak intervals and 252.79 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 6,316/MWh from PHP 4,461/MWh last week. Administered Prices will be used on System Operator (SO) initiated Market Intervention on September 18, 2023 (12:55-13:05) for Luzon, Visayas and Mindanao and September 23, 2023 (13:10-13:45) for Visayas and Mindanao.
 - No secondary price cap was imposed for this week
- The top 5 participant groups accounted for about 70% 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 –
 - MALITA CFTPP (about 79.07% of the time)
 - FDC MISAMIS CFTPP (about 51.34% of the time)
 - SARANGANI CFTPP (about 47.12% of the time)
 - GN POWER KAUSWAGAN CFTPP (about 34.77% of the time)
 - BALINGASAG CFTPP (about 14.88% of the time)
- Based on the MMS Solution, no congested equipment during the week.
- OPA ANALYSIS
 - Biofuel plants recorded less nomination on September 23 intervals 07:20 to 08:20
 - Geothermal plants offered 15MW in effective capacity at prices ranging from PHP20,000/MWh to PHP25,000/MWh on September 19 at intervals 00:05 to 09:10.
 - Hydro plants submitted offer prices ranging from PHP20,000/MWh to PHP25,000/MWh starting September 19.
 - Solar plants recorded highest nomination on September 23 and lowest peak on September 20.

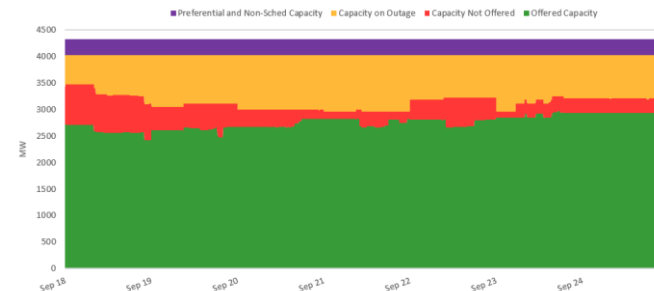
EMOP MARKET SYSTEMS ADVISORY

- SO initiated Market Intervention due to unimplementable RTD on September 18, 2023 (12:55-13:05) for Luzon, Visayas and Mindanao and September 23, 2023 (13:10-13:45) for Visayas and Mindanao.

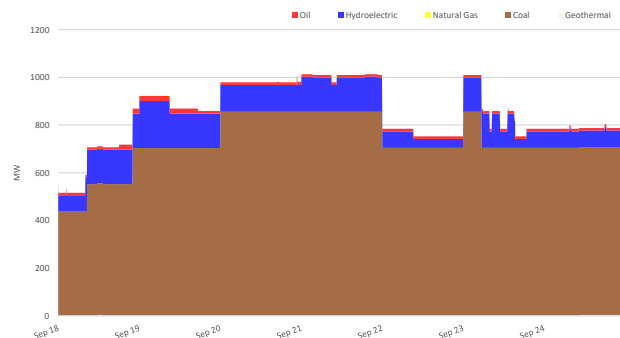
SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		18 - 24 Sep 2023	Previous Week (11 - 17 Sep 2023)	Percent Change
GWAP (PHP/MWh)	max	30,976.760	28,736.854	7.795%
	min	0.000	0.000	-
	ave	6,315.620	4,461.204	41.568%
Effective Supply (MW)	max	2,593.509	2,564.190	1.143%
	min	1,812.400	1,831.408	-1.038%
	ave	2,244.634	2,220.364	1.093%
System Demand (MW)	max	2,198.700	2,218.790	-0.905%
	min	1,375.860	1,378.970	-0.226%
	ave	1,813.602	1,814.269	-0.037%
Demand + Reserve Schedule (MW)	max	2,442.857	2,417.180	1.062%
	min	1,609.706	1,625.960	-1.000%
	ave	2,021.222	2,053.406	-1.567%
Supply Margin (MW)	max	356.594	244.503	45.844%
	min	40.633	78.260	-48.079%
	ave	223.412	166.958	33.813%

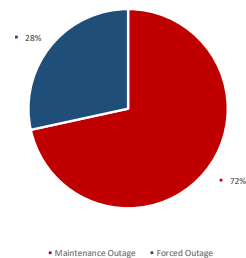
CAPACITY PROFILE



CAPACITY ON OUTAGE BY PLANT TYPE



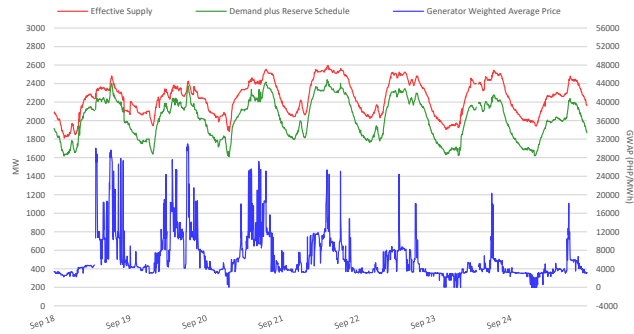
CAPACITY ON OUTAGE BY OUTAGE CATEGORY



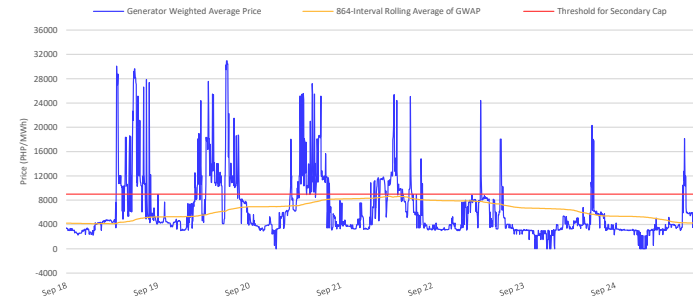
RTD CONGESTION



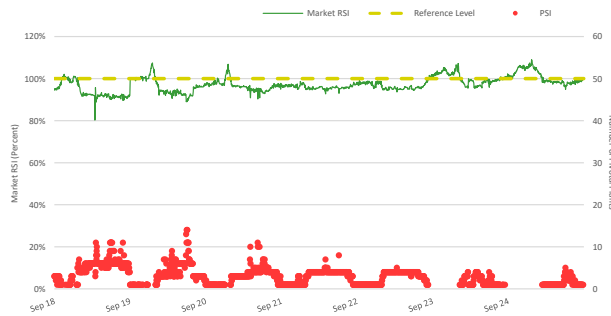
SUPPLY, DEMAND AND PRICE



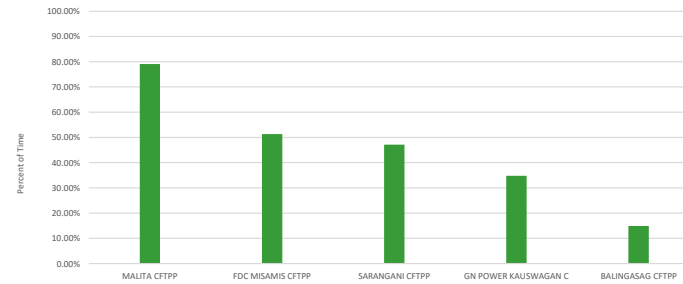
GENERATOR WEIGHTED AVERAGE PRICE



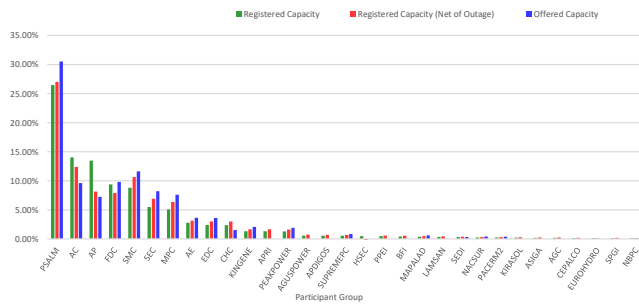
MARKET RSI VS PIVOTAL PLANTS



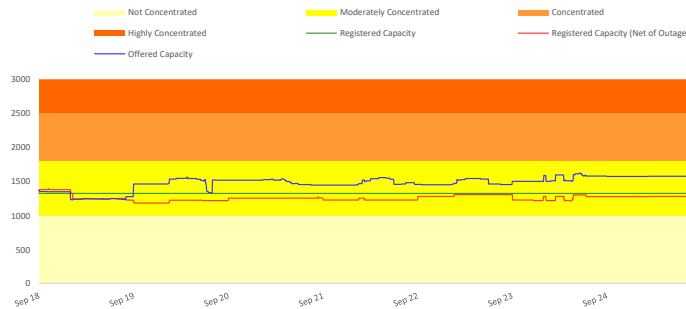
PSI



MARKET SHARE

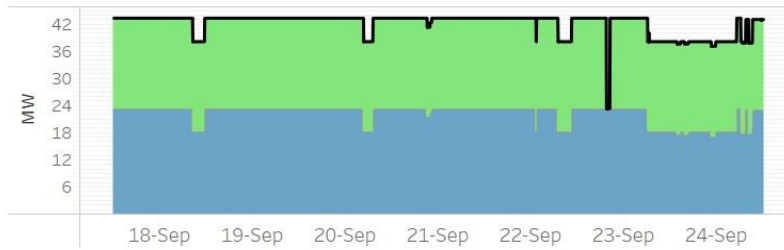


HERFINDAHL-HIRSCHMAN INDEX

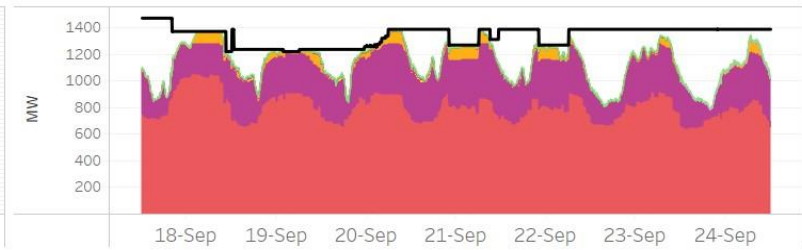


OFFER PATTERN ANALYSIS

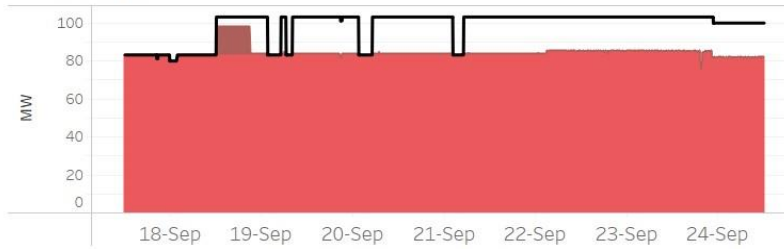
BATTERY AND BIOFUEL



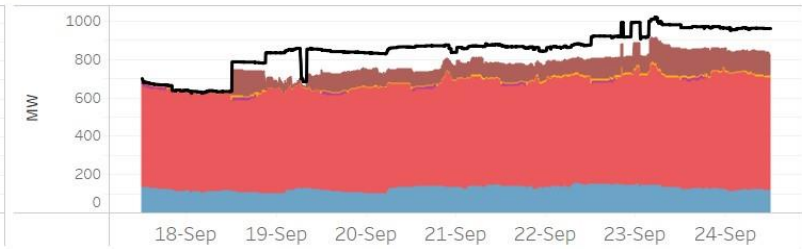
COAL



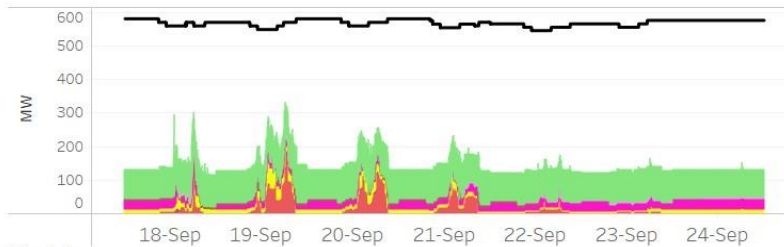
GEO THERMAL



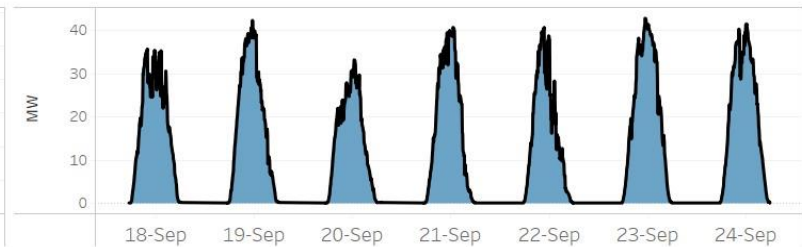
HYDRO



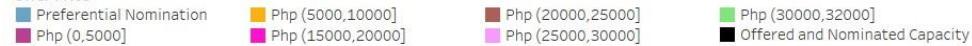
OIL-BASED



SOLAR



Offer Price



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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