

PEMC MARKET ASSESSMENT HIGHLIGHTS

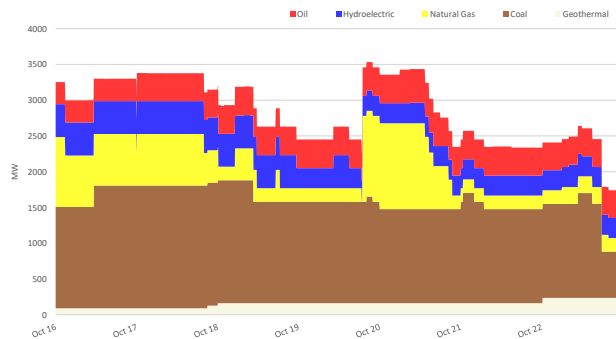
- The average demand and the reserve schedule, recorded at 11,937 MW during the week of 16 - 22 Oct 2023, was lower than the previous week at 12,247 MW and higher than the same week last year at 11,905 MW.
- The average effective supply during the week was 12,892 MW, lower than the 12,950 MW of the previous week and higher than the 12,246 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
 - The capacity on outage averaged at 2,840 MW, lower than last week's 3,000 MW. About 51% of the 2,840 MW involved Coal plants, while in terms of category, about 56% were Forced Outages.
- As a result, an average supply margin of 955 MW was observed during the week, which is higher by about 36% relative to the previous week and higher by about 180% in comparison with the same week last year. The thinnest supply margin based on MMS solution was 279.52 MW on 17 October 2023 22:05. The average supply margin was 853.87 MW at peak intervals and 1035.28 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 5,083/MWh from PHP 7,225/MWh last week. This is lower than the PHP8,763/MWh during the same week last year.
 - No secondary price cap was imposed for this week
- The top 5 participant groups accounted for about 77% 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 –
 - MASINLOC CFTPP (about 40.28% of the time)
 - PAGBILAO CFTPP (about 19.99% of the time)
 - STA RITA NGPP (about 16.12% of the time)
 - ILIJAN NGPP (about 15.92% of the time)
 - GNP DINGININ CFTPP (about 15.63% of the time)
- Based on the MMS Solution, the top 5 congested equipment during the week were –
 - 138kV Maasin-Ubay Line 1 (about 13.6% of the time)
 - 138kV Amlan-Mabinay Line 2 (about 5.1% of the time)
 - 138kV Colon-Cebu Line 3 (about 4.9% of the time)
 - 138kV Colon-Cebu Line 2 (about 4.4% of the time)
 - 138kV Amlan-Mabinay Line 1 (about 4.2% of the time)

- OPA ANALYSIS
 - Battery had some capacity offered at price range of Php 0/MWh and below on afternoon peak of October 16 and 17. There was also an observed sudden decrease in offered capacity on October 18 and 19.
 - Hydro plants offered lower capacity on offpeak of October 17 and 18 due to plant outages and pumping of Kalayaan PSPP.
 - Natural gas plants had lower offered capacity on October 19 and 20 due to plant outages. Offered capacity is higher than the previous week due to increased of offered capacity of Ilijan and resumption of Sta Rita.
 - Solar plants' highest nomination was recorded on October 20 and lowest on October 21.
 - Wind plants' lowest nomination was recorded on October 17 and highest on October 19.

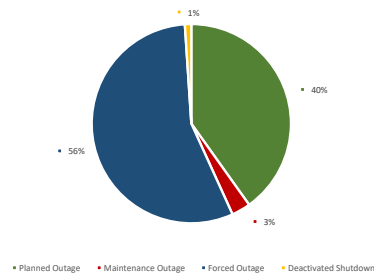
ITEMOP MARKET SYSTEMS ADVISORY

- No IT-related issue was advised in ITEMOP's market systems from 16 - 22 Oct 2023.

CAPACITY ON OUTAGE BY PLANT TYPE



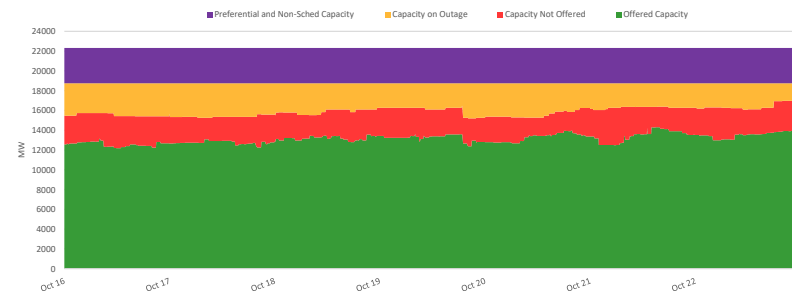
CAPACITY ON OUTAGE BY OUTAGE CATEGORY



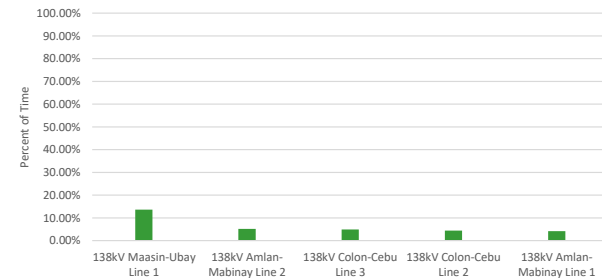
SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		16 - 22 Oct 2023	Previous Week (09 - 15 Oct 2023)	Same Week, Previous Year (17 - 23 Oct 2022)	Percent Change From	
					Previous Week	Same Week, Prev Year
GWAP (PHP/MWh)	max	28,483.408	33,435.013	35,733.701	-14.810%	-20.290%
	min	-5,619.320	-0.999	-0.962	-562k%	-584k%
	ave	5,083.077	7,224.814	8,762.829	-29.644%	-41.993%
Effective Supply (MW)	max	14,925.680	14,908.830	14,028.233	0.113%	6.397%
	min	10,746.620	10,676.299	10,480.929	0.659%	2.535%
	ave	12,891.926	12,950.133	12,246.050	-0.449%	5.274%
System Demand (MW)	max	13,671.990	13,902.730	12,930.270	-1.660%	5.736%
	min	8,922.560	9,169.120	9,032.230	-2.689%	-1.214%
	ave	11,422.938	11,695.307	11,085.011	-2.329%	3.049%
Demand + Reserve Schedule (MW)	max	14,170.660	14,426.920	13,828.605	-1.776%	2.474%
	min	9,526.200	9,965.880	9,890.063	-4.412%	-3.679%
	ave	11,936.555	12,246.799	11,905.088	-2.533%	0.264%
Supply Margin (MW)	max	1,470.072	1,230.440	852.624	19.475%	72.417%
	min	279.524	-2.950	-32.340	9k%	964%
	ave	955.372	703.335	340.962	35.835%	180.199%

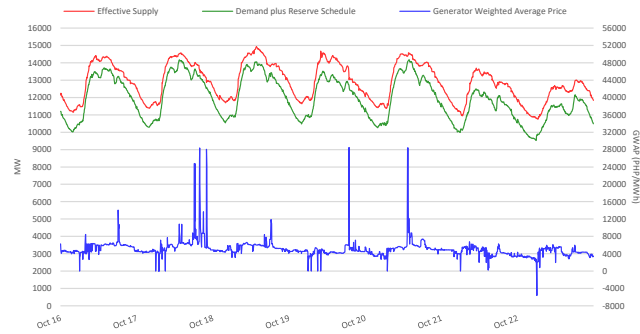
CAPACITY PROFILE



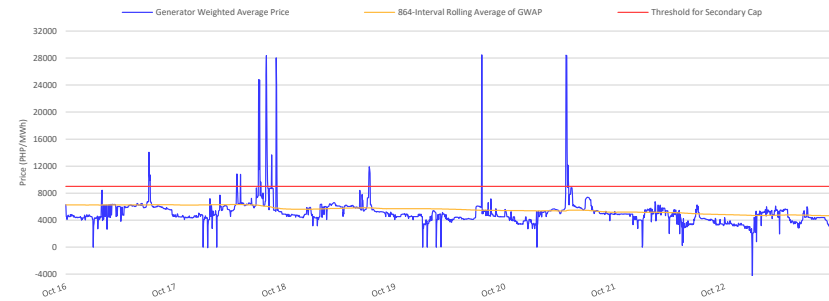
RTD CONGESTION



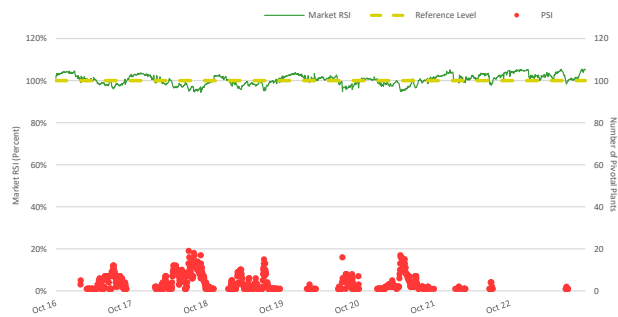
SUPPLY, DEMAND AND PRICE



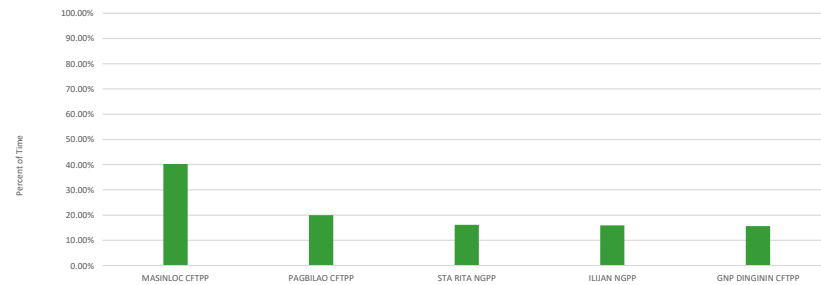
GENERATOR WEIGHTED AVERAGE PRICE



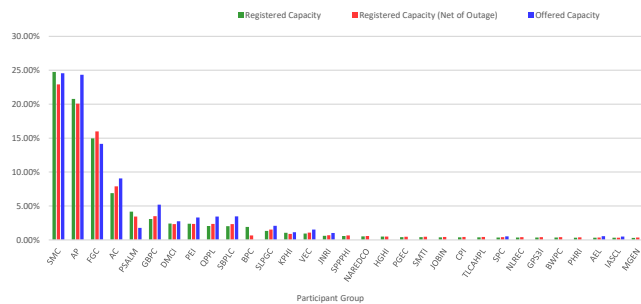
MARKET RSI VS PIVOTAL PLANTS



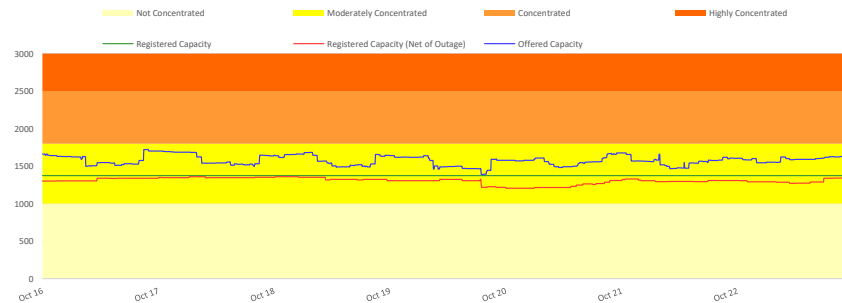
PSI



MARKET SHARE

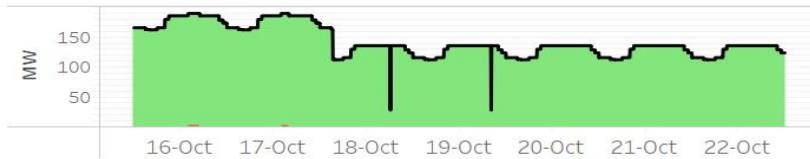


HERFINDAHL-HIRSCHMAN INDEX

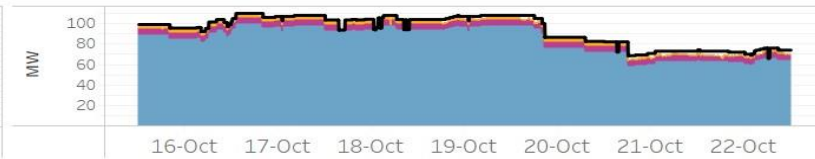


OFFER PATTERN ANALYSIS

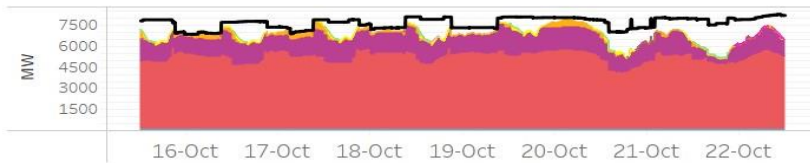
BATTERY



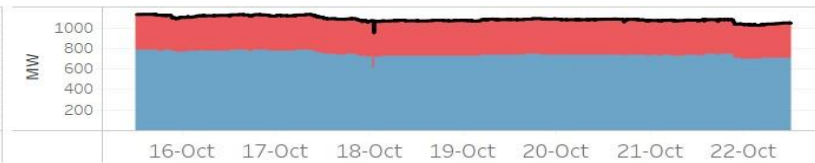
BIOFUEL



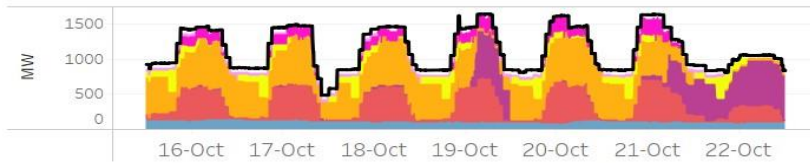
COAL



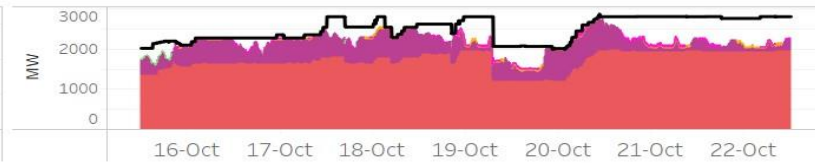
GEOTHERMAL



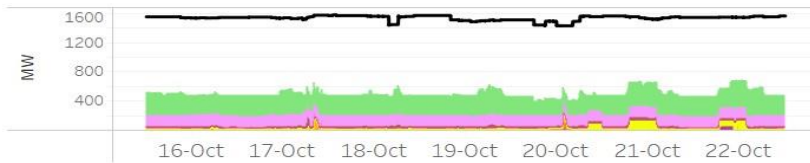
HYDRO



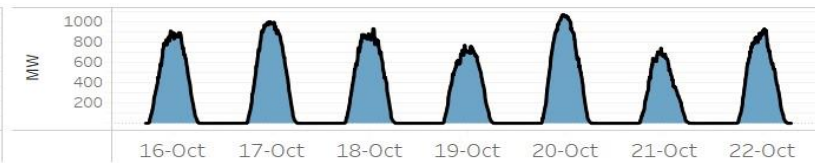
NATURAL GAS



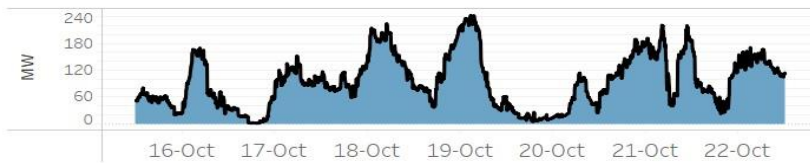
OIL-BASED



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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