

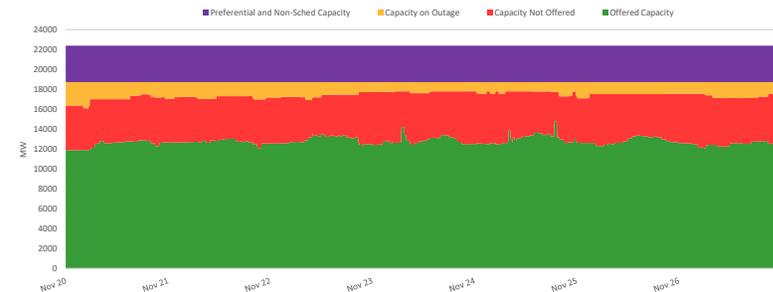
PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 11,944 MW during the week of 20 - 26 Nov 2023, was lower than the previous week at 12,066 MW and higher than the same week last year at 11,725 MW.
- The average effective supply during the week was 12,691 MW, lower than the 12,834 MW of the previous week and higher than the 12,123 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
 - The capacity on outage averaged at 1,305 MW, lower than last week's 2,205 MW. In terms of capacity on outage by plant type, about 30% of the 1,305 MW involved Natural Gas Plants, while in terms of category, about 65% were Forced Outages.
- As a result, an average supply margin of 747 MW was observed during the week, which is lower by about 2.77% relative to the previous week and higher by about 88% in comparison with the same week last year. The thinnest supply margin based on MMS solution was 46.01 MW on 21 November 2023 21:05. The average supply margin was 789.47 MW at peak intervals and 712.77 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 3,107/MWh from PHP 3,693/MWh last week. This is lower than the PHP9,050/MWh during the same week last year.
 - No secondary price cap was imposed for this week
- The top 5 participant groups accounted for about 78% of the offered capacity. The Herfindahl-Hirschman Index (HHI) by participant group indicated almost 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 96.97% of the time)
 2. STA RITA NGPP (about 71.78% of the time)
 3. ILJAN NGPP (about 44.39% of the time)
 4. MASINLOC CFTPP (about 42.46% of the time)
 5. MARIVELES CFTPP (about 39.09% of the time)
- Based on the MMS Solution, the top 5 congested equipment during the week were –
 1. 138kV Samboan-Amlan Line1 (about 8.6% of the time)
 2. 230 kV Tabango_Daan Bantayan (about 1.1% of the time)
 3. Zapote_Transformer 4 (0.25% of the time)
 4. Pagudpud_Transformer 1 (0.15% of the time)
 5. Cadiz_Transformer 1 (0.1% of the time)
- OPA_ANALYSIS
 - Battery had some capacity offered at price range of Php 0/MWh and below from November 20.
 - Coal plants offered higher capacity compared to previous week due to lower outages.
 - Natural gas plants had lower offered capacity compared to previous week due to outages.
 - Solar plants' highest nomination was recorded on November 22 and lowest on November 24.
 - Wind plants' lowest nomination was recorded on November 22 and highest on November 24.
- IEMOP MARKET SYSTEMS ADVISORY
 - No IT-related issue was advised in IEMOP's market systems from 20 - 26 Nov 2023.

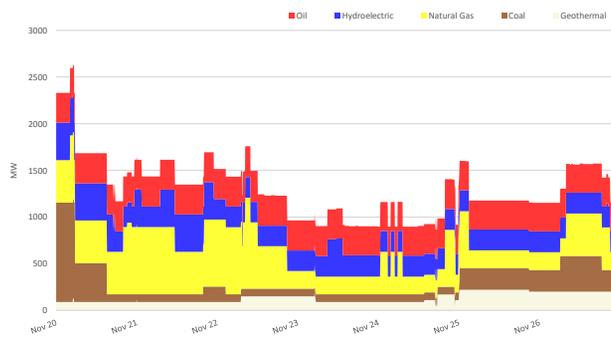
SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		20 - 26 Nov 2023	Previous Week (13 - 19 Nov 2023)	Same Week, Previous Year (21 - 27 Nov 2022)	Percent Change From	
					Previous Week	Same Week, Prev Year
GWAP (PHP/MWh)	max	29,641.780	29,737.751	34,737.500	-0.32%	-14.67%
	min	-9,791.534	-988.493	0.000	-890.55%	-
	ave	3,107.300	3,693.272	9,050.060	-15.87%	-65.67%
Effective Supply (MW)	max	15,064.020	15,003.432	14,081.689	0.40%	6.98%
	min	10,415.665	10,618.279	9,874.630	-1.91%	5.48%
	ave	12,690.851	12,833.718	12,122.971	-1.11%	4.68%
System Demand (MW)	max	13,287.700	13,503.560	13,022.290	-1.60%	2.04%
	min	8,711.010	8,816.210	8,179.440	-1.19%	6.50%
	ave	11,059.256	11,257.070	10,823.310	-1.76%	2.18%
Demand + Reserve Schedule (MW)	max	14,319.750	14,464.900	13,894.360	-1.00%	3.06%
	min	9,699.830	9,800.890	8,730.740	-1.03%	11.10%
	ave	11,944.294	12,065.890	11,725.066	-1.01%	1.87%
Supply Margin (MW)	max	1,311.826	1,206.175	1,430.850	8.76%	-8.32%
	min	46.013	283.960	-194.232	-83.80%	123.69%
	ave	746.556	767.828	397.905	-2.77%	87.62%

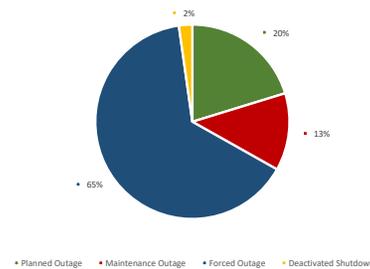
CAPACITY PROFILE



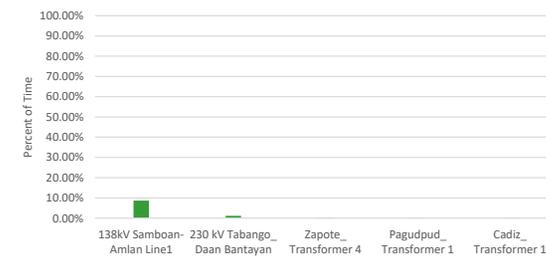
CAPACITY ON OUTAGE BY PLANT TYPE



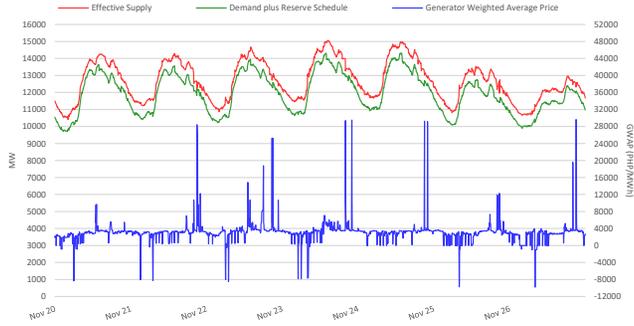
CAPACITY ON OUTAGE BY OUTAGE CATEGORY



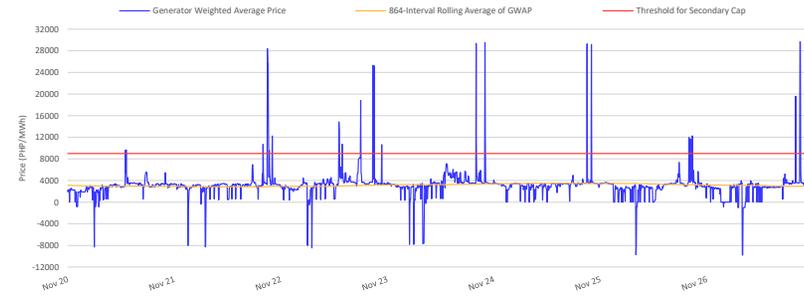
RTD CONGESTION



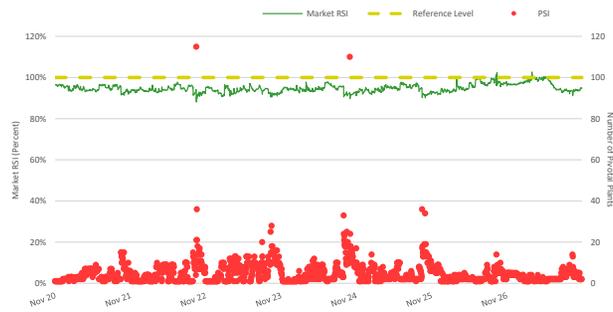
SUPPLY, DEMAND AND PRICE



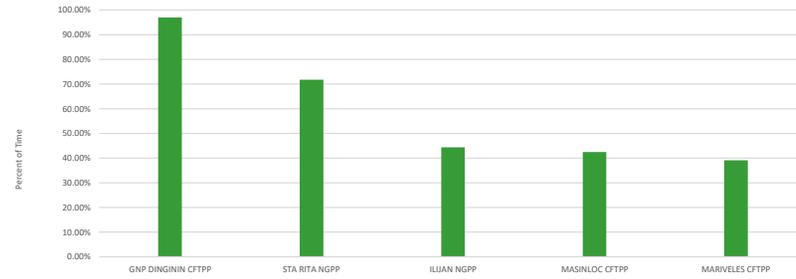
GENERATOR WEIGHTED AVERAGE PRICE



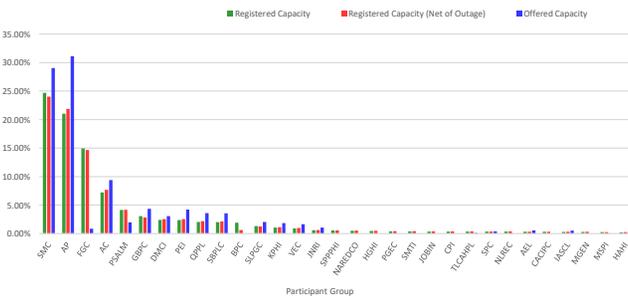
MARKET RSI VS PIVOTAL PLANTS



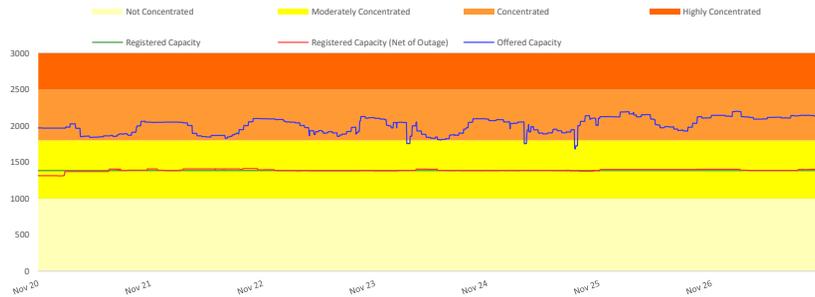
PSI



MARKET SHARE

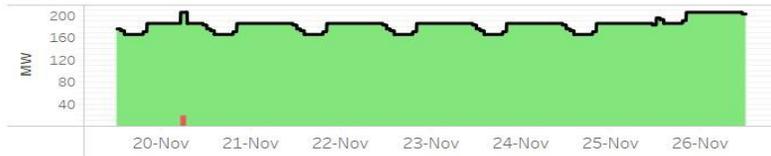


HERFINDAHL-HIRSCHMAN INDEX

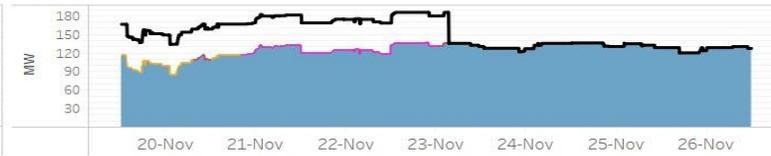


OFFER PATTERN ANALYSIS

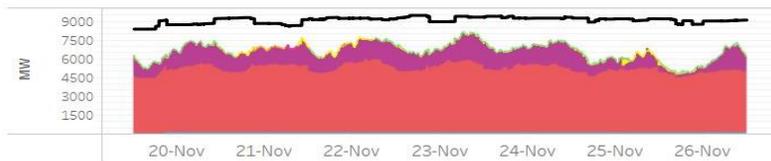
BATTERY



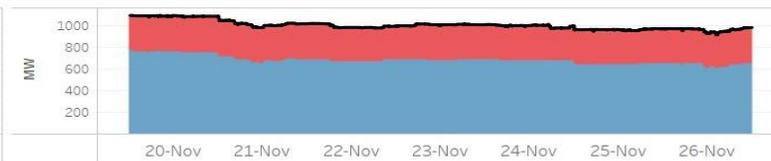
BIOFUEL



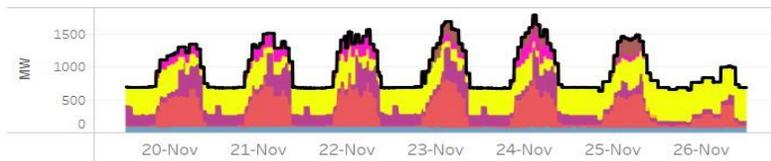
COAL



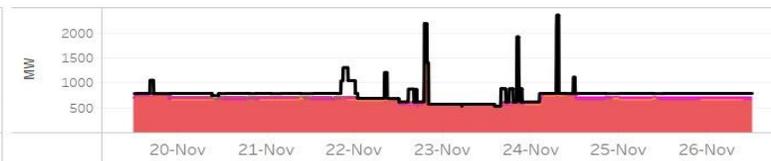
GEOHERMAL



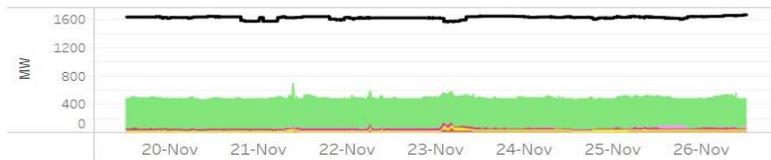
HYDRO



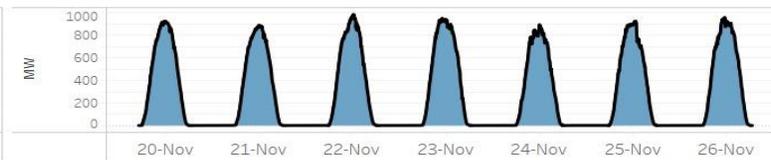
NATURAL GAS



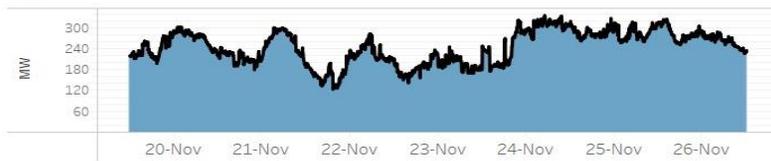
OIL-BASED



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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