

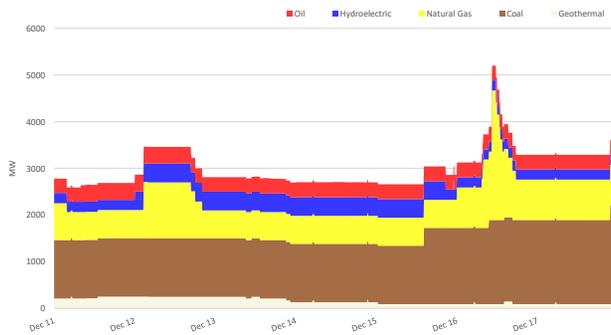
PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 12,512 MW during the week of 11 - 17 Dec 2023, was lower than the previous week at 12,520 MW and higher than the same week last year at 11,632 MW.
- The average effective supply during the week was 13,032 MW, higher than the 13,018 MW of the previous week and higher than the 11,936 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
 - The capacity on outage averaged at 3,015 MW, higher than last week's 2,658 MW. In terms of capacity on outage by plant type, about 47% of the 3,015 MW involved Coal Plants, while in terms of category, about 52% were Planned Outages.
- As a result, an average supply margin of 519 MW was observed during the week, which is higher by about 4% relative to the previous week and higher by about 71% in comparison with the same week last year. The supply deficit based on MMS solution was 128.41 MW on 11 December 2023 14:40h. The average supply margin was 481.71 MW at peak intervals and 548.92 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 4,508/MWh from PHP 4,130/MWh last week. This is lower than the PHP9,004/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 nearly half 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 100.0% of the time)
 2. MASINLOC CFTPP (about 93.9% of the time)
 3. STA RITA NGPP (about 92.41% of the time)
 4. MARIVELES CFTPP (about 79.76% of the time)
 5. ILJAN NGPP (about 61.01% of the time)
- Based on the MMS Solution, the top 5 congested equipment during the week were –
 1. 138kV Samboan-Amlan Line1 (about 4.1% of the time)
 2. 138kV Cebu -Mandaue Line 2 (about 2.3% of the time)
 3. Mandaue_Transformer 2 (about 0.79% of the time)
 4. 230kV Bauang-Latrinidad Line1 (about 0.74% of the time)
 5. 230 kV Tabango_Daan Bantayan (about 0.5% of the time)
- OPA ANALYSIS
 - The capacity offered by coal plants was comparable to that of the previous week
 - On December 15, hydro plants offered a capacity of around 180 MW at a price range of Php 25,000/MWh to Php 30,000/MWh.
 - On December 11-13, NatGas had a lower offered capacity during the conduct of performance tests by several plants. However, the said plants were scheduled thru the security limits imposed by the NGCP-SO. Further, NatGas plants experienced reduced capacity on December 12 and 16 due forced outages.
 - The highest nomination for solar plants was recorded on December 13, while the lowest was on December 16.
 - The lowest nomination for wind plants was recorded on December 16, and the highest was on December 17.

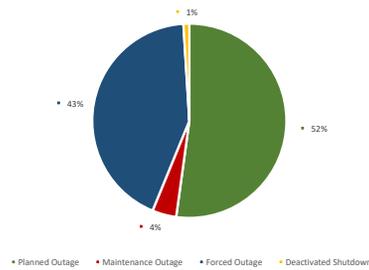
IEMOP MARKET SYSTEMS ADVISORY

- No IT-related issue was advised in IEMOP's market systems from 11 - 17 Dec 2023.

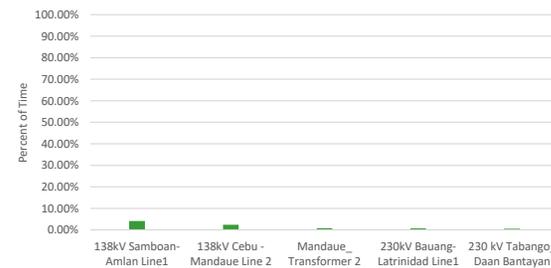
CAPACITY ON OUTAGE BY PLANT TYPE



CAPACITY ON OUTAGE BY OUTAGE CATEGORY



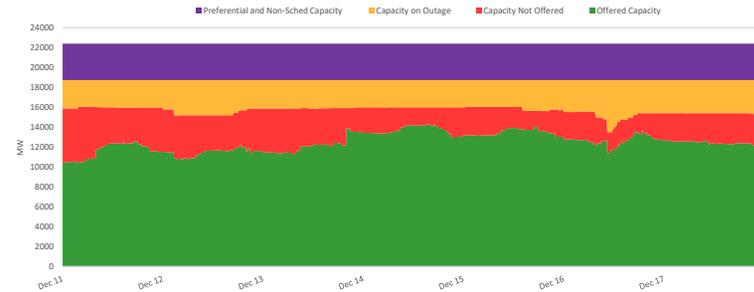
RTD CONGESTION



SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

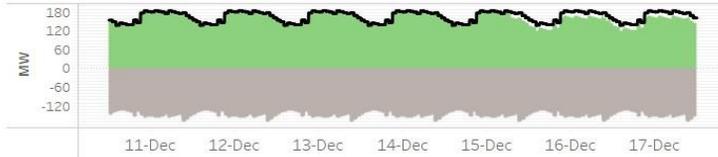
Particulars	11 - 17 Dec 2023	Previous Week (04 - 10 Dec 2023)	Same Week, Previous Year (12 - 18 Dec 2022)	Percent Change From		
				Previous Week	Same Week, Prev Year	
GWAP (PHP/MWh)	max	39,159.378	32,960.905	37,123.415	18.81%	5.48%
	min	-0.998	-148.836	0.000	99.33%	-
	ave	4,507.664	4,130.330	9,004.313	9.14%	-49.94%
Effective Supply (MW)	max	15,349.281	15,027.684	13,779.684	2.14%	11.39%
	min	10,717.194	10,489.550	9,944.480	2.17%	7.77%
	ave	13,031.735	13,018.311	11,936.305	0.10%	9.18%
System Demand (MW)	max	13,763.480	13,767.350	12,546.170	-0.03%	9.70%
	min	9,010.080	8,723.650	8,527.960	3.28%	5.65%
	ave	11,407.457	11,458.668	10,725.739	-0.45%	6.36%
Demand + Reserve Schedule (MW)	max	14,874.250	14,753.530	13,491.210	0.82%	10.25%
	min	10,054.370	9,841.710	9,359.660	2.16%	7.42%
	ave	12,512.422	12,519.791	11,632.440	-0.06%	7.56%
Supply Margin (MW)	max	795.580	1,288.752	949.647	-38.27%	-16.22%
	min	-128.407	-2.146	-102.055	-5%	-25.82%
	ave	519.313	498.520	303.865	4.17%	70.90%

CAPACITY PROFILE

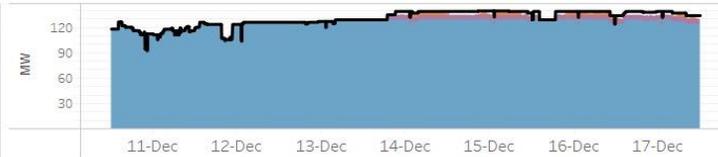


OFFER PATTERN ANALYSIS

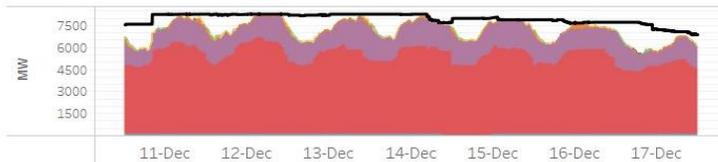
BATTERY



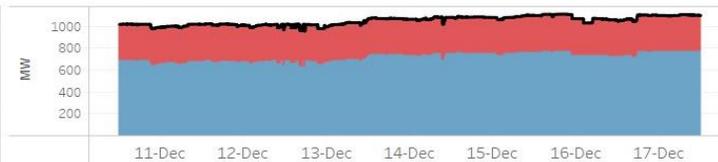
BIOFUEL



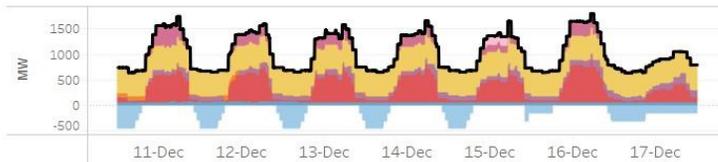
COAL



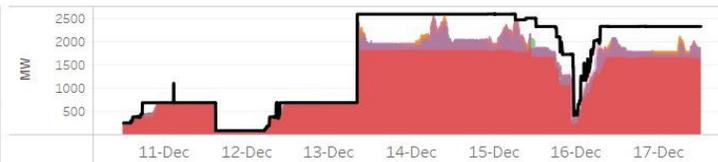
GEOHERMAL



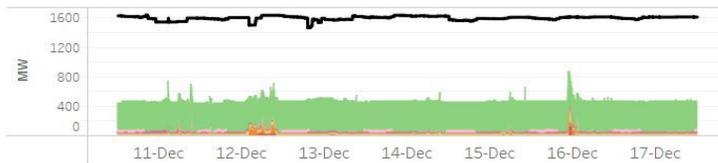
HYDRO



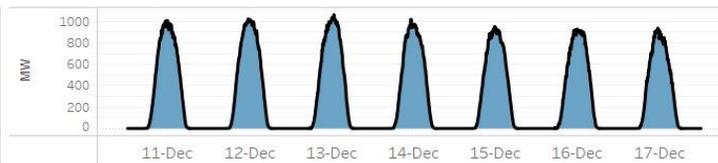
NATURAL GAS



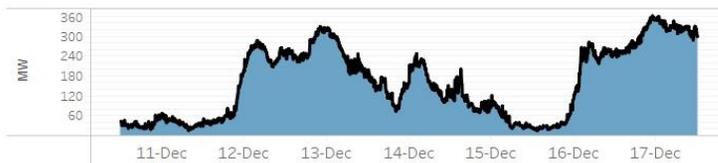
OIL-BASED



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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