

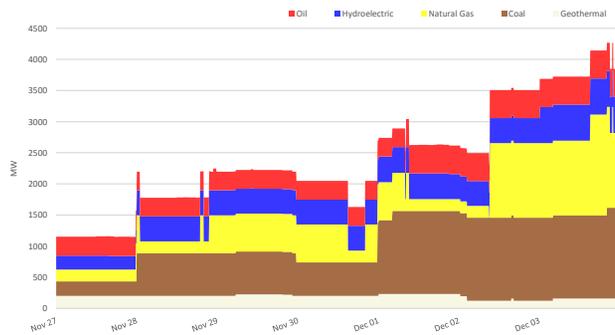
PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 12,275 MW during the week of 27 Nov to 03 Dec 2023, was higher than the previous week at 11,944 MW and higher than the same week last year at 11,623 MW.
- The average effective supply during the week was 12,839 MW, higher than the 12,691 MW of the previous week and higher than the 11,912 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
 - The capacity on outage averaged at 2,410 MW, higher than last week's 1,305 MW. In terms of capacity on outage by plant type, about 36% of the 2,410 MW involved Coal Plants, while in terms of category, about 55% were Forced Outages.
- As a result, an average supply margin of 564 MW was observed during the week, which is lower by about 24.42% relative to the previous week and higher by about 95% in comparison with the same week last year. The supply deficit based on MMS solution was 1.01 MW on 01 December 2023 23:05h. The average supply margin was 518.94 MW at peak intervals and 592.09 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 3,700/MWh from PHP 3,107/MWh last week. This is lower than the PHP9,245/MWh during the same week last year.
 - No secondary price cap was imposed for this week.
- The top 5 participant groups accounted for about 79% of the offered capacity. The Herfindahl-Hirschman Index (HHI) by participant group indicated majority concentrated and moderately concentrated market based on the offered and registered capacities respectively.
- The top 5 pivotal plants during the week were –
 1. STA RITA NGPP (about 97.92% of the time)
 2. GNP DINGININ CFTPP (about 93.55% of the time)
 3. MASINLOC CFTPP (about 84.08% of the time)
 4. MARIVELES CFTPP (about 82.64% of the time)
 5. PAGBILAO CFTPP (about 66.91% of the time)
- Based on the MMS Solution, the top 5 congested equipment during the week were –
 1. 138kV Samboan-Amlan Line1 (about 14.2% of the time)
 2. 138 kV Mandaue-Lapu-Lapu Line 2 (about 3.6% of the time)
 3. Mandaue_Transformer 2 (about 3.2% of the time)
 4. 230 kV Tabango_Daan Bantayan (about 2.1% of the time)
 5. 230kV Mexico-Hermosa Line2 (about 1.8% of the time)
- OPA_ANALYSIS
 - Battery plants offered lower capacity starting December 1.
 - Coal plants offered lower capacity compared to previous week due to outages.
 - Hydro plants offered 94MW-180MW capacity at a price range of Php 25,000/MWh to Php 30,000/MWh on November 28 and 30.
 - Natural gas plants offered lower capacity compared to previous week. The Sta. Rita, San Lorenzo and San Gabriel plants did not submit generation offers most of the time during the week but were scheduled in the market thru the security limits imposed by SO for the conduct of plant performance tests. The significant drop in offered capacity starting December 2 was due to the forced outage of Ilijan.
 - Solar plants' highest nomination was recorded on December 2 and lowest on December 3.
 - Wind plants' lowest nomination was recorded on November 29 and highest on December 1.

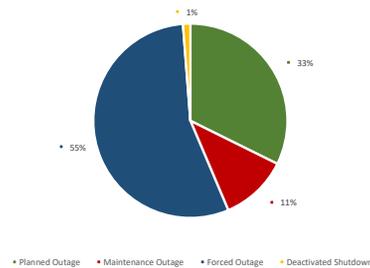
IEMOP MARKET SYSTEMS ADVISORY

- No IT-related issue was advised in IEMOP's market systems from 27 Nov -03 Dec 2023.

CAPACITY ON OUTAGE BY PLANT TYPE



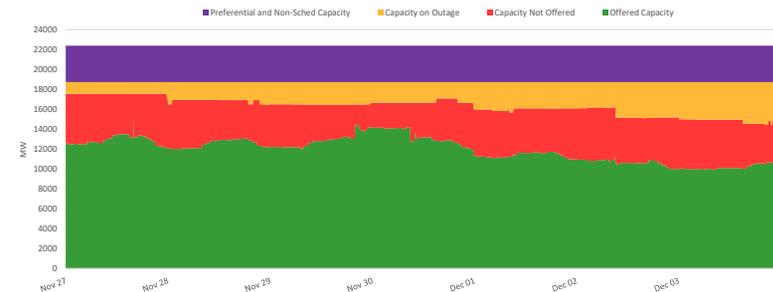
CAPACITY ON OUTAGE BY OUTAGE CATEGORY



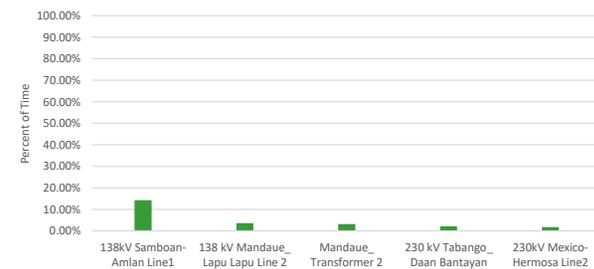
SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars	27 Nov -03 Dec 2023	Previous Week (20 - 26 Nov 2023)	Same Week, Previous Year (28 Nov -04 Dec 2022)	Percent Change From		
				Previous Week	Same Week, Prev Year	
GWAP (PHP/MWh)	max	32,831.822	29,641.780	34,449.270	10.76%	-4.70%
	min	-9,947.943	-9,791.534	0.000	-1.60%	-
	ave	3,699.898	3,107.300	9,245.031	19.07%	-59.98%
Effective Supply (MW)	max	15,238.220	15,064.020	13,784.187	1.16%	10.55%
	min	10,053.980	10,415.665	9,679.261	-3.47%	3.87%
	ave	12,839.446	12,690.851	11,911.837	1.17%	7.79%
System Demand (MW)	max	13,601.890	13,287.700	13,014.600	2.36%	4.51%
	min	8,361.080	8,711.010	8,420.580	-4.02%	-0.71%
	ave	11,221.626	11,059.256	10,786.588	1.47%	4.03%
Demand + Reserve Schedule (MW)	max	14,732.630	14,319.750	13,602.570	2.88%	8.31%
	min	9,542.940	9,699.830	9,238.080	-1.62%	3.30%
	ave	12,275.222	11,944.294	11,622.633	2.77%	5.61%
Supply Margin (MW)	max	1,713.821	1,311.826	935.964	30.64%	83.11%
	min	-1.013	46.013	-338.402	-102.20%	99.70%
	ave	564.224	746.556	289.204	-24.42%	95.10%

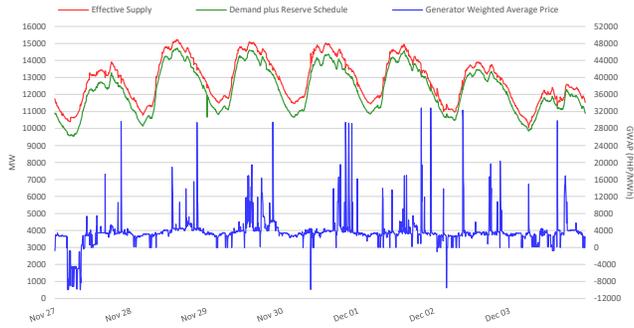
CAPACITY PROFILE



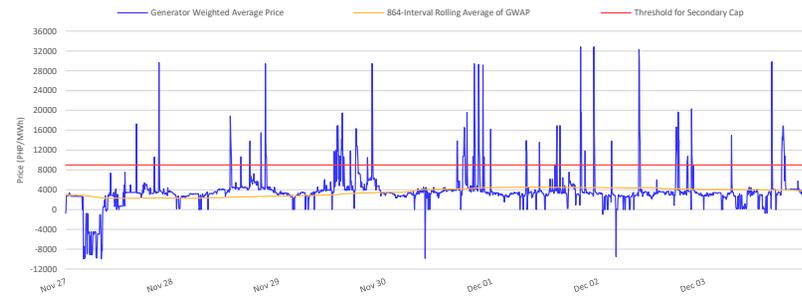
RTD CONGESTION



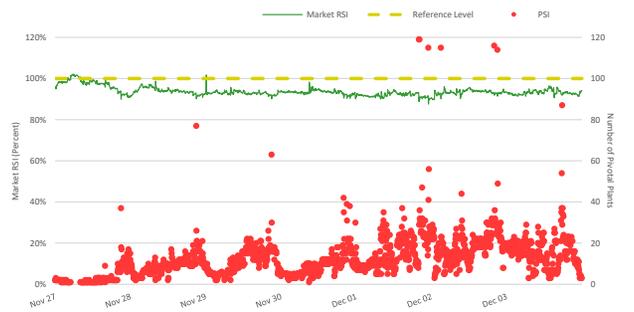
SUPPLY, DEMAND AND PRICE



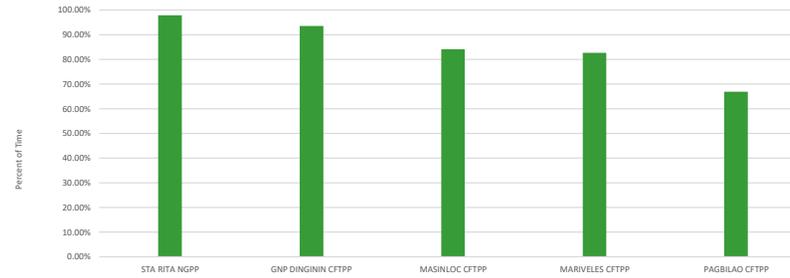
GENERATOR WEIGHTED AVERAGE PRICE



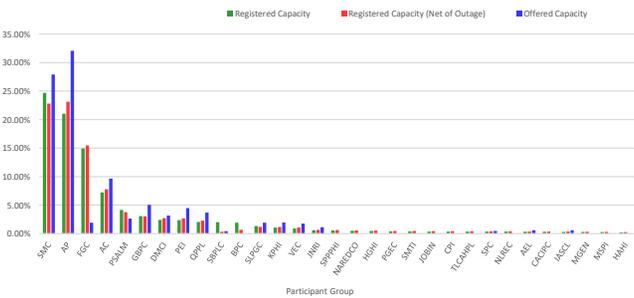
MARKET RSI VS PIVOTAL PLANTS



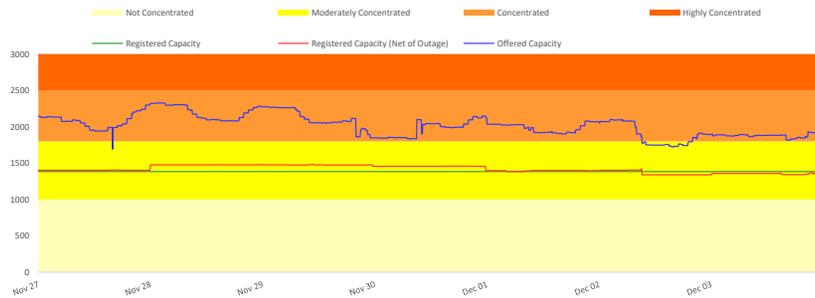
PSI



MARKET SHARE

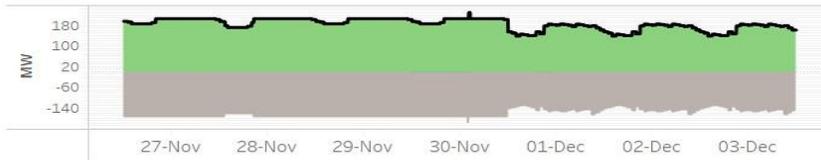


HERFINDAHL-HIRSCHMAN INDEX

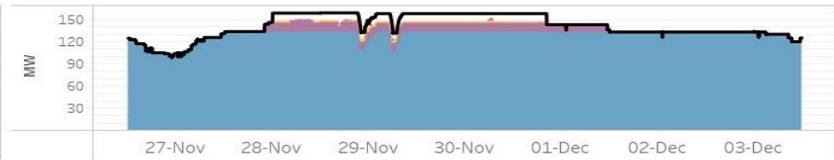


OFFER PATTERN ANALYSIS

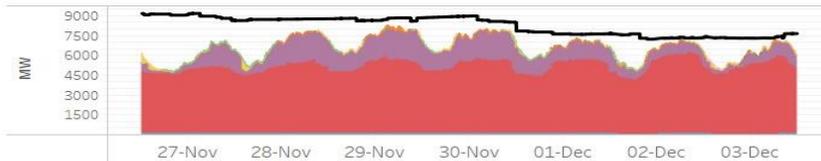
BATTERY



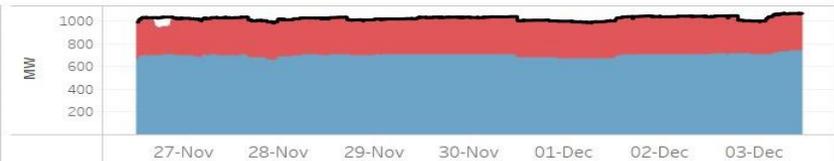
BIOFUEL



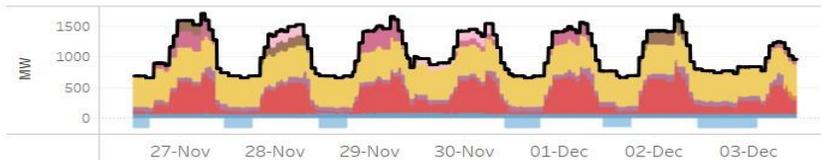
COAL



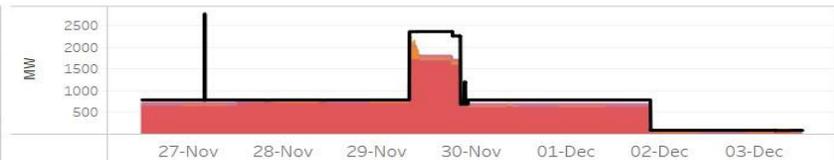
GEOHERMAL



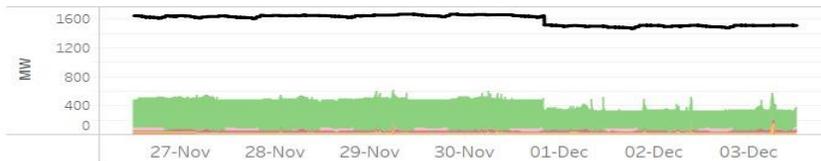
HYDRO



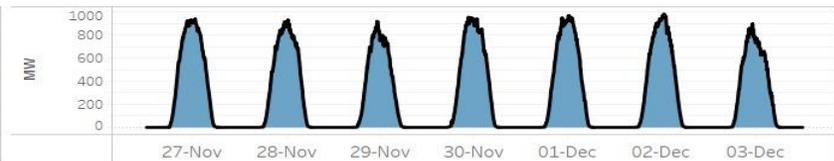
NATURAL GAS



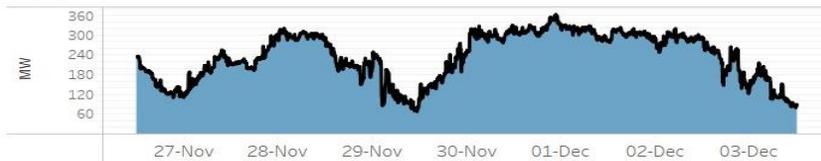
OIL-BASED



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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