

PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 11,070 MW during the week of 13 - 19 Feb 2023, was lower than the previous week at 11,255 and lower than the same week last year at 11,209 MW.
- The average effective supply during the week was 11,763 MW, lower than the 11,781 MW of the previous week and higher than the 11,742 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
 - The capacity on outage averaged at 3,348 MW, lower than last week's 4,082 MW. About 37% of the 3,348 MW involved Coal plants, while in terms of category, about 62% were Forced Outages.
- As a result, an average supply margin of 692 MW was observed during the week, which is higher by about 32% relative to the previous week and higher by about 30% in comparison with the same week last year. The thinnest supply margin was 335.79 MW on 18 February 2023 21:05. The average supply margin was 733.02 MW at peak intervals and 659.2 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 6,857/MWh from PHP 8,599/MWh last week. This is higher than the PHP6,393/MWh during the same week last year. Administered Prices were used in the Market Operator - initiated market intervention on 18 February 2023 15:40 for all regions.
 - No secondary price cap was imposed for this week
- The top 5 participant groups accounted for about 85% of the offered capacity. The Herfindahl-Hirschman Index (HHI) by participant group indicated concentrated and moderately concentrated market based on the offered and registered capacities respectively.
- The top 5 pivotal plants during the week were –
 - GNP DINGININ CFTPP (about 99.95% of the time)
 - STA RITA NGPP (about 81.15% of the time)
 - SUAL CFTPP (about 67.46% of the time)
 - SMC LIMAY CFTPP (about 18.11% of the time)
 - MASINLOC CFTPP (about 7.34% of the time)
- Based on the MMS Solution, the top 5 congested equipment during the week were –
 - 230kV Mexico-Hermosa Line2 (about 21.0% of the time)
 - 138kV Cebu-Mandaue Line1 (about 13.1% of the time)
 - 230 kV Hermosa-Malolos Line1 (about 10.1% of the time)
 - 230kV Mexico-Hermosa Line1 (about 9.9% of the time)
 - 230kV Hermosa-Duhat Line 1 (about 1.4% of the time)
- Coal and natural gas plants recorded higher offered capacity during the week mainly attributable to the resumption of operations of Pagbilao CFTPP unit 3 and Ilijan NGPP Block A in the previous week. Meanwhile, hydro plants observed slightly lower offer prices during the week.

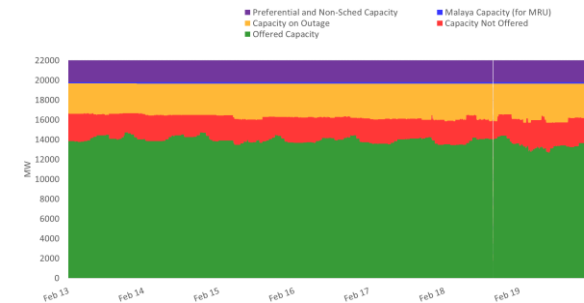
IEMOP MARKET SYSTEMS ADVISORY

- The Market Operator initiated Market Intervention for Luzon, Visayas and Mindanao on 18 February 2023 15:40 due to MPI Transfer Failure.

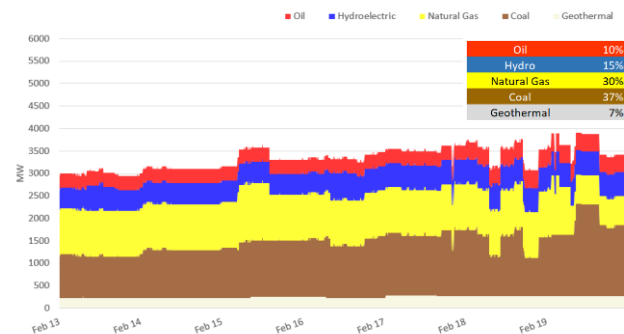
SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		13 - 19 Feb 2023	Previous Week (06 - 12 Feb 2023)	Same Week, Previous Year (14 - 20 Feb 2022)	Percent Change From	
					Previous Week	Same Week, Prev Year
GWAP (PHP/MWh)	max	26,109.66	33,684.87	32,033.86	-22.49%	-18.49%
	min	-9,767.14	0.00	-982.65	-	-893.96%
	ave	6,857.14	8,598.75	6,393.28	-20.25%	7.26%
Effective Supply (MW)	max	13,923.95	13,653.18	13,629.72	1.98%	2.16%
	min	9,642.89	9,668.54	10,036.47	-0.27%	-3.92%
	ave	11,762.54	11,781.08	11,741.94	-0.16%	0.18%
System Demand (MW)	max	12,051.69	12,303.20	12,002.92	-2.04%	0.41%
	min	8,097.57	7,928.12	8,383.31	2.14%	-3.41%
	ave	9,987.73	10,254.08	10,181.84	-2.60%	-1.91%
Demand + Reserve Schedule (MW)	max	13,206.26	13,263.01	13,205.02	-0.43%	0.01%
	min	8,994.69	8,920.12	9,228.37	0.84%	-2.53%
	ave	11,070.48	11,255.32	11,209.32	-1.64%	-1.24%
Supply Margin (MW)	max	1,077.06	958.35	1,051.96	12.39%	2.39%
	min	335.79	-353.15	-0.18	195.08%	190%
	ave	692.06	525.76	532.35	31.63%	30.00%

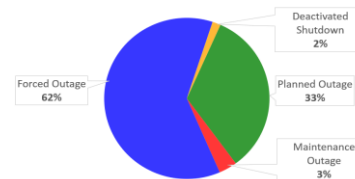
CAPACITY PROFILE



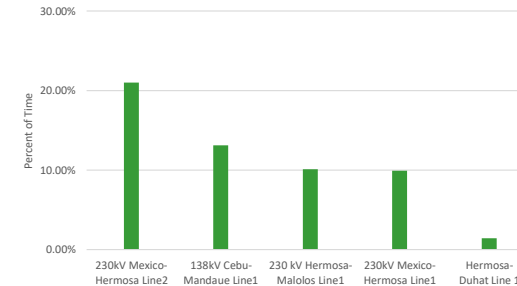
CAPACITY ON OUTAGE BY PLANT TYPE



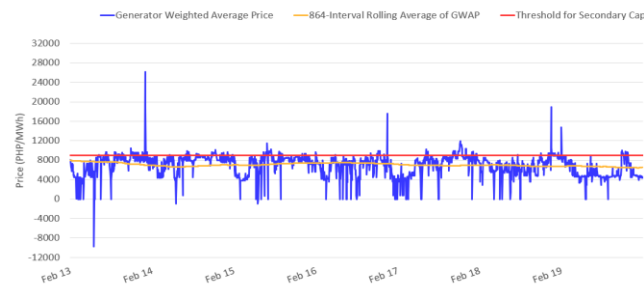
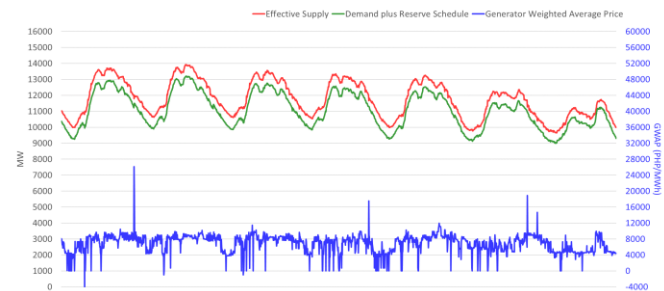
CAPACITY ON OUTAGE BY OUTAGE CATEGORY



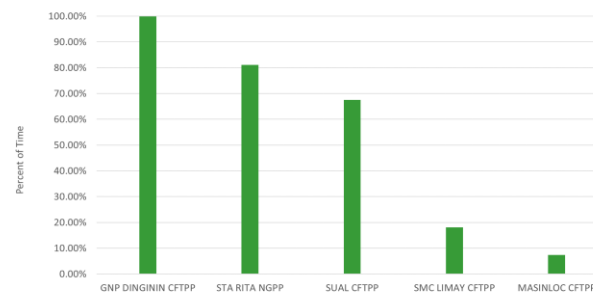
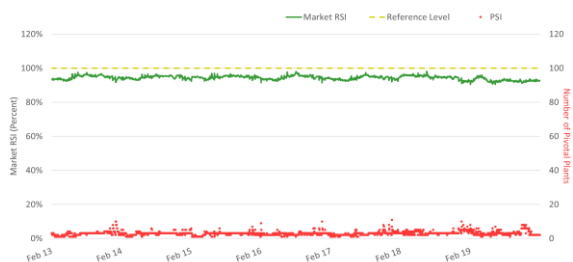
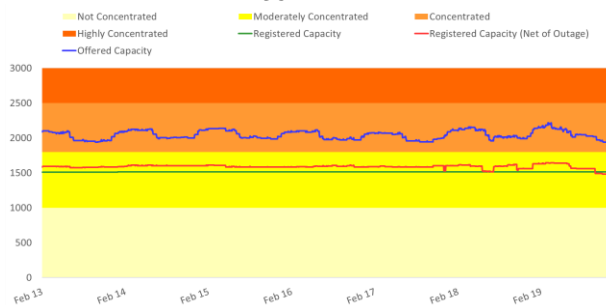
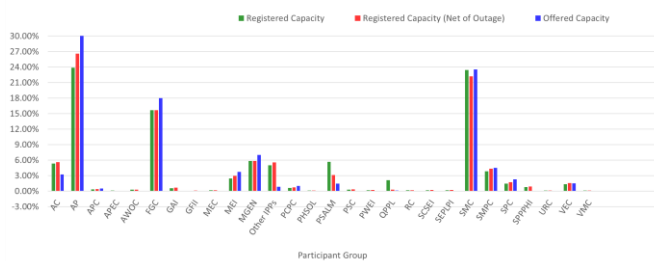
RTD CONGESTION



GENERATOR WEIGHTED AVERAGE PRICE



PSI

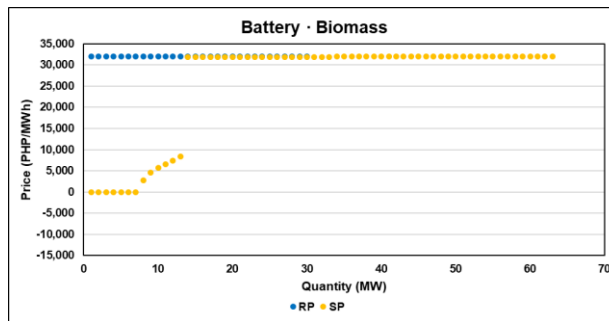
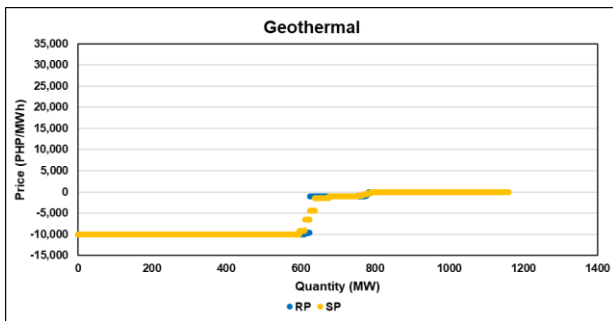
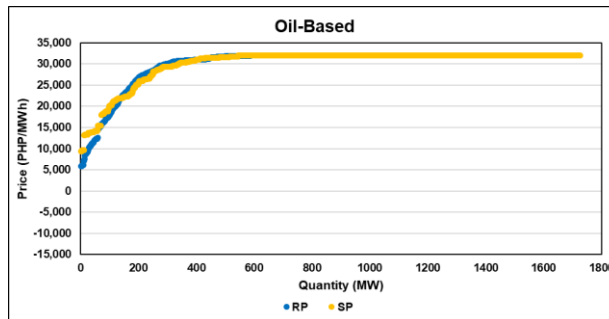
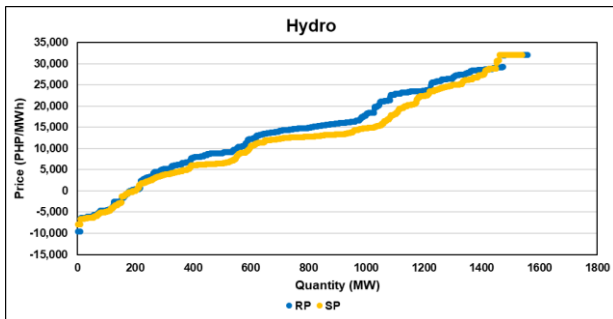
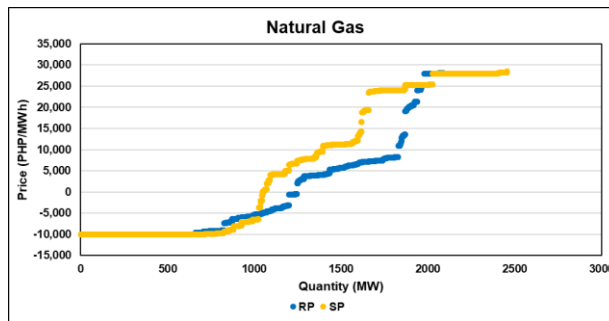
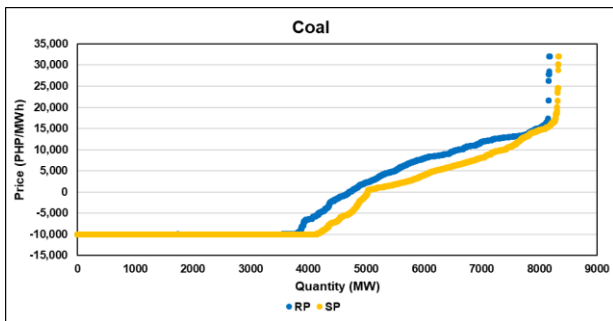
**HERFINDAHL-HIRSCHMAN INDEX**

OFFER PATTERN ANALYSIS

Legend

RP: Reference Offer Price – the week of 06-12 Feb 2023 was used as a control for the comparison with the subject price

SP: Subject Offer Price – the week of 13-19 Feb 2023



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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