

## PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 11,255 MW during the week of 06 - 12 Feb 2023, was higher than the previous week at 10,974 and higher than the same week last year at 10,992 MW.

- The average effective supply during the week was 11,781 MW, higher than the 11,638 MW of the previous week and higher than the 11,536 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.

- The capacity on outage averaged at 4,082 MW, lower than last week's 4,299 MW. About 40% of the 4,082 MW involved Coal plants, while in terms of category, about 47% were Planned Outages.

- As a result, an average supply margin of 526 MW was observed during the week, which is lower by about 21% relative to the previous week and lower by about 3.3% in comparison with the same week last year. The supply deficit reached 353.15 MW on 09 February 2023 16:50 attributable to the outage of GNP Dinginin CFTPP unit 1 and Mariveles CFTPP unit 1 due to SIPS activation caused by tripping of Hermosa-Duhat 230kV Line. The average supply margin was 461.15 MW at peak intervals and 576.62 MW at off-peak intervals.

- Correspondingly, average GWAP was recorded at PHP 8,599/MWh from PHP 6,996/MWh last week. This is higher than the PHP5,934/MWh during the same week last year. Administered Prices were used in the System Operator - initiated market intervention on 08 February 2023 (13:05-16:55) for Visayas.

-The secondary price cap was imposed during 544 intervals out of the 2,016 intervals of the week (about 27% of the time).

- The top 5 participant groups accounted for about 84% 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 –

1. GNP DINGININ CFTPP (about 97.52% of the time)
2. SUAL CFTPP (about 91.12% of the time)
3. STA RITA NGPP (about 87.7% of the time)
4. PAGBILAO CFTPP (about 57.44% of the time)
5. MASINLOC CFTPP (about 56.15% of the time)

- Based on the MMS Solution, the top 5 congested equipment during the week were –

1. 230kV Mexico-Hermosa Line2 (about 18.9% of the time)
2. 230kV Mexico-Hermosa Line1 (about 14.3% of the time)
3. 138kV Cebu-Mandaue Line1 (about 13.4% of the time)
4. 138kV Samboan-Amlan Line1 (about 7.2% of the time)
5. Hermosa-Duhat Line 1 (about 2.6% of the time)

- Natural gas plants recorded higher offer prices during the week related to the shift to alternate fuel by Sta. Rita NGPP and San Lorenzo NGPP following the Malampaya gas facility maintenance shutdown. Moreover, while San Gabriel NGPP was on planned outage\*, Ilijan NGPP Block A resumed its operations during the week from its outage\* since June 2022. Meanwhile, coal plants had higher offered capacity due to resumption of some plants on outage. On the other hand, hydro plants had lower offered capacity.

## IEMOP MARKET SYSTEMS ADVISORY

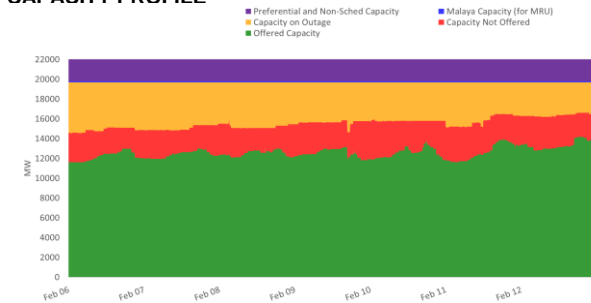
- The System Operator initiated Market Intervention for Visayas on 08 February 2023 (13:05-16:55) due to critical loading on 138kV Cebu-Mandaue Line1.

\*From SDO Daily Operations Report

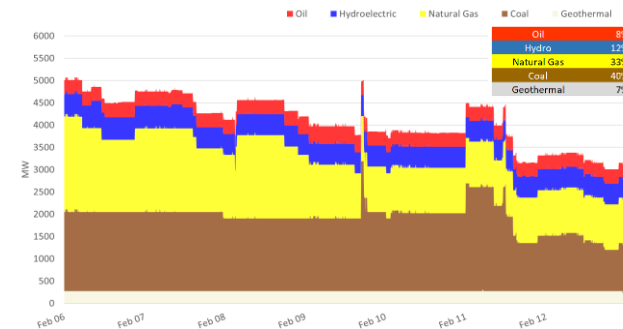
## SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		06 - 12 Feb 2023	Previous Week (30 Jan - 05 Feb 2023)	Same Week, Previous Year (07 - 13 Feb 2022)	Percent Change From	
GWAP (PHP/MWh)	max	33,684.87	30,650.30	31,494.43	9.90%	6.95%
	min	0.00	-974.02	-923.78	100.00%	100.00%
	ave	8,598.75	6,995.69	5,934.17	22.91%	44.90%
Effective Supply (MW)	max	13,653.18	13,683.49	13,485.84	-0.22%	1.24%
	min	9,668.54	9,110.11	9,670.51	6.13%	-0.02%
	ave	11,781.08	11,638.38	11,535.75	1.23%	2.13%
System Demand (MW)	max	12,303.20	12,158.10	11,730.15	1.19%	4.89%
	min	7,928.12	7,233.40	8,080.15	9.60%	-1.88%
	ave	10,254.08	9,891.67	9,962.44	3.66%	2.93%
Demand + Reserve Schedule (MW)	max	13,263.01	13,245.98	13,045.15	0.13%	1.67%
	min	8,920.12	8,340.43	8,920.65	6.95%	-0.01%
	ave	11,255.32	10,973.82	10,991.95	2.57%	2.40%
Supply Margin (MW)	max	958.35	1,002.22	1,083.47	-4.38%	-11.55%
	min	-353.15	135.56	10.94	-360.52%	-3,327.36%
	ave	525.76	664.56	543.80	-20.89%	-3.32%

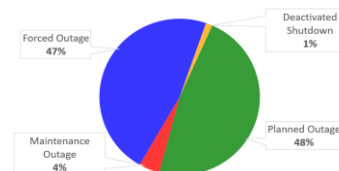
## CAPACITY PROFILE



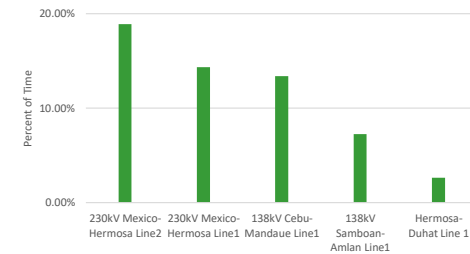
## CAPACITY ON OUTAGE BY PLANT TYPE



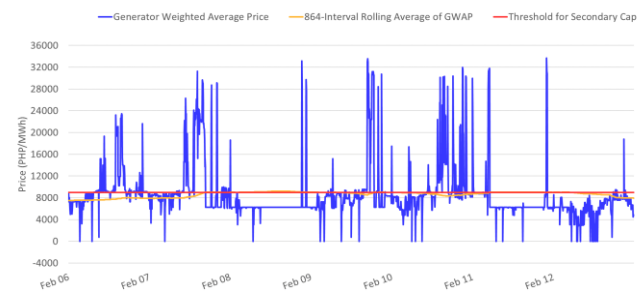
## CAPACITY ON OUTAGE BY OUTAGE CATEGORY



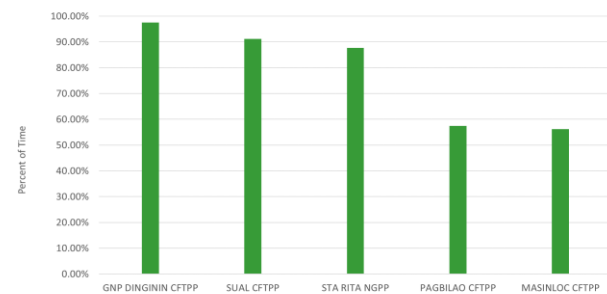
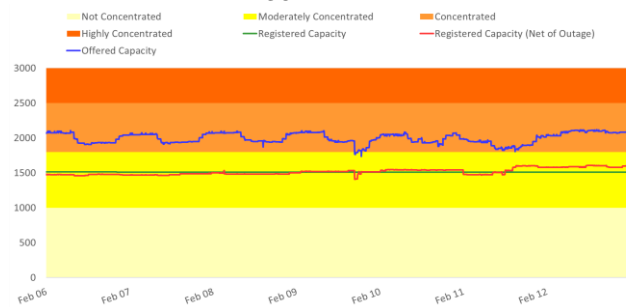
## RTD CONGESTION



### GENERATOR WEIGHTED AVERAGE PRICE



## PSI

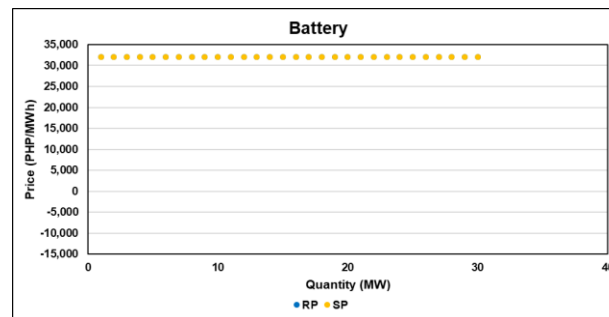
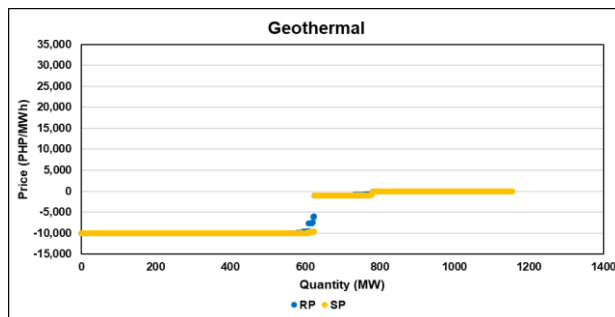
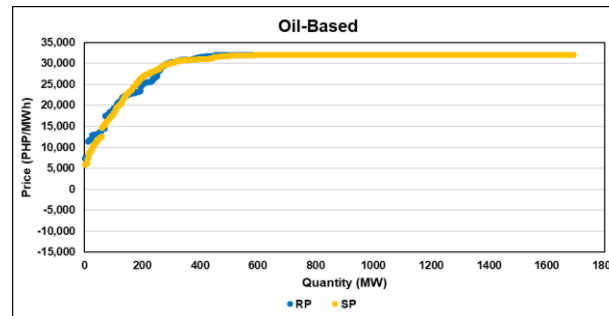
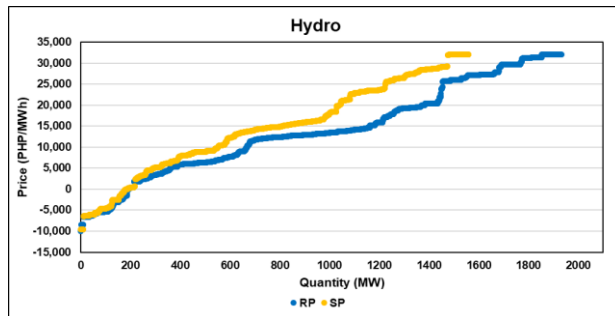
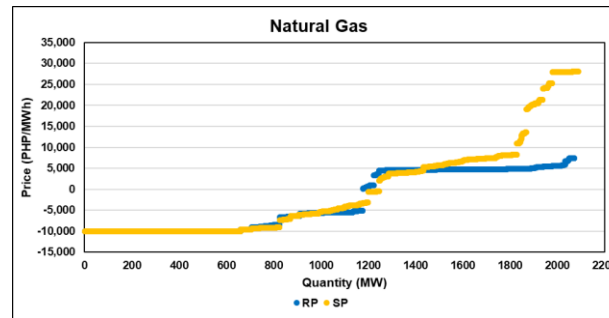
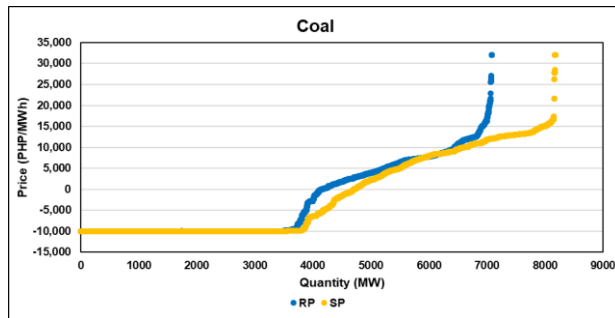
**HERFINDAHL-HIRSCHMAN INDEX**

## OFFER PATTERN ANALYSIS

### Legend

RP: Reference Offer Price – the week of 30 Jan-05 Feb 2023 was used as a control for the comparison with the subject price

SP: Subject Offer Price – the week of 06-12 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.

DISCLAIMER: The information contained in this document is based on the available electricity spot market data. The same information is subject to change as updated figures come in. As such, the PEMC does not make any representation or warranty as to the completeness of this information. The PEMC likewise accepts no responsibility or liability whatsoever for any loss or cost incurred by a reader arising from, or in relation to, any conclusion or assumption derived from the information found herein.