

## PEMC MARKET ASSESSMENT HIGHLIGHTS

The average demand and the reserve schedule, recorded at 11,942 MW during the week of 12 - 18 Feb 2024, was higher than the previous week at 11,863 MW and higher than the same week last year at 11,065 MW.

The average effective supply during the week was 12,588 MW, higher than the 12,564 MW of the previous week and higher than the 11,761 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.

The capacity on outage averaged at 2,389 MW, lower than last week's 2,428 MW. In terms of capacity on outage by plant type, about 51% involved Coal Plants, while in terms of category, about 56% were Planned Outages.

As a result, an average supply margin of 645 MW was observed during the week, which is lower by about 8.0% relative to the previous week and lower by about 6.5% in comparison with the same week last year. The minimum supply margin based on MMS solution was 262.36 MW on 16 February 2024 21:05h. The average supply margin was 658.83 MW at peak intervals and 634.64 MW at off-peak intervals.

Correspondingly, average GWAP was recorded at PHP 4,084/MWh from PHP 3,493/MWh last week. This is lower than the PHP6,816/MWh during the same week last year.

No secondary price cap was imposed for this week.

The top 5 participant groups accounted for about 77% of the offered capacity. The Herfindahl-Hirschman Index (HHI) by participant group indicated mostly 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 99.26% of the time)
2. MASINLOC CFTPP (about 97.12% of the time)
3. ILJUAN NGPP (about 91.12% of the time)
4. STA RITA NGPP (about 88.44% of the time)
5. SUAL CFTPP (about 70.49% of the time)

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

1. 230 kV Tabango\_Daan Bantayan (about 4.1% of the time)
2. 230kV Bauang-Latrinidad Line1 (about 1.8% of the time)
3. 230kV Bauang-Latrinidad Line2 (about 1.5% of the time)
4. 138kV Samboan-Amlan Line1 (0.45% of the time)
5. Binan\_Transformer 2 (0.05% of the time)

### OPA ANALYSIS

- The offered capacities of coal plants were lower than the previous week due to the increase in capacity on outages. It was also observed that there was an intermittent decrease in offered capacity for the whole week due to simultaneous testing of coal plants for their Plant Performance Test, which were scheduled thru security limits by the NGCP-SO.
- The hydro plants offered slightly lower than the previous week due to the increase in capacity on outages. Notably, during the first four days, during the afternoon peak hours, there was an observed offered capacity of approximately 183 MW, with prices ranging from Php 25,000/MWh to Php 30,000/MWh.
- Natural Gas experienced an increase in offered capacity due to lower outages compared to the previous week. The observed lower offered capacity for a couple of hours per day for the whole week was due to the simultaneous testing of Natural Gas Plants for their Plant Performance Test, which were scheduled through the security limit by the NGCP-SO.
- The lowest Solar Plants nomination was recorded on February 12, while the highest was recorded on February 17.
- The lowest nomination for Wind Plants was recorded on February 15, while the highest was on February 12.

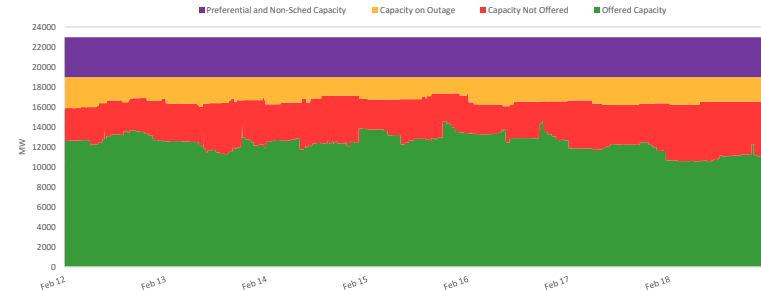
### IEMOP MARKET SYSTEMS ADVISORY

- No IT-related issue was advised related to IEMOP's market systems from 12 - 18 Feb 2024.

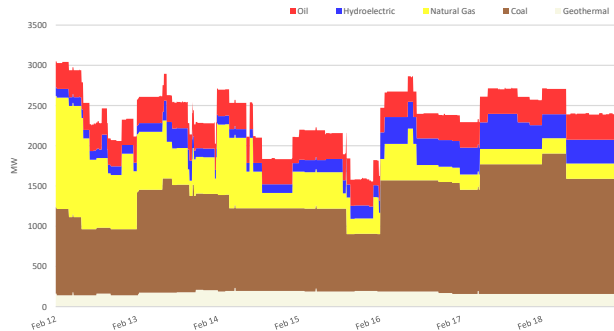
## SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		12 - 18 Feb 2024	Previous Week (05 - 11 Feb 2024 )	Same Week, Previous Year (13 - 19 Feb 2023)	Percent Change From	
					Previous Week	Same Week, Prev Year
GWAP (PHP/MWh)	max	15,267.443	19,523.260	25,000.000	-21.799%	-38.930%
	min	-797.737	-1,222.097	-9,767.141	34.724%	91.832%
	ave	4,084.379	3,492.646	6,815.649	16.942%	-40.074%
Effective Supply (MW)	max	14,902.022	15,236.960	13,923.451	-2.198%	7.028%
	min	10,111.598	10,137.639	9,642.387	-0.257%	4.866%
	ave	12,587.763	12,564.456	11,761.254	0.185%	7.027%
System Demand (MW)	max	13,011.010	13,018.570	12,051.650	-0.058%	7.960%
	min	8,490.830	8,482.280	0.000	0.101%	-
	ave	10,872.512	10,734.044	9,982.768	1.290%	8.913%
Demand + Reserve Schedule (MW)	max	14,330.350	14,537.280	13,206.290	-1.423%	8.512%
	min	9,319.990	9,368.290	0.000	-0.516%	-
	ave	11,942.467	11,863.104	11,064.958	0.669%	7.931%
Supply Margin (MW)	max	1,074.112	1,097.710	1,076.584	-2.150%	-0.230%
	min	262.363	355.229	0.000	-26.143%	-
	ave	645.296	701.352	690.462	-7.993%	-6.541%

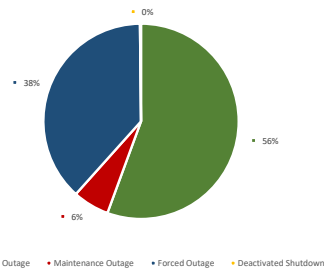
## CAPACITY PROFILE



## CAPACITY ON OUTAGE BY PLANT TYPE



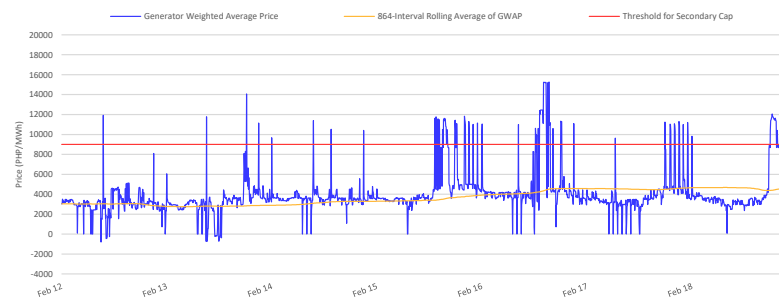
## CAPACITY ON OUTAGE BY OUTAGE CATEGORY



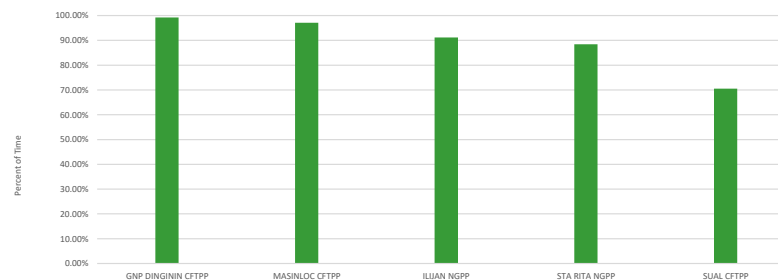
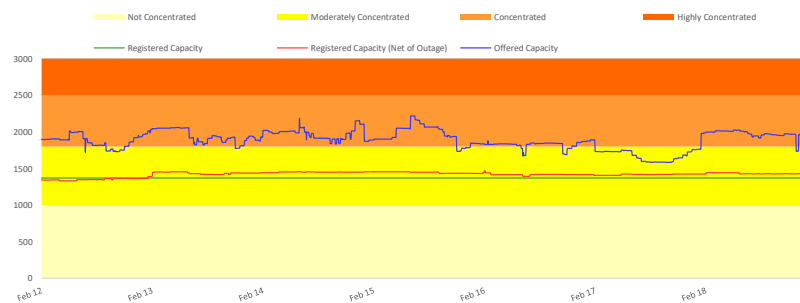
## RTD CONGESTION



### GENERATOR WEIGHTED AVERAGE PRICE

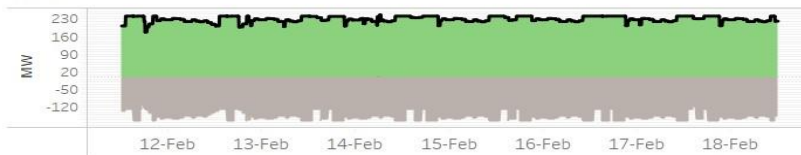


## PSI

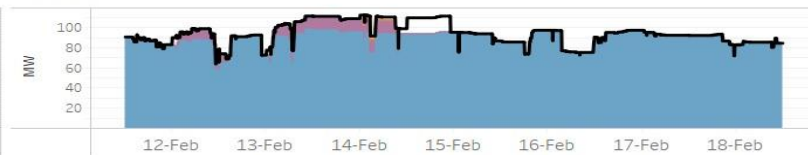
**HERFINDAHL-HIRSCHMAN INDEX**

**OFFER PATTERN ANALYSIS**

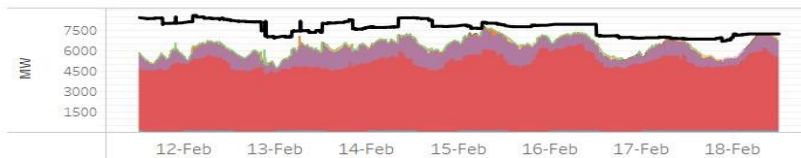
**BATTERY**



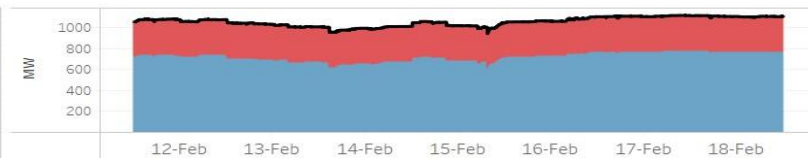
**BIOFUEL**



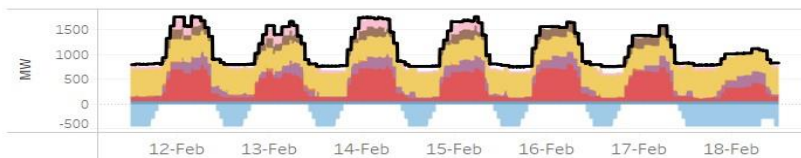
**COAL**



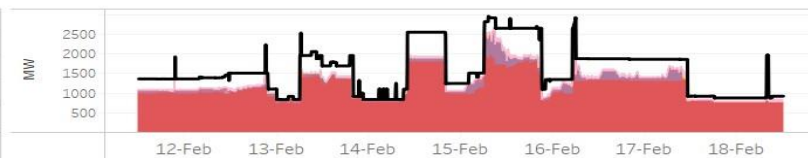
**GEO THERMAL**



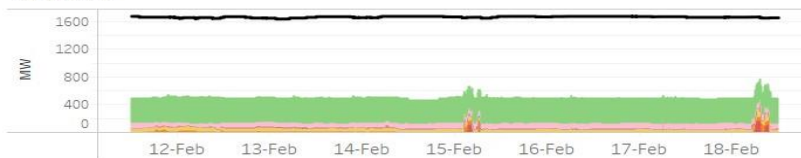
**HYDRO**



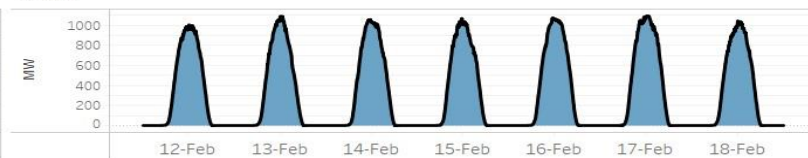
**NATURAL GAS**



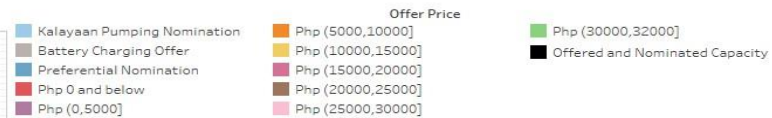
**OIL-BASED**



**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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