

**PEMC MARKET ASSESSMENT HIGHLIGHTS**

- The average demand and the reserve schedule, recorded at 11,863 MW during the week of 05 - 11 Feb 2024, was higher than the previous week at 11,788 MW and higher than the same week last year at 11,255 MW.
- The average effective supply during the week was 12,564 MW, higher than the 12,449 MW of the previous week and higher than the 11,780 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
  - The capacity on outage averaged at 2,433 MW, higher than last week's 2,283 MW. In terms of capacity on outage by plant type, about 40% of the 2,433 MW involved Coal Plants, while in terms of category, about 53% were Forced Outages.
- As a result, an average supply margin of 701 MW was observed during the week, which is higher by about 7% relative to the previous week and higher by about 34% in comparison with the same week last year. The minimum supply margin based on MMS solution was 355.23 MW on 06 February 2024 21:05h. The average supply margin was 657.91 MW at peak intervals and 721.93 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 3,493/MWh from PHP 3,299/MWh last week. This is lower than the PHP8,594/MWh during the same week last year.
  - No secondary price cap was imposed for this week
- The top 5 participant groups accounted for about 75% 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 98.12% of the time)
  2. MASINLOC CFTPP (about 86.76% of the time)
  3. STA RITA NGPP (about 82.54% of the time)
  4. SUAL CFTPP (about 63.29% of the time)
  5. ILUJAN NGPP (about 52.73% of the time)
- Based on the MMS Solution, the congested equipment during the week were –
  1. 230 kV Tabango\_Daan Bantayan (about 17.7% of the time)
  2. 138kV Samboan-Amlan Line1 (about 8.6% of the time)
  3. MAKBAN-B\_Transformer 3 (about 0.3% of the time)
  4. Duhat\_Transformer 1 (about 0.1% of the time)

**OPA\_ANALYSIS**

- The offered capacities of coal plants were comparable to those of the previous week. It was observed that there were fewer offers starting from February 09 due to an increase in capacity outages.
- The hydro plants offered a similar pattern compared to the preceding week. Notably, from February 05 to 10, 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 (NatGas) experienced a reduction in offered capacity due to LNG commissioning tests conducted by San Gabriel on February 5. The remaining days with lower offers were attributed to the Sta. Rita Plants. However, these plants were scheduled within the security limits imposed by the NGCP-SO.
- The lowest Solar Plants nomination was recorded on February 06 while the highest was recorded on February 08.
- The lowest nomination for Wind Plants was recorded on February 08 while the highest was on February 11.

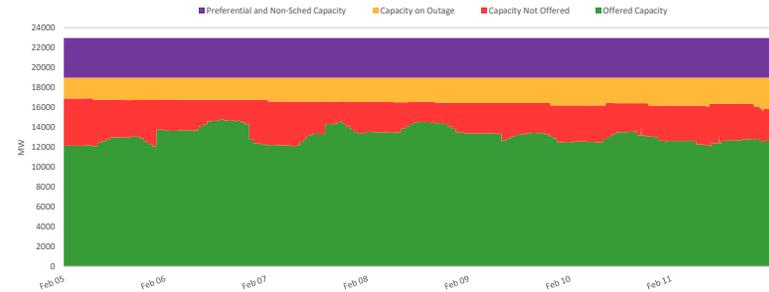
**IEMOP MARKET SYSTEMS ADVISORY**

- No IT-related issue was advised in IEMOP's market systems from 05 - 11 Feb 2024.

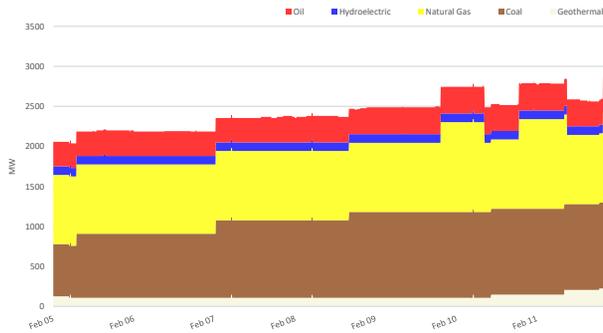
**SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)**

Particulars		05 - 11 Feb 2024	Previous Week (29 Jan - 04 Feb 2024 )	Same Week, Previous Year (06 - 12 Feb 2023)	Percent Change From	
					Previous Week	Same Week, Prev Year
GWAP (PHP/MWh)	max	19,523.260	28,122.400	33,684.865	-30.58%	-42.04%
	min	-1,222.097	-0.011	0.000	-11M%	-
	ave	3,492.646	3,298.720	8,594.078	5.88%	-59.36%
Effective Supply (MW)	max	15,236.960	14,315.131	13,652.284	6.44%	11.61%
	min	10,137.639	9,972.350	9,668.540	1.66%	4.85%
	ave	12,564.456	12,448.922	11,780.434	0.93%	6.66%
System Demand (MW)	max	13,018.570	12,322.930	12,303.170	5.65%	5.81%
	min	8,482.280	0.000	7,928.090	-	6.99%
	ave	10,734.044	10,513.529	10,254.068	2.10%	4.68%
Demand + Reserve Schedule (MW)	max	14,537.280	13,509.770	13,262.940	7.61%	9.61%
	min	9,368.290	0.000	8,920.090	-	5.02%
	ave	11,863.104	11,787.778	11,255.312	0.64%	5.40%
Supply Margin (MW)	max	1,097.710	1,026.743	958.380	6.91%	14.54%
	min	355.229	0.000	-363.078	-	197.84%
	ave	701.352	654.969	525.122	7.08%	33.56%

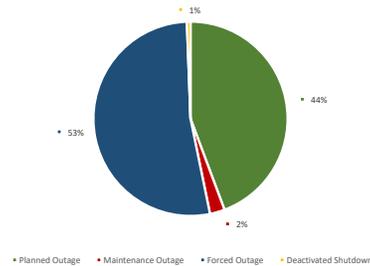
**CAPACITY PROFILE**



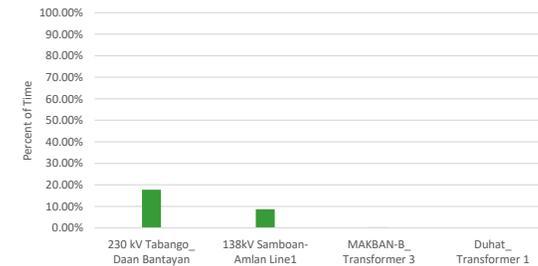
**CAPACITY ON OUTAGE BY PLANT TYPE**



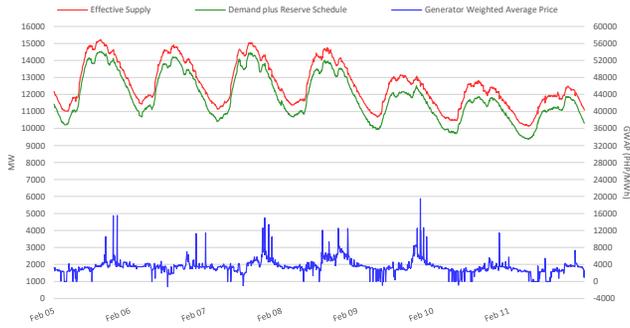
**CAPACITY ON OUTAGE BY OUTAGE CATEGORY**



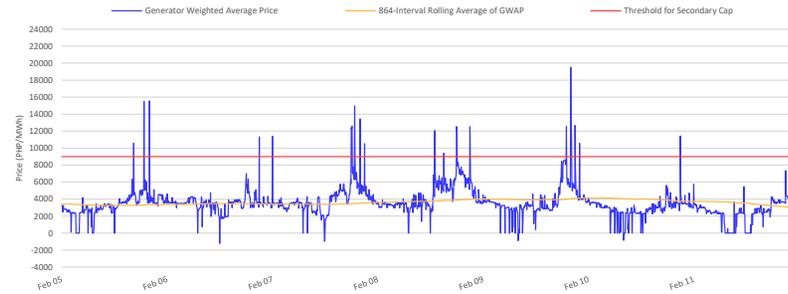
**RTD CONGESTION**



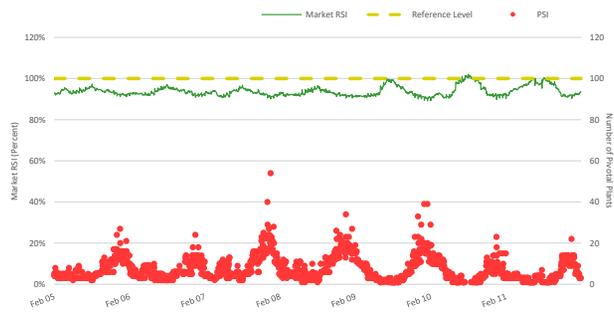
## SUPPLY, DEMAND AND PRICE



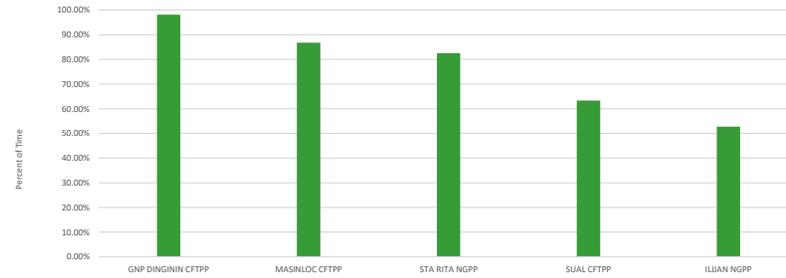
## GENERATOR WEIGHTED AVERAGE PRICE



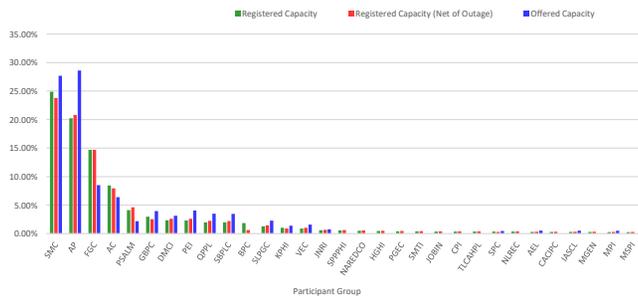
## MARKET RSI VS PIVOTAL PLANTS



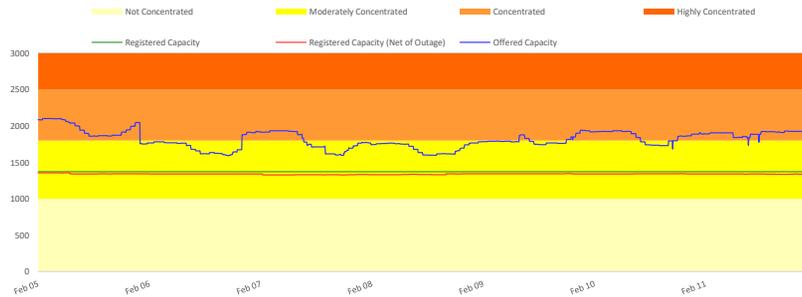
## PSI



## MARKET SHARE

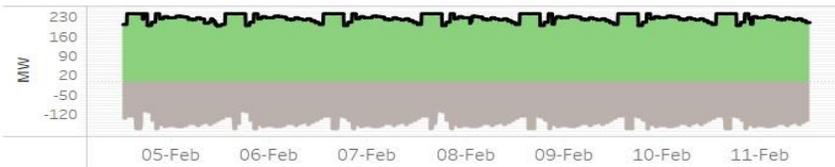


## HERFINDAHL-HIRSCHMAN INDEX

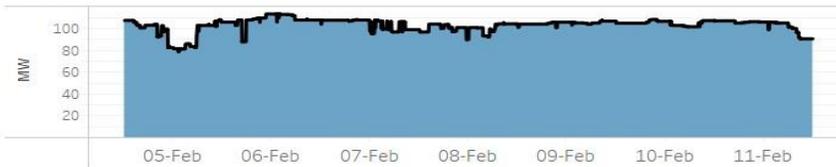


**OFFER PATTERN ANALYSIS**

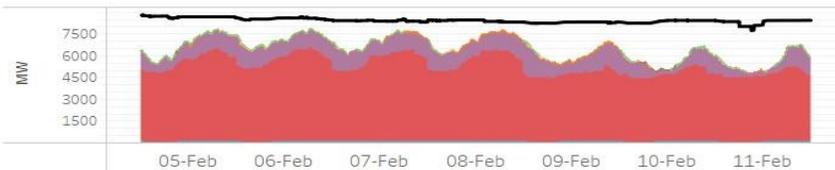
**BATTERY**



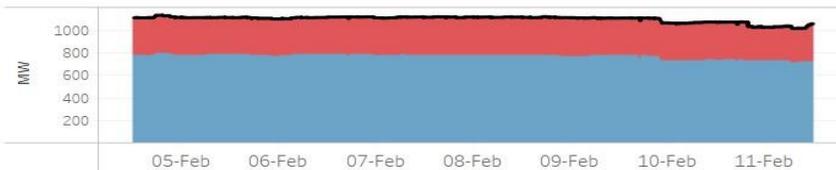
**BIOFUEL**



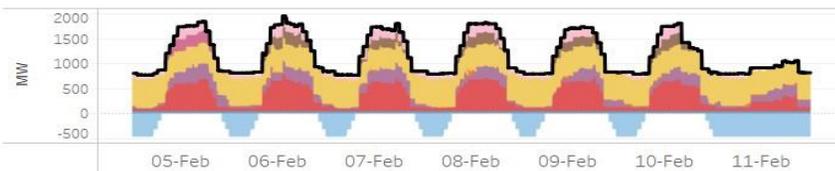
**COAL**



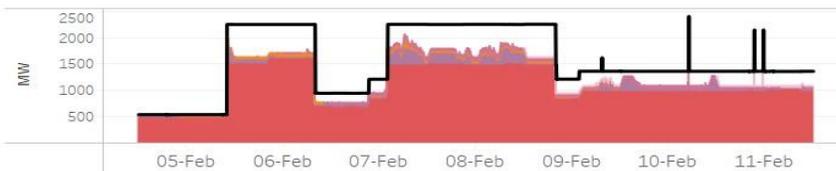
**GEOHERMAL**



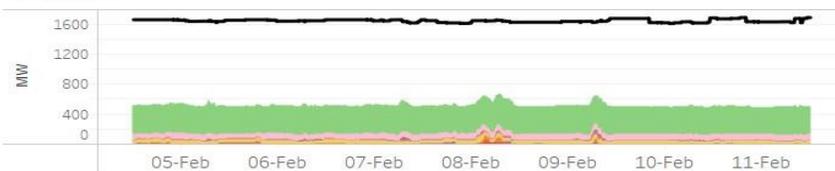
**HYDRO**



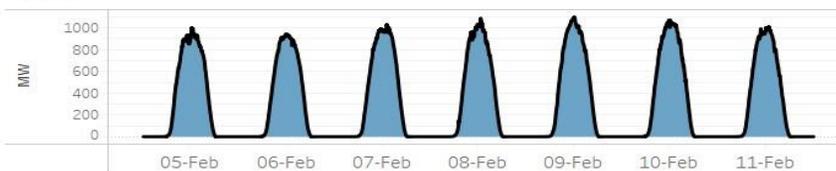
**NATURAL GAS**



**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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