

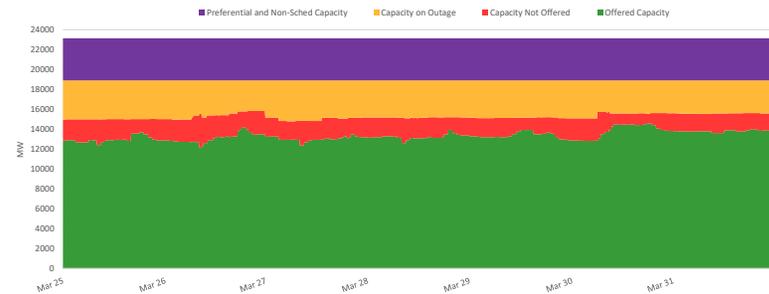
**PEMC MARKET ASSESSMENT HIGHLIGHTS**

- The average demand and the reserve schedule, recorded at 12,130 MW during the week of 25 - 31 Mar 2024, was lower than the previous week at 12,765 MW and lower than the same week last year at 12,274 MW.
- The average effective supply during the week was 12,676 MW, lower than the 13,306 MW of the previous week and lower than the 12,787 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
  - The capacity on outage averaged at 3,582 MW, higher than last week's 2,838 MW. In terms of capacity on outage by plant type, about 40% of the 3,582 MW involved Coal Plants, while in terms of category, about 42% were Forced Outages.
- As a result, an average supply margin of 545 MW was observed during the week, which is higher by about 0.802% relative to the previous week and higher by about 6% in comparison with the same week last year. The thinnest supply margin based on MMS solution was 53.34 MW on 26 March 2024 21:15. The average supply margin was 415.66 MW at peak intervals and 587.55 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 4,781/MWh from PHP 4,254/MWh last week. This is lower than the PHP8,717/MWh during the same week last year. Administered Prices were used in all regions during the Market Operator (MO) initiated market intervention for the following intervals: March 26 (19:30h - 19:40h), March 27 (21:35h), and March 28 (16:35h)
  - No secondary price cap was imposed for this week.
- The top 5 participant groups accounted for about 78% of the offered capacity. The Herfindahl-Hirschman Index (HHI) by participant group indicated partially 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 CF TPP (about 91.77% of the time)
  2. STA RITA NGPP (about 84.47% of the time)
  3. SMC LIMAY CF TPP (about 74.21% of the time)
  4. SBPLC CF TPP (about 71.58% of the time)
  5. MARIVELES CF TPP (about 71.58% of the time)
- Based on the MMS Solution, the top 5 congested equipment during the week were –
  1. 230kV Calatrava-Cadiz (about 30.6% of the time)
  2. 138kV Samboan-Amlan Line1 (about 21.7% of the time)
  3. Cebu to Negros (about 17.1% of the time)
  4. 138kV Maasin-Ubay Line 2 (about 15.4% of the time)
  5. 138kV Samboan-Amlan Line2 (about 1.8% of the time)
- OFFER PATTERN ANALYSIS
  - The offered capacity of coal plants was lower than the previous week due to a notable increase in outages. However, there was intermittent lower offered capacity observed within the week, attributed to simultaneous testing of plants scheduled thru security limits imposed by the Systems Operator.
  - The offered capacity of the hydro plants was higher than the previous week due to a fewer outages. Moreover, from March 25-27 and 30, the observed capacity ranged from around 180MW to 230MW, offered at prices ranging from Pph 30,000/MWh to Pph 32,000/MWh.
  - The lower offered capacity of natural gas plants from March 25 to 26 was attributed to a notable increase in forced outages.
  - The lowest Solar Plant nomination was recorded on March 26, while the highest was recorded on March 30.
  - The lowest nomination for Wind Plants was recorded on March 29, while the highest was on March 27.
- IEMOP MARKET SYSTEMS ADVISORY
  - Market Operator (MO) initiated Market Intervention across all regions for Real-Time Data (RTD) due to RTD's failure to publish results for the following intervals: March 26 (19:30h - 19:40h), March 27 (21:35h), and March 28 (16:35h).

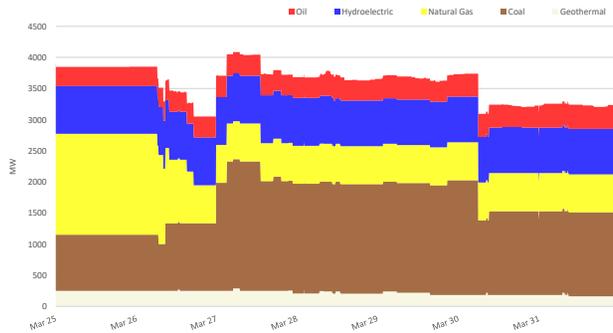
**SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)**

Particulars		25 - 31 Mar 2024	Previous Week (18 - 24 Mar 2024)	Same Week, Previous Year (27 Mar - 02 Apr 2023)	Percent Change From	
					Previous Week	Same Week, Prev Year
GWAP (PHP/MWh)	max	32,521.508	32,218.613	34,222.385	0.940%	-4.970%
	min	-9,795.780	-8,343.833	-1.016	-17.401%	-964k%
	ave	4,781.156	4,253.671	8,717.478	12.401%	-45.154%
Effective Supply (MW)	max	15,845.553	15,744.152	14,773.867	0.644%	7.254%
	min	9,927.433	10,984.681	10,775.372	-9.625%	-7.869%
	ave	12,675.651	13,306.311	12,787.341	-4.740%	-0.873%
System Demand (MW)	max	13,958.570	13,520.620	13,829.580	3.239%	0.933%
	min	8,278.820	9,377.850	9,402.770	-11.719%	-11.953%
	ave	10,910.366	11,428.440	11,660.759	-4.533%	-6.435%
Demand + Reserve Schedule (MW)	max	15,613.040	15,146.200	14,603.610	3.082%	6.912%
	min	9,259.700	10,410.450	9,985.770	-11.054%	-7.271%
	ave	12,130.414	12,765.413	12,273.622	-4.974%	-1.167%
Supply Margin (MW)	max	1,100.194	876.945	1,217.928	25.458%	-9.667%
	min	53.342	1.528	-406.888	3.39k%	113.110%
	ave	545.237	540.898	513.718	0.802%	6.135%

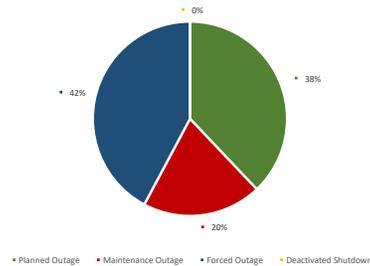
**CAPACITY PROFILE**



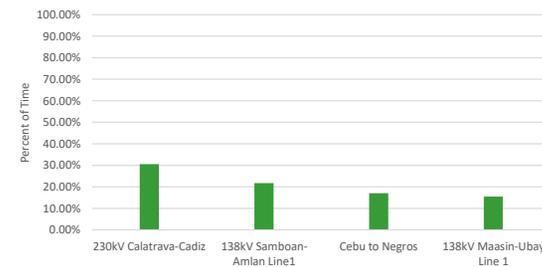
**CAPACITY ON OUTAGE BY PLANT TYPE**



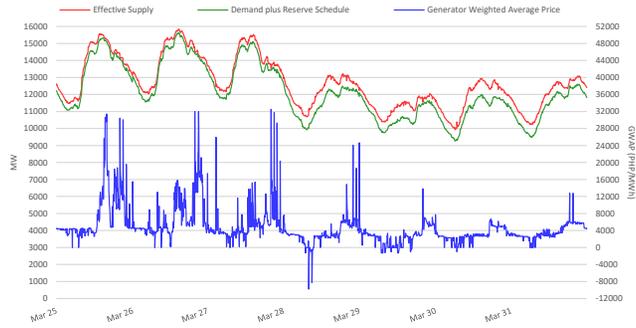
**CAPACITY ON OUTAGE BY OUTAGE CATEGORY**



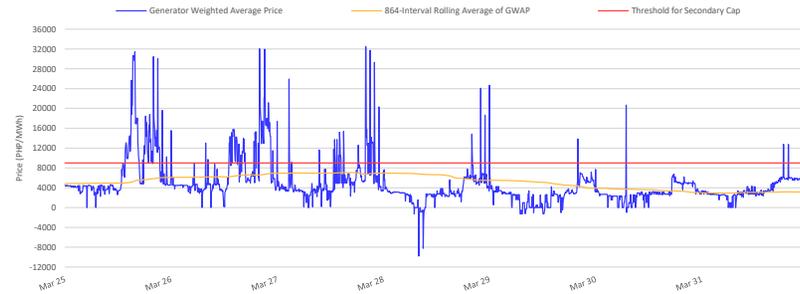
**RTD CONGESTION**



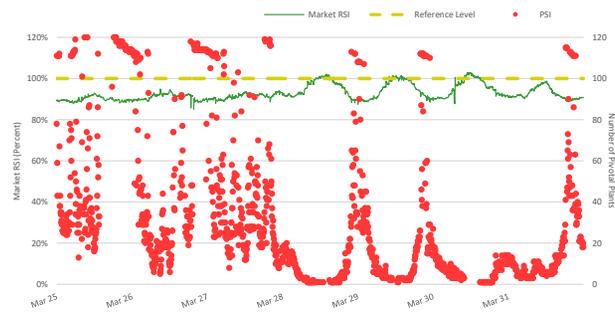
## SUPPLY, DEMAND AND PRICE



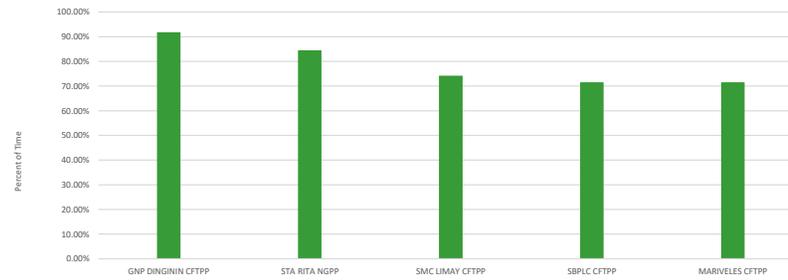
## GENERATOR WEIGHTED AVERAGE PRICE



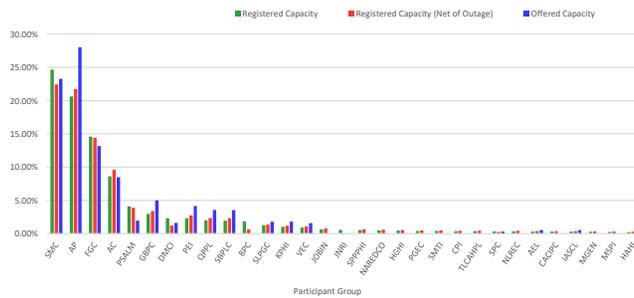
## MARKET RSI VS PIVOTAL PLANTS



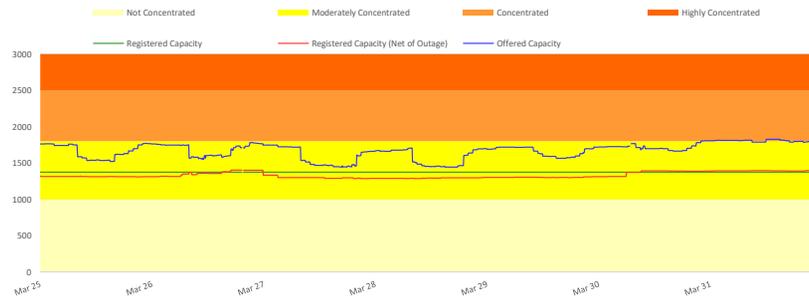
## PSI



## MARKET SHARE

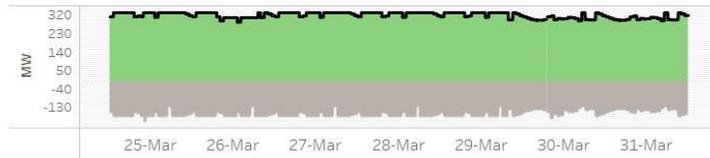


## HERFINDAHL-HIRSCHMAN INDEX

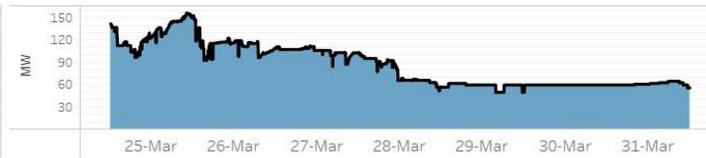


**OFFER PATTERN ANALYSIS**

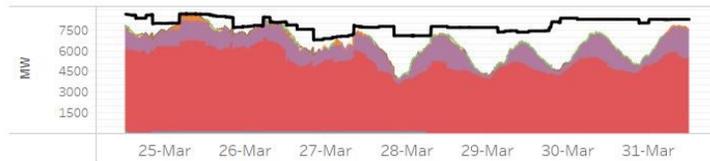
**BATTERY**



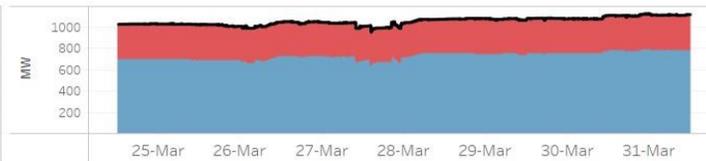
**BIOFUEL**



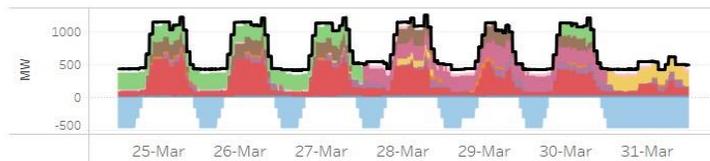
**COAL**



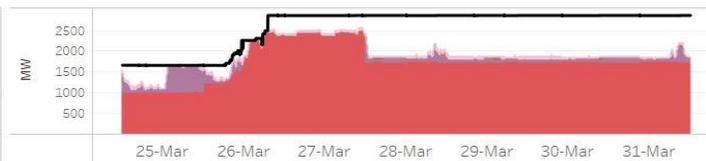
**GEOHERMAL**



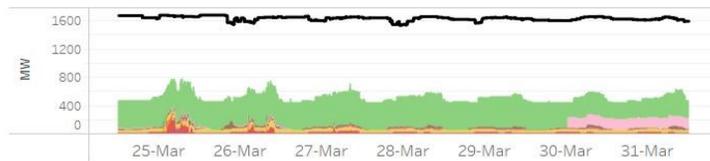
**HYDRO**



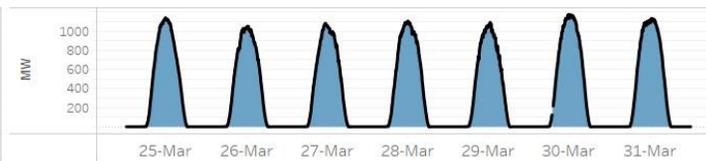
**NATURAL GAS**



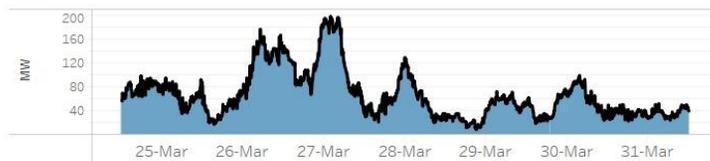
**OIL-BASED**



**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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