

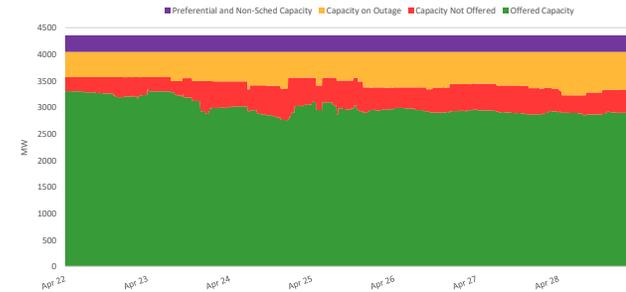
## PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 2,591 MW during the week of 22 - 28 Apr 2024, was lower than the previous week at 2,673 MW.
- The average effective supply during the week was 2,749 MW, lower than the 2,930 MW of the previous week. Ramping limitations were considered in the calculation of the effective supply.
  - The capacity on outage averaged at 596 MW, higher than last week's 579 MW. In terms of capacity on outage by plant type, about 59% of the 596 MW involved Hydroelectric Plants, while in terms of outage by category, about 75% were Forced Outages.
- As a result, an average supply margin of 158 MW was observed during the week, which is lower by about 38.64% relative to the previous week. The supply deficit based on MMS solution was 20.04 MW on 23 April 2024 15:55h. The average supply margin was 119.79 MW at peak intervals and 187.78 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 8,678/MWh from PHP 8,163/MWh last week.
  - The secondary price cap was imposed during 480 intervals out of the 2,016 intervals of the week (about 24% of the time).
- The top 5 participant groups accounted for about 72% of the offered capacity. The Herfindahl-Hirschman Index (HHI) by participant group indicated moderately concentrated market based on the offered and registered capacities.
- The top 5 pivotal plants during the week were –
  - FDC MISAMIS CFTPP (about 99.36% of the time)
  - THERMA SOUTH CFTPP (about 93.65% of the time)
  - GN POWER KAUSWAGAN CFTPP (about 91.77% of the time)
  - SARANGANI CFTPP (about 79.22% of the time)
  - MALITA CFTPP (about 72.47% of the time)
- Based on the MMS Solution, the congested equipment during the week were –
  - Placer\_Transformer 2 (about 2.2% of the time)
  - Naga\_Transformer 1 (about 1.7% 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 from April 24 and 25, which continued through the end of the week.
  - The offered capacity of the hydro plants was lower than the previous week due to resource constraints and outages that started on April 23.
  - The offered capacity in geothermal plants for this week was lower than the previous week due to a minimal increase in outage on April 24. Moreover, around 13MW was offered at prices ranging from Php 20,000/MWh to Php 30,000/MWh on April 22 and 23.
  - The lowest Solar Plant nomination was recorded on April 28, while the highest was recorded on April 25.
- IEMOP MARKET SYSTEMS ADVISORY
  - SO initiated Market Intervention for Luzon Region on April 23,2024 from 15:40h to 16:50h due to the implementation of Manual Load Dropping (MLD) caused by generation deficiency.

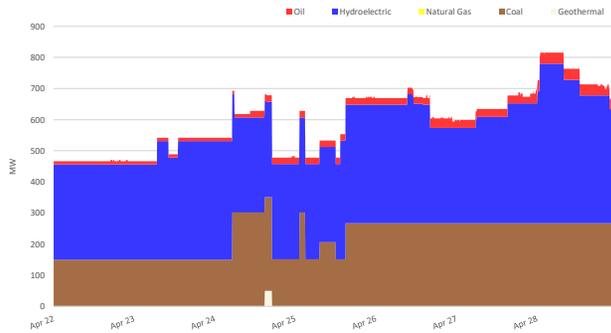
## SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		22 - 28 Apr 2024	Previous Week (15 - 21 Apr 2024)	Percent Change
GWAP (PHP/MWh)	max	39,948.425	39,560.648	0.980%
	min	-1.014	-0.980	-3.469%
	ave	8,678.253	8,163.644	6.304%
Effective Supply (MW)	max	3,216.900	3,466.388	-7.197%
	min	2,129.557	2,336.738	-8.866%
	ave	2,749.303	2,930.322	-6.177%
System Demand (MW)	max	2,671.370	2,655.430	0.600%
	min	1,660.760	1,623.510	2.294%
	ave	2,196.905	2,141.412	2.591%
Demand + Reserve Schedule (MW)	max	3,182.630	3,273.110	-2.764%
	min	1,886.150	2,018.110	-6.539%
	ave	2,591.467	2,673.095	-3.054%
Supply Margin (MW)	max	434.430	660.379	-34.215%
	min	-20.040	-4.577	-337.841%
	ave	157.836	257.227	-38.639%

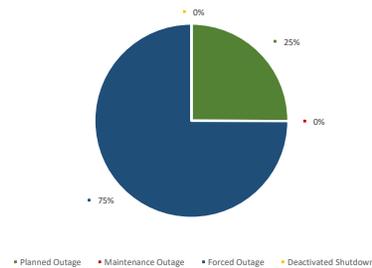
## CAPACITY PROFILE



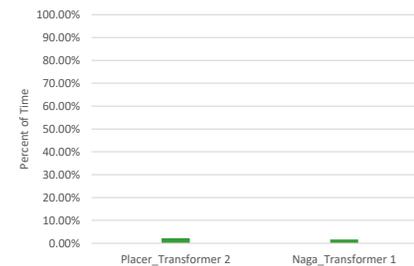
## CAPACITY ON OUTAGE BY PLANT TYPE



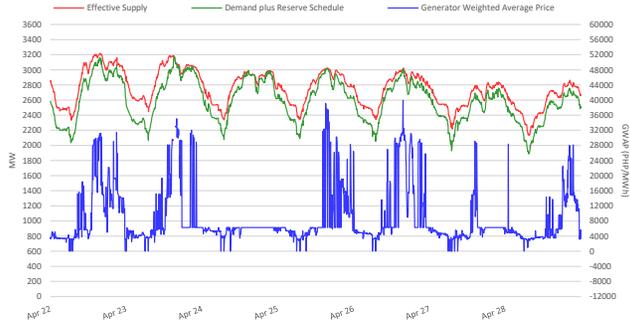
## CAPACITY ON OUTAGE BY OUTAGE CATEGORY



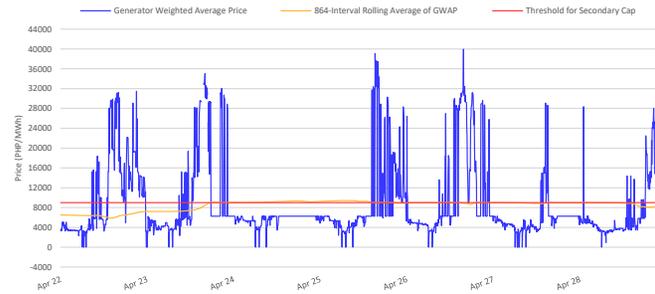
## RTD CONGESTION



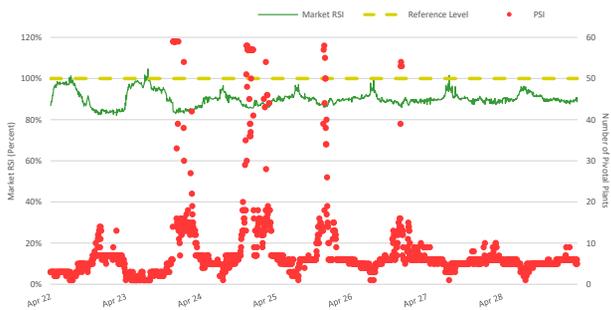
**SUPPLY, DEMAND AND PRICE**



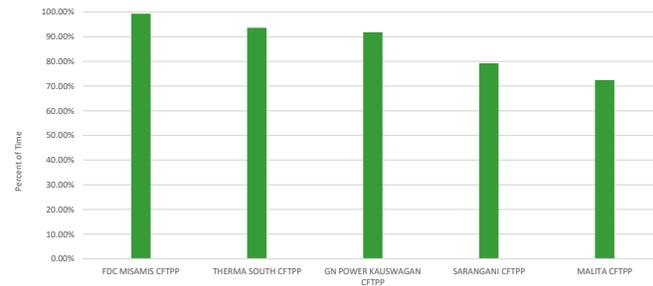
**GENERATOR WEIGHTED AVERAGE PRICE**



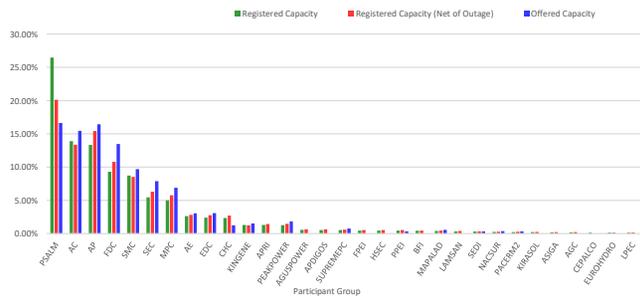
**MARKET RSI VS PIVOTAL PLANTS**



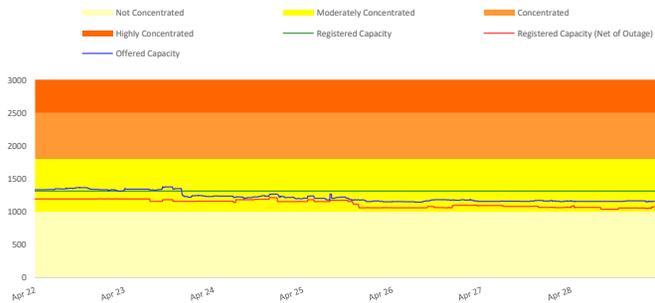
**PSI**



**MARKET SHARE**

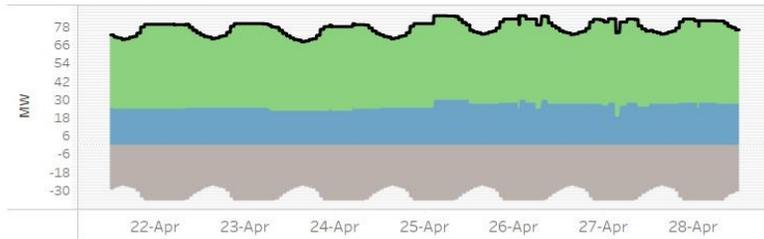


**HERFINDAHL-HIRSCHMAN INDEX**

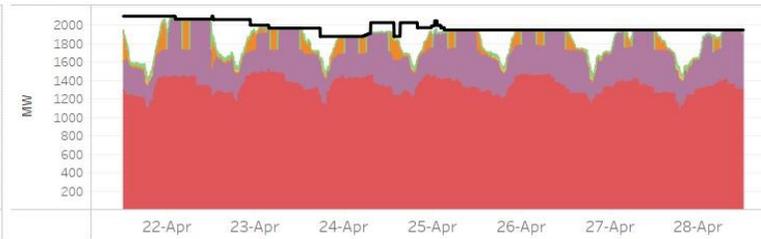


**OFFER PATTERN ANALYSIS**

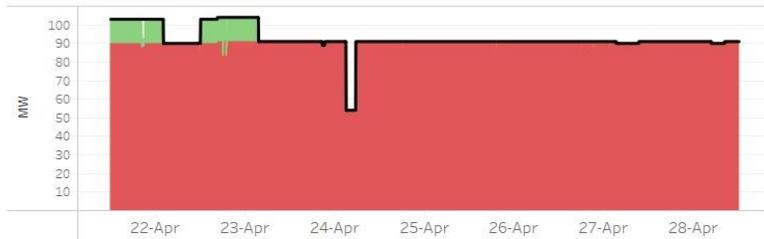
BATTERY AND BIOFUEL



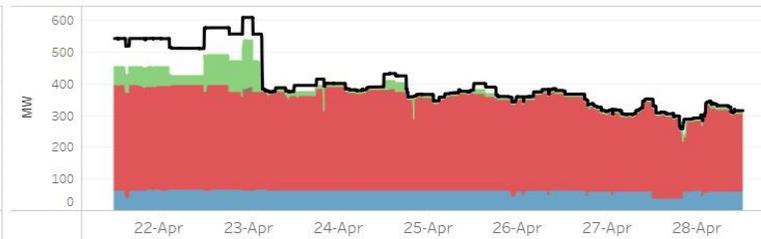
COAL



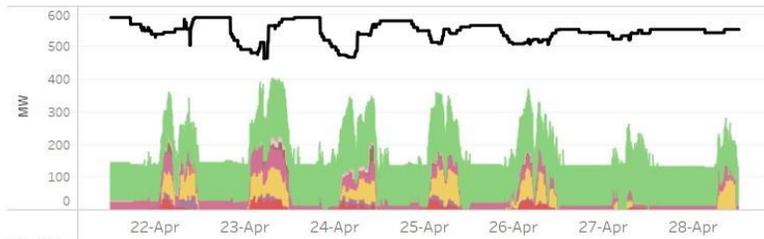
GEO THERMAL



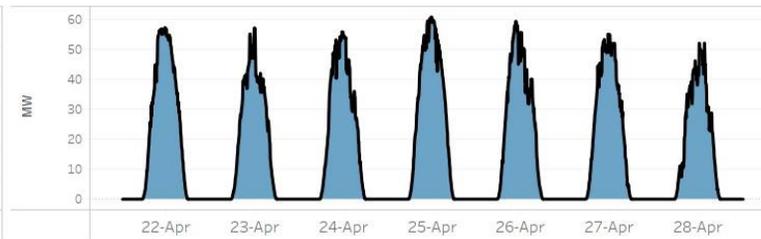
HYDRO



OIL-BASED



SOLAR



**Offer Price**



**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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