

## PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 2,037 MW during the week of 31 Jul -06 Aug 2023, was higher than the previous week at 1,948 MW.
- The average effective supply during the week was 2,245 MW, higher than the 2,132 MW of the previous week. Ramping limitations were considered in the calculation of the effective supply.
  - The capacity on outage averaged at 266 MW, lower than last week's 340 MW. About 61% of the 266 MW involved Coal plants, while in terms of category, about 59% were Maintenance Outages.
- As a result, an average supply margin of 237 MW was observed during the week, which is higher by about 29% relative to the previous week. The thinnest supply margin based on MMS solution was 86.73 MW on 04 August 2023 18:15. The average supply margin was 220.35 MW at peak intervals and 247.17 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 5,523/MWh from PHP 3,659/MWh last week. Administered Prices were used in the Market Operator - initiated market intervention on 4 August 2023 16:05-16:45 for all regions.
  - No secondary price cap was imposed for this week
- The top 5 participant groups accounted for about 74% 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 –
  - GN POWER KAUSWAGAN CFTPP (about 62.4% of the time)
  - MALITA CFTPP (about 47.37% of the time)
  - THERMA SOUTH CFTPP (about 39.34% of the time)
  - SARANGANI CFTPP (about 36.56% of the time)
  - FDC MISAMIS CFTPP (about 23.02% of the time)
- Based on the MMS Solution, the congested equipment during the week was Kidapawan\_Transformer1 (about 1.2% of the time).
- OPA\_ANALYSIS
  - Biofuel plants recorded a maximum nomination of 9MW and has decreased to 3.8MW starting August 4 until the end of the week.
  - Coal plants recorded lower offered capacity on July 31 to August 1 and August 3 to 4 due to plant outages which later synchronized back.
  - Geothermal plants recorded offered capacity ranging from 79MW to 83.2MW
  - Hydro plants' capacity observed a decreasing trend due to multiple outages within the week.
  - Oil-based plants recorded lower offer prices during the peak hours of August 4.
  - Solar plants have almost same nomination levels for the whole week. Maximum nomination was recorded on August 3 with a capacity of 62.8MW.

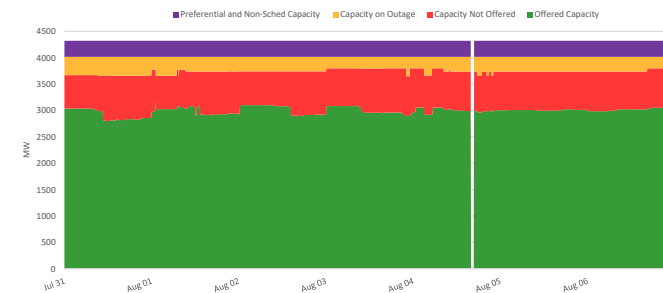
## MEMOP MARKET SYSTEMS ADVISORY

- The Market Operator initiated Market Intervention for Luzon, Visayas and Mindanao on 4 August 2023 16:05-16:45 due to database publication failure.

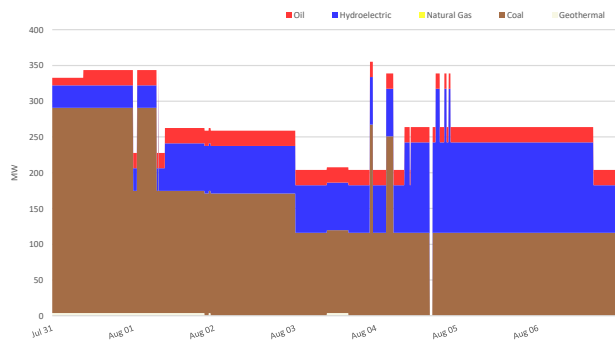
## SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		31 Jul -06 Aug 2023	Previous Week (24-30 Jul 2023)	Percent Change
GWAP (PHP/MWh)	max	32,488.501	27,177.730	19.541%
	min	-10,008.405	-0.010	-100M%
	ave	5,523.221	3,659.385	50.933%
Effective Supply (MW)	max	2,775.948	2,587.177	7.296%
	min	1,755.912	1,757.043	-0.064%
	ave	2,245.272	2,131.947	5.316%
System Demand (MW)	max	2,363.530	2,291.550	3.141%
	min	1,411.650	1,424.290	-0.887%
	ave	1,898.781	1,827.867	3.880%
Demand + Reserve Schedule (MW)	max	2,697.776	2,409.920	11.945%
	min	1,531.650	1,543.871	-0.792%
	ave	2,036.608	1,948.485	4.523%
Supply Margin (MW)	max	414.980	273.626	51.660%
	min	86.727	111.568	-22.265%
	ave	236.528	183.462	28.925%

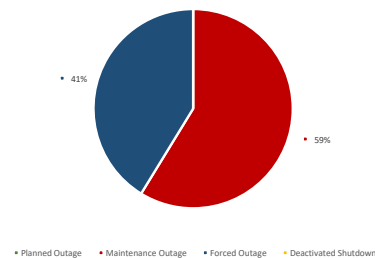
## CAPACITY PROFILE



## CAPACITY ON OUTAGE BY PLANT TYPE



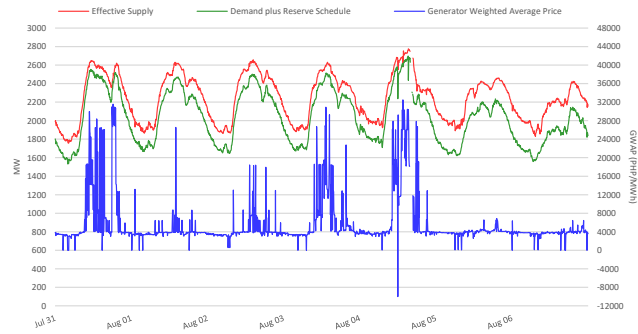
## CAPACITY ON OUTAGE BY OUTAGE CATEGORY



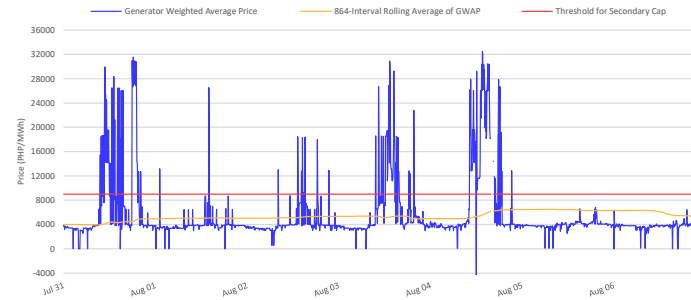
## RTD CONGESTION



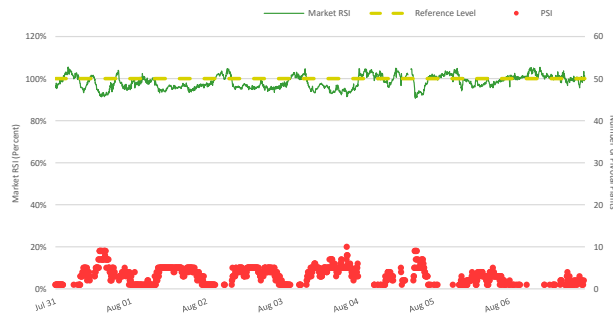
## SUPPLY, DEMAND AND PRICE



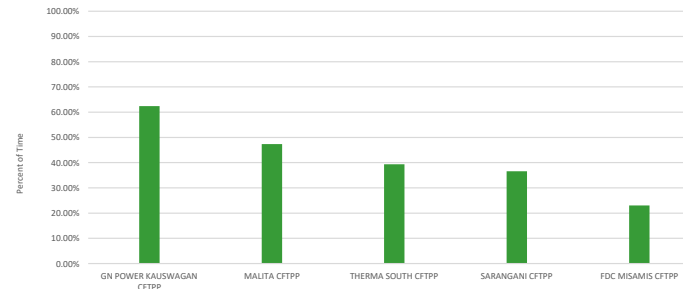
## GENERATOR WEIGHTED AVERAGE PRICE



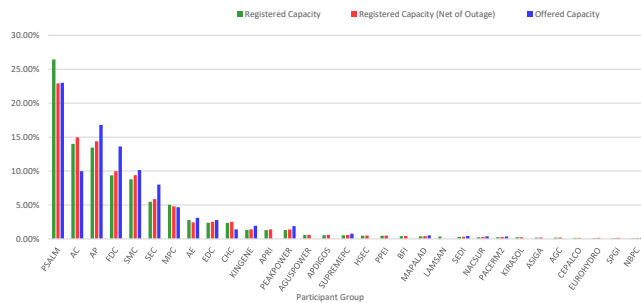
## MARKET RSI VS PIVOTAL PLANTS



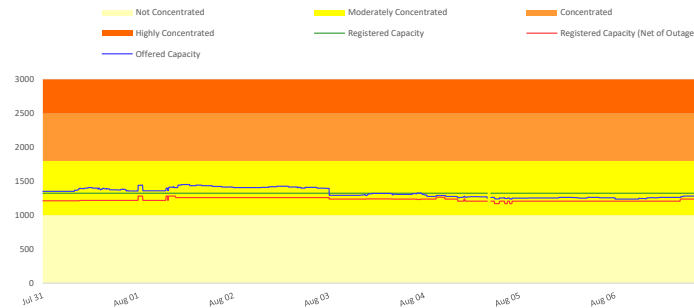
## PSI



## MARKET SHARE

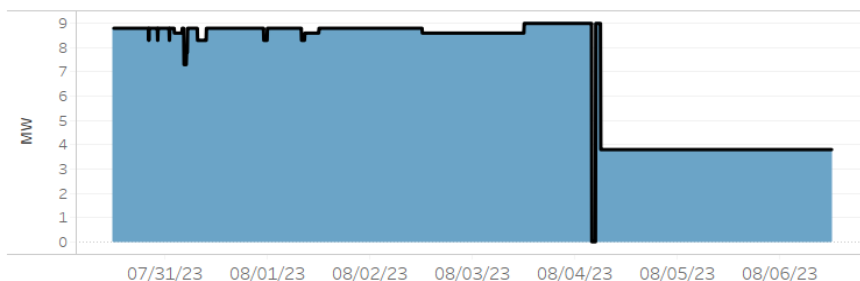


## HERFINDAHL-HIRSCHMAN INDEX

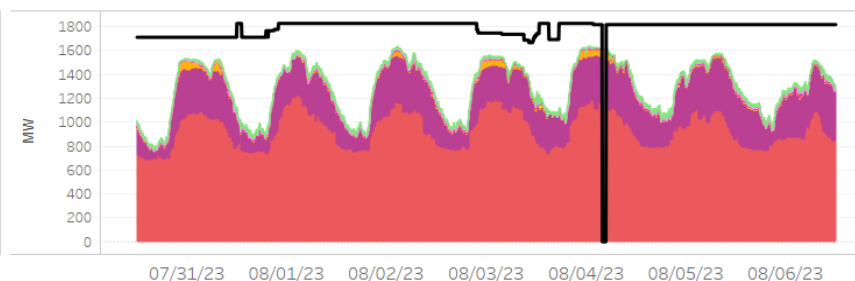


**OFFER PATTERN ANALYSIS**

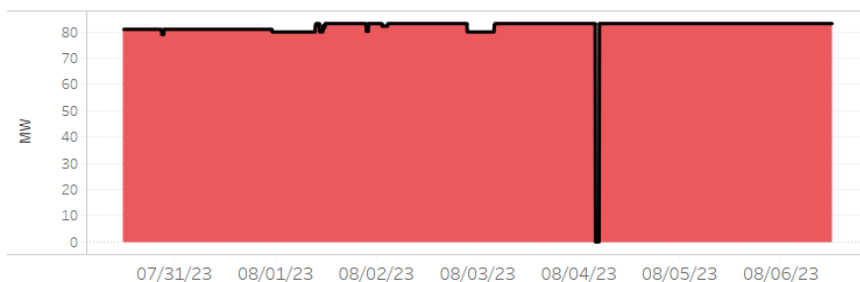
**BIOFUEL**



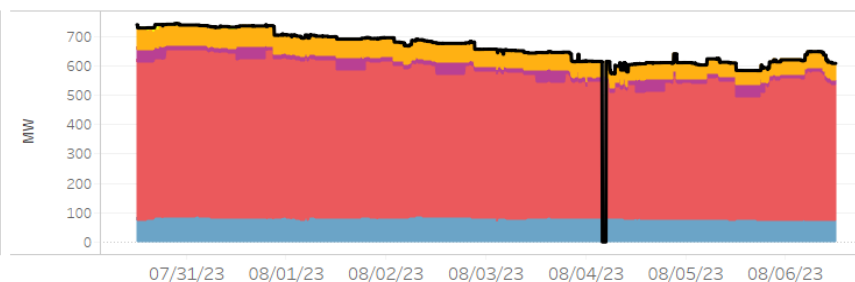
**COAL**



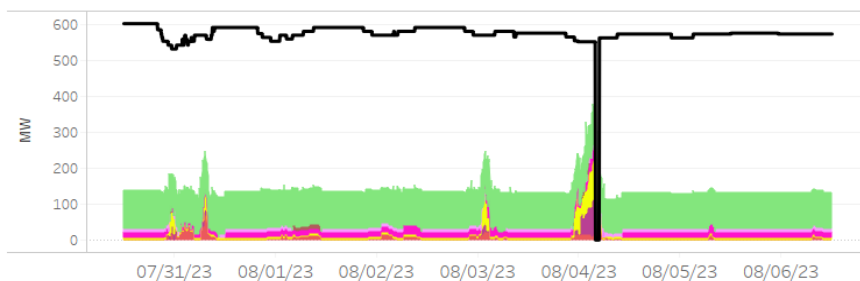
**GEOHERMAL**



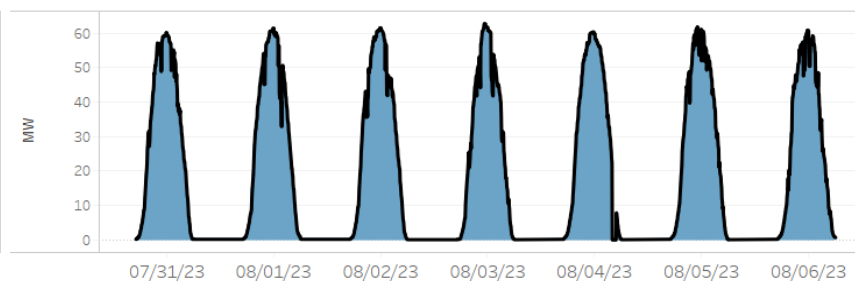
**HYDRO**



**OIL-BASED**



**SOLAR**



■ Preferential Nomination  
■ Php 0 and below

■ Php (0,5000]  
■ Php (5000,10000]

■ Php (10000,15000]  
■ Php (15000,20000]

Offer Price

■ Php (20000,25000]  
■ Php (25000,30000]

■ Php (30000,32000]

■ Offered and Nominated Capacity

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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