

**PEMC MARKET ASSESSMENT HIGHLIGHTS**

- The average demand and the reserve schedule, recorded at 12,031 MW during the week of 21 - 27 Aug 2023, was lower than the previous week at 12,506 MW and higher than the same week last year at 11,376 MW.
- The average effective supply during the week was 12,819 MW, lower than the 13,204 MW of the previous week and higher than the 11,860 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
  - The capacity on outage averaged at 2,395 MW, higher than last week's 2,356 MW. About 47% of the 2,395 MW involved Coal plants, while in terms of category, about 48% were Forced Outages.
- As a result, an average supply margin of 788 MW was observed during the week, which is higher by about 13% relative to the previous week and higher by about 63% in comparison with the same week last year. The minimum supply margin based on MMS solution was 213.45 MW on 22 August 2023 18:35. The average supply margin was 617.89 MW at peak intervals and 893.26 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 5,594/MWh from PHP 5,670/MWh last week. This is lower than the PHP8,857/MWh during the same week last year.
  - No secondary price cap was imposed for this week
- The top 5 participant groups accounted for about 80% 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 CFTPP (about 97.17% of the time)
  2. MASINLOC CFTPP (about 46.23% of the time)
  3. SUAL CFTPP (about 36.26% of the time)
  4. STA RITA NGPP (about 35.91% of the time)
  5. MARIVELES CFTPP (about 29.27% of the time)

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

1. 138kV Maasin-Ubay Line 1 (about 20.3% of the time)
2. 138kV Samboan-Amlan Line1 (0.89% of the time)
3. PGPP1\_Transformer 2 (0.89% of the time)
4. 230 kV Tabango\_Daan Bantayan (0.25% of the time)
5. PGPP1\_Transformer 3 (0.1% of the time)

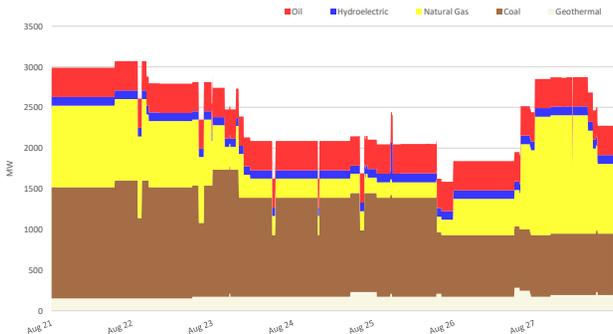
**OPA\_ANALYSIS**

- Biofuel were purely in preferential nomination starting August 24.
- Due to multiple outages and derated capacity, coal plants had varying offered capacity throughout the week. Highest offered capacity were recorded on August 26 to 27.
- Hydro plants' peak offered and nominated capacity was maintained from Monday to Friday. Highest effective supply was recorded on August 24 (Thursday).
- Natural gas plants had increased its offered capacity due to synchronization of Sta. Rita Units 3 and 4 while the significant decrease on August 26 is due to outage of Ilijan Block A. Offered price range of Php 30,000/MWh to Php 32,000/MWh were observed from August 23 to 25.
- Oil-based plants' highest effective capacity were recorded on August 22.
- Solar plants' highest peak nomination was recorded on August 23 and had maintained nomination levels until Friday then slightly decreased on August 26 to 27.
- Wind plants had increasing trend throughout the week.

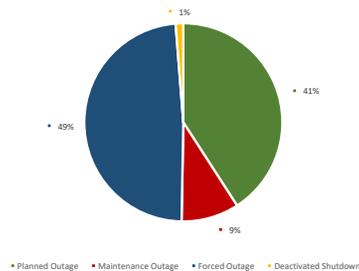
**IEMOP MARKET SYSTEMS ADVISORY**

- No IT-related issue was advised in IEMOP's market systems from 21 - 27 Aug 2023.

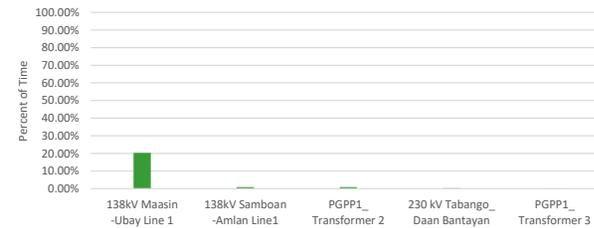
**CAPACITY ON OUTAGE BY PLANT TYPE**



**CAPACITY ON OUTAGE BY OUTAGE CATEGORY**



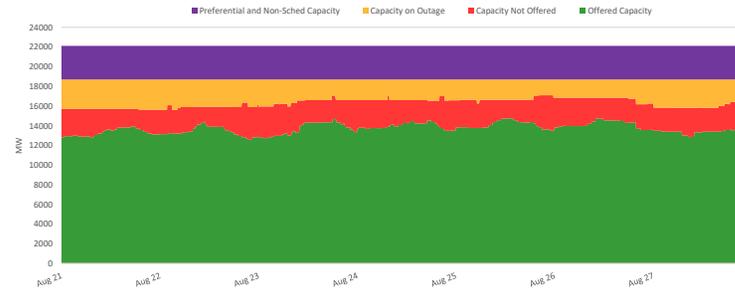
**RTD CONGESTION**



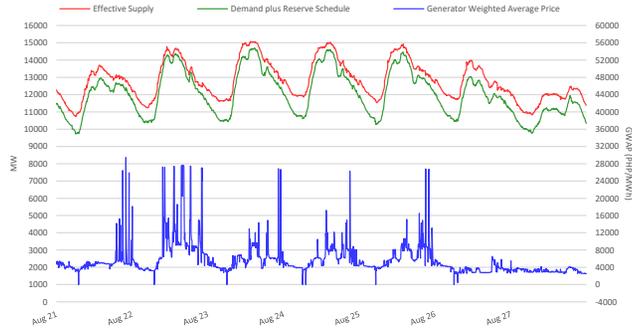
**SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)**

Particulars		21 - 27 Aug 2023	Previous Week (14 - 20 Aug 2023)	Same Week, Previous Year (22 - 28 Aug 2022)	Percent Change From	
					Previous Week	Same Week, Prev Year
GWAP (PHP/MWh)	max	29,427.923	33,368.007	32,648.099	-11.808%	-9.863%
	min	0.000	83.704	0.000	-100.000%	-
	ave	5,594.153	5,670.229	8,857.236	-1.342%	-36.841%
Effective Supply (MW)	max	15,070.954	15,405.256	13,994.889	-2.170%	7.689%
	min	10,738.400	10,934.128	9,823.480	-1.790%	9.314%
	ave	12,818.899	13,204.385	11,859.991	-2.919%	8.085%
System Demand (MW)	max	13,868.160	14,261.510	12,891.210	-2.758%	7.578%
	min	9,189.630	9,389.810	8,490.130	-2.132%	8.239%
	ave	11,484.512	12,045.462	10,471.937	-4.657%	9.669%
Demand + Reserve Schedule (MW)	max	14,687.938	14,854.227	13,869.220	-1.119%	5.903%
	min	9,719.510	9,917.850	9,308.130	-2.000%	4.420%
	ave	12,030.540	12,505.977	11,375.993	-3.802%	5.754%
Supply Margin (MW)	max	1,399.838	1,244.873	993.789	12.448%	40.859%
	min	213.448	116.393	-0.374	83.386%	57%
	ave	788.359	698.408	483.998	12.879%	62.885%

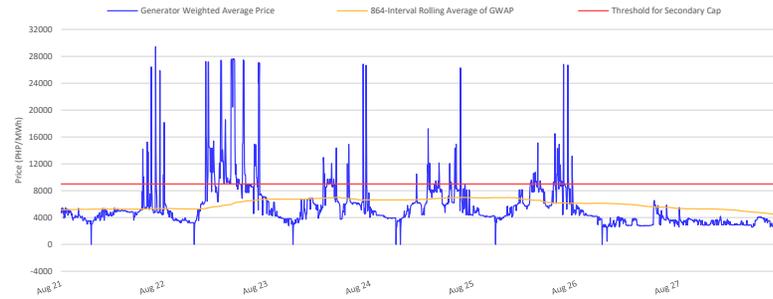
**CAPACITY PROFILE**



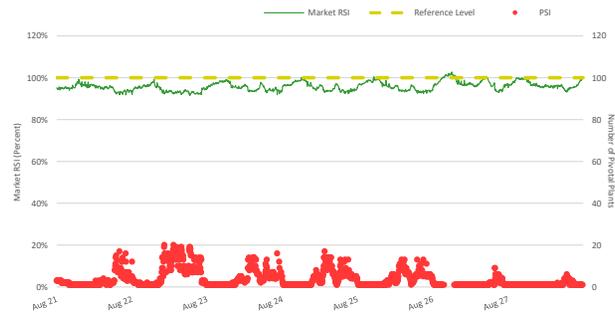
**SUPPLY, DEMAND AND PRICE**



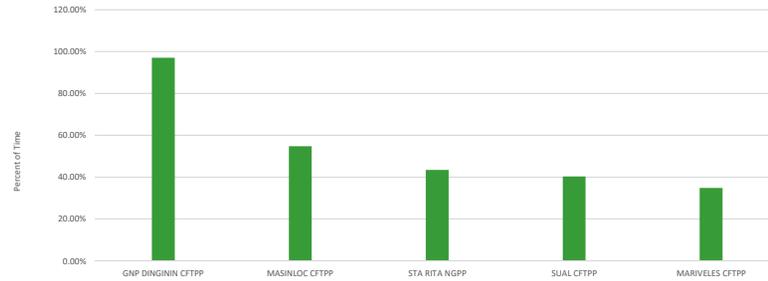
**GENERATOR WEIGHTED AVERAGE PRICE**



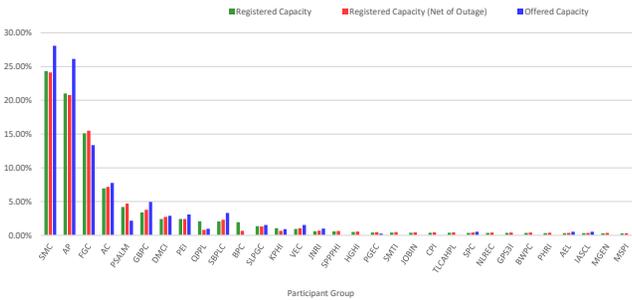
**MARKET RSI VS PIVOTAL PLANTS**



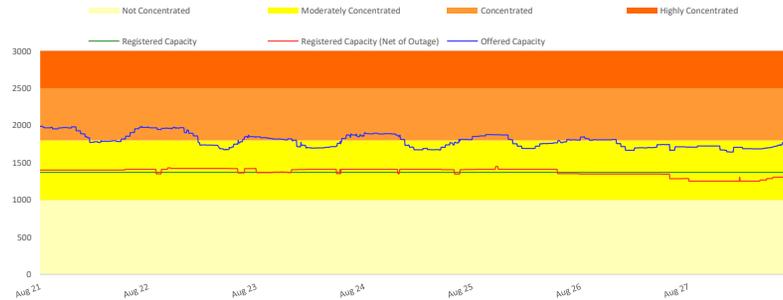
**PSI**



**MARKET SHARE**

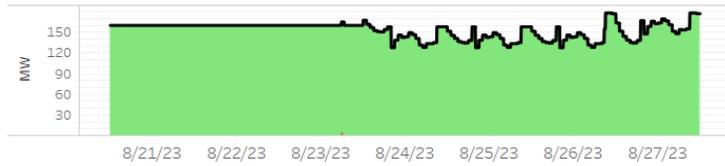


**HERFINDAHL-HIRSCHMAN INDEX**

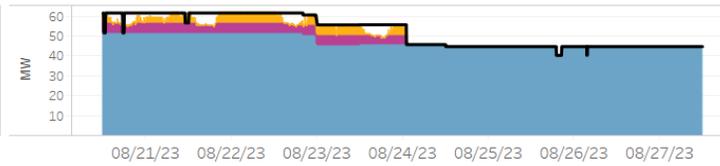


**OFFER PATTERN ANALYSIS**

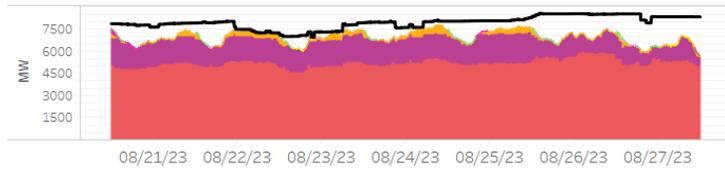
**BATTERY**



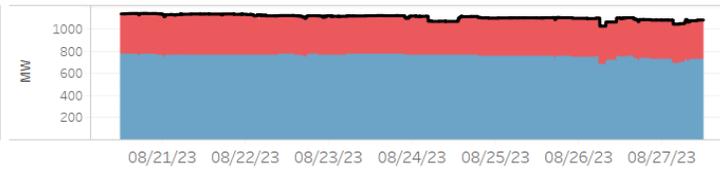
**BIOFUEL**



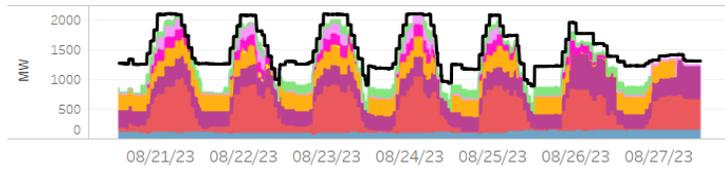
**COAL**



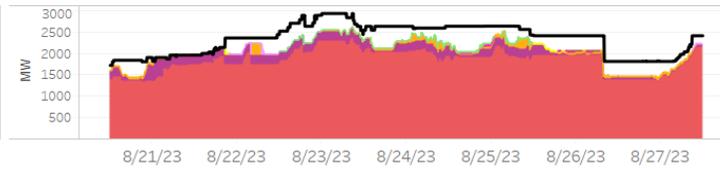
**GEOHERMAL**



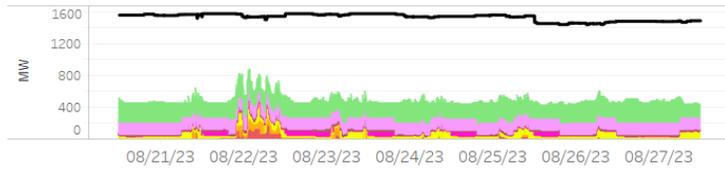
**HYDRO**



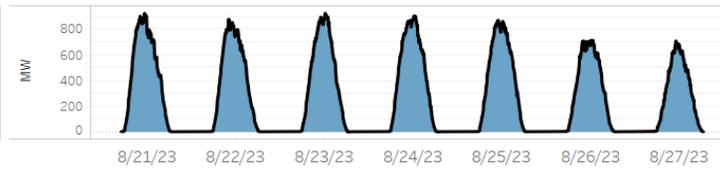
**NATURAL GAS**



**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.

**DISCLAIMER:** The information contained in this document is based on the available electricity spot market data. The same information is subject to change as updated figures come in. As such, the PEMC does not make any representation or warranty as to the completeness of this information. The PEMC likewise accepts no responsibility or liability whatsoever for any loss or cost incurred by a reader arising from, or in relation to, any conclusion or assumption derived from the information found herein.