

## PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 11,043 MW during the week of 24 - 30 Jul 2023, was lower than the previous week at 11,653 MW and lower than the same week last year at 12,123 MW.
- The average effective supply during the week was 11,918 MW, lower than the 12,493 MW of the previous week and lower than the 12,705 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
  - The capacity on outage averaged at 1,606 MW, lower than last week's 2,211 MW. About 52% of the 1,606 MW involved Coal plants, while in terms of category, about 52% were Forced Outages.
- As a result, an average supply margin of 875 MW was observed during the week, which is higher by about 4% relative to the previous week and higher by about 50% in comparison with the same week last year. The minimum supply margin was 169.92 MW on 26 July 2023 09:45. The average supply margin was 795.02 MW at peak intervals and 937.78 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 3,270/MWh from PHP 4,655/MWh last week. This is lower than the PHP7,893/MWh during the same week last year.
  - No secondary price cap was imposed for this week
- The top 5 participant groups accounted for about 77% 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 –
  - GNP DINGININ CFTPP (about 79.66% of the time)
  - STA RITA NGPP (about 66.17% of the time)
  - SUAL CFTPP (about 9.23% of the time)
  - KALAYAAN PSPP (about 8.88% of the time)
  - SMC LIMAY CFTPP (about 6.3% of the time)
- Based on the MMS Solution, the congested equipment during the week were –
  - 138kV Maasin\_Ubay (about 47.7% of the time)
  - 138kV Samboan-Amlan Line1 (about 2% of the time)
  - Bakun\_Transformer 3 (0.05% of the time)
- OPA ANALYSIS
  - Coal plants had lower offered capacity on July 26 due to outage of GN Dinginin CFTPP Unit 2.
  - Geothermal plants had declining capacity on July 25 and had increased gradually towards the end of the week.
  - Hydro plants recorded lower capacity on July 25 to 26 and lowest nominated capacity from July 26 to 27 which increased afterwards.
  - Natural gas plants recorded lower effective capacity from July 29 to 30 but had recorded lower offered capacity on July 24 to 25. Moreover, higher offer prices were recorded on July 24 to 26.
  - Solar plants recorded highest and lowest capacity on July 24 and 26 respectively.
  - Wind plant recorded highest capacity on July 25.

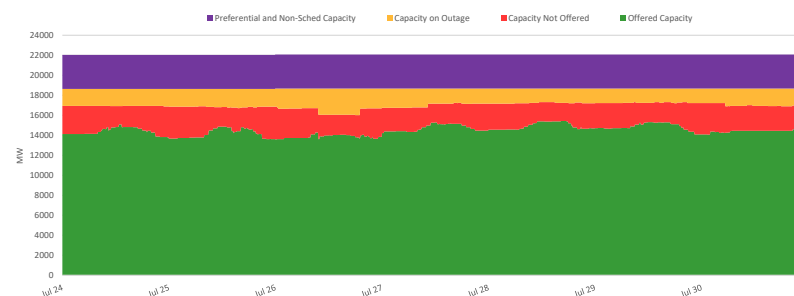
## IEMOP MARKET SYSTEMS ADVISORY

- No IT-related issue was advised in IEMOP's market systems from 24 - 30 Jul 2023.

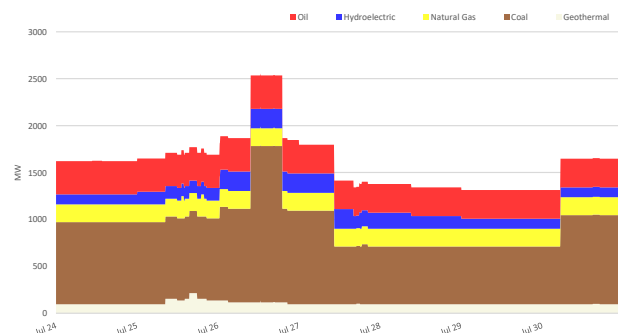
## SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		24 - 30 Jul 2023	Previous Week (17 - 23 Jul 2023 )	Same Week, Previous Year (25 - 31 Jul 2022)	Percent Change From	
					Previous Week	Same Week, Prev Year
GWAP (PHP/MWh)	max	27,673.559	27,820.645	32,000.000	-0.53%	-13.52%
	min	-997.034	-998.500	-987.206	0.15%	-1.00%
	ave	3,270.010	4,655.377	7,892.547	-29.76%	-58.57%
Effective Supply (MW)	max	14,421.683	14,478.859	14,812.999	-0.39%	-2.64%
	min	9,897.590	10,063.886	10,411.427	-1.65%	-4.94%
	ave	11,918.234	12,493.227	12,705.097	-4.60%	-6.19%
System Demand (MW)	max	12,958.070	13,867.500	13,424.110	-6.56%	-3.47%
	min	8,408.290	8,666.950	8,650.450	-2.98%	-2.80%
	ave	10,595.280	11,345.008	11,093.763	-6.61%	-4.49%
Demand + Reserve Schedule (MW)	max	13,594.901	14,086.937	14,523.230	-3.49%	-6.39%
	min	8,792.290	8,953.100	9,667.850	-1.80%	-9.06%
	ave	11,043.334	11,652.918	12,122.743	-5.23%	-8.90%
Supply Margin (MW)	max	1,439.900	1,403.464	1,115.529	2.60%	29.08%
	min	169.922	233.514	-0.083	-27.23%	2054%
	ave	874.899	840.309	582.353	4.12%	50.24%

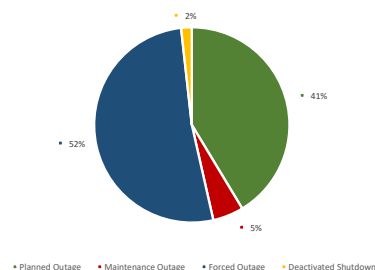
## CAPACITY PROFILE



## CAPACITY ON OUTAGE BY PLANT TYPE



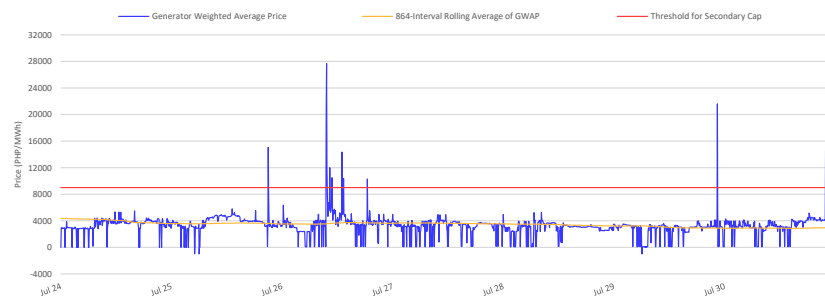
## CAPACITY ON OUTAGE BY OUTAGE CATEGORY



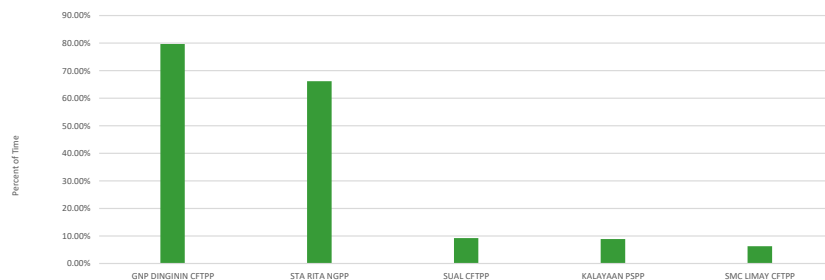
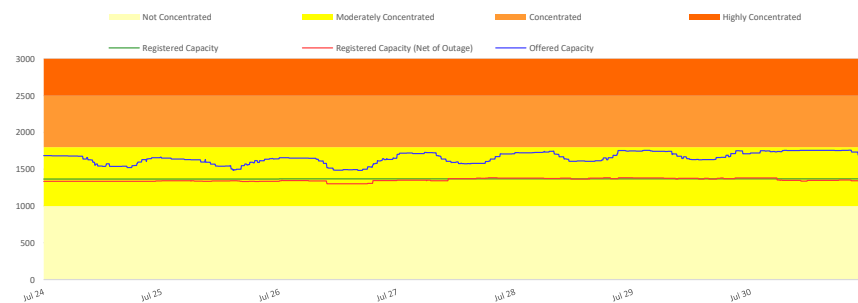
## RTD CONGESTION



### GENERATOR WEIGHTED AVERAGE PRICE

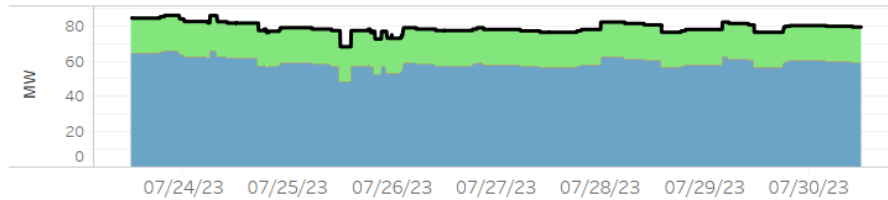


**PSI**

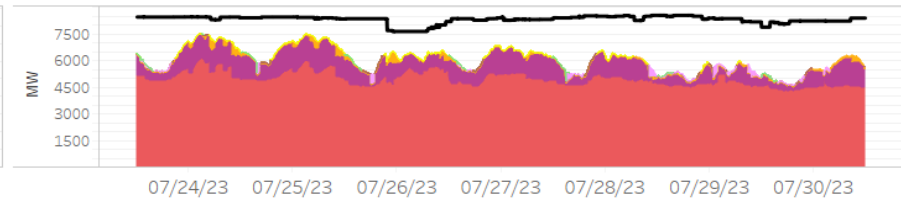
**HERFINDAHL-HIRSCHMAN INDEX**

**OFFER PATTERN ANALYSIS**

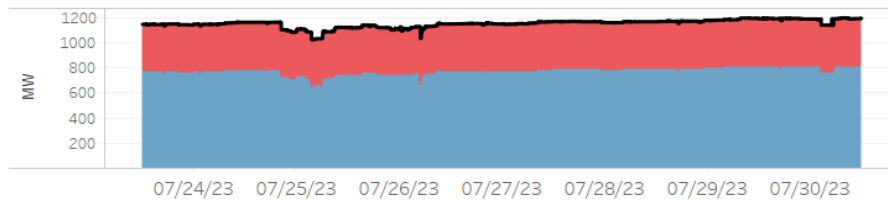
**BATTERY AND BIOFUEL**



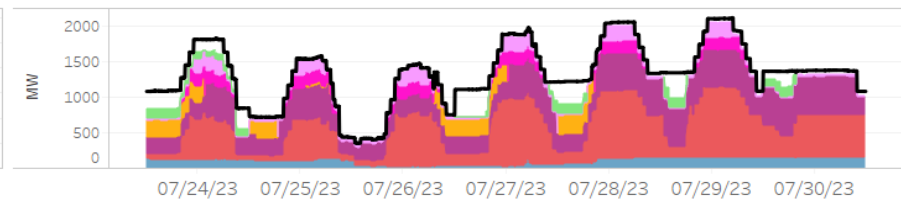
**COAL**



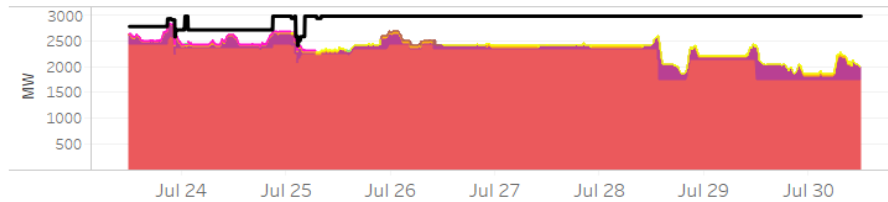
**GEOTHERMAL**



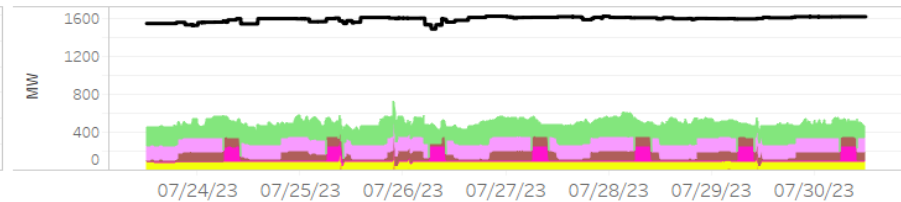
**HYDRO**



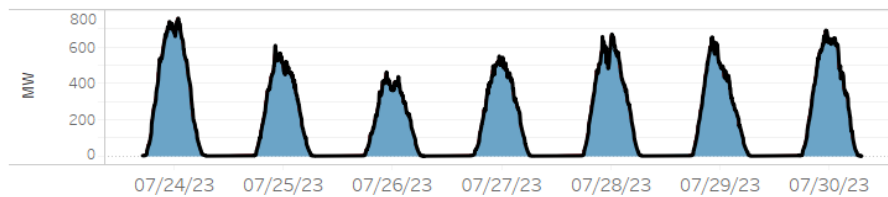
**NATURAL GAS**



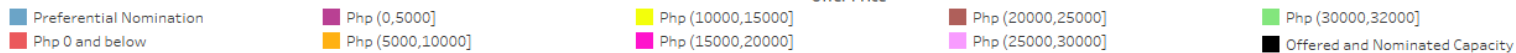
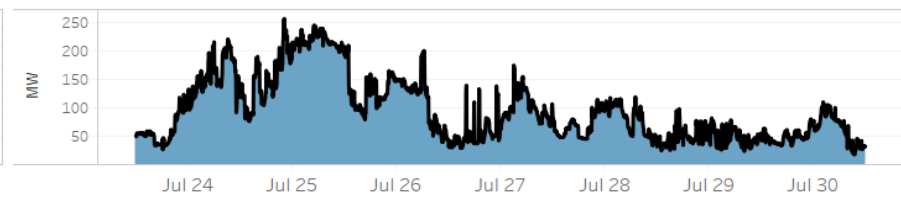
**OIL-BASED**



**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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