

## PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 12,924 MW during the week of 01 - 07 Apr 2024, was higher than the previous week at 12,130 MW and higher than the same week last year at 10,718 MW.
- The average effective supply during the week was 13,495 MW, higher than the 12,676 MW of the previous week and higher than the 11,620 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
  - The capacity on outage averaged at 2,785 MW, lower than last week's 3,582 MW. In terms of capacity on outage by plant type, about 38% of the 2,785 MW involved Coal Plants, while in terms of category, about 67% were Forced Outages.
- As a result, an average supply margin of 571 MW was observed during the week, which is higher by about 5% relative to the previous week and lower by about 36.743% in comparison with the same week last year. The supply deficit based on MMS solution was 8.03 MW on 04 April 2024 19:35. The average supply margin was 592.07 MW at peak intervals and 553.98 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 6,125/MWh from PHP 4,781/MWh last week. This is higher than the PHP5,116/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 –
  - GNP DINGININ CF TPP (about 100.0% of the time)
  - STA RITA NGPP (about 99.95% of the time)
  - MARIVELES CF TPP (about 99.7% of the time)
  - SUAL CF TPP (about 99.21% of the time)
  - PAGBILAO CF TPP (about 96.03% of the time)
- Based on the MMS Solution, the top 5 congested equipment during the week were –
  - 138kV Samboan-Amlan Line1 (about 49.7% of the time)
  - 138kV Maasin-Ubay Line 1 (about 37.6% of the time)
  - 138kV Samboan-Amlan Line2 (about 7.9% of the time)
  - 230kV Calatrava-Cadiz (about 7.7% of the time)
  - 230kV Mexico-Hermosa Line1 (about 3.0% of the time)

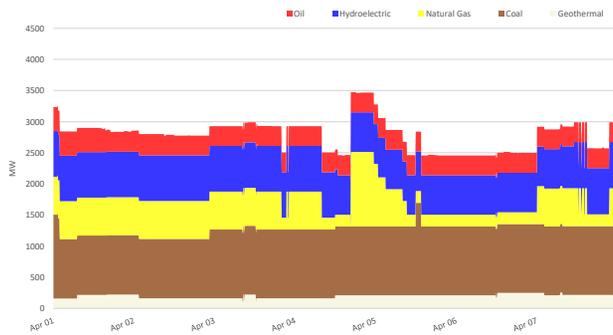
### OFFER PATTERN ANALYSIS

- The offered capacity of coal plants was higher than the previous week due to resumption of coal plants. However, there were intervals with lower offered capacity attributed to simultaneous testing of coal plants scheduled thru security limits imposed by the Systems Operator.
- The offered capacity of the hydro plants was slightly higher than the previous week due to fewer outages. Moreover, on April 5 and Apr 7, the observed capacity around 200 MW were offered at prices ranging from Php 30,000/MWh to Php 32,000/MWh.
- The lower offered capacity of natural gas plants from April 04 to 05 was attributed to a notable increase in outages.
- The lowest Solar Plant nomination was recorded on April 03, while the highest was recorded on April 02.
- The lowest nomination for Wind Plants was recorded on April 4, while the highest was on April 01

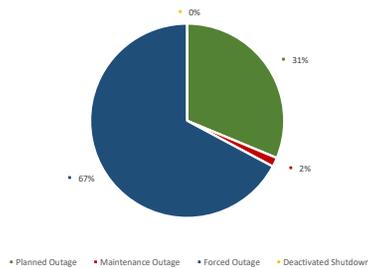
### IEMOP MARKET SYSTEMS ADVISORY

- No IT-related issue was advised in IEMOP's market systems from 01 - 07 Apr 2024.

## CAPACITY ON OUTAGE BY PLANT TYPE



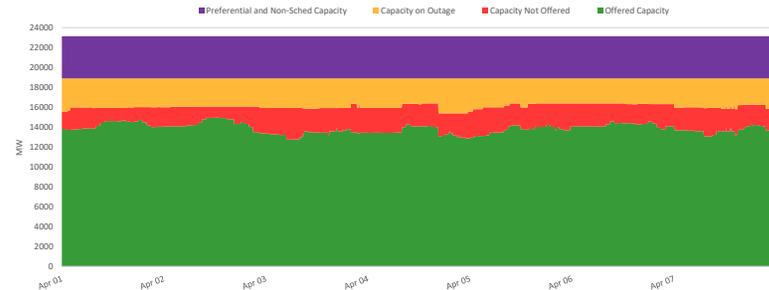
## CAPACITY ON OUTAGE BY OUTAGE CATEGORY



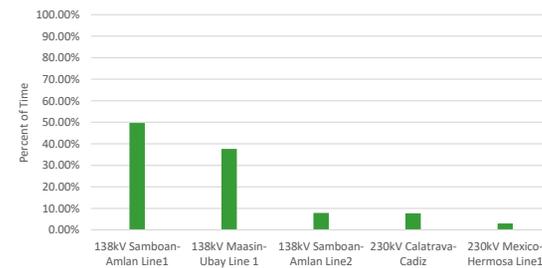
## SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		01 - 07 Apr 2024	Previous Week (25 - 31 Mar 2024)	Same Week, Previous Year (03 - 09 Apr 2023)	Percent Change From	
					Previous Week	Same Week, Prev Year
GWAP (PHP/MWh)	max	34,183.847	32,521.508	30,000.000	5.112%	13.946%
	min	-97.694	-9,795.780	-10,000.000	99.003%	99.023%
	ave	6,125.454	4,781.156	5,115.870	28.117%	19.734%
Effective Supply (MW)	max	16,140.115	15,845.553	15,090.717	1.859%	6.954%
	min	11,047.433	9,927.433	8,870.804	11.282%	24.537%
	ave	13,495.037	12,675.651	11,620.086	6.464%	16.135%
System Demand (MW)	max	15,041.290	13,958.570	13,813.790	7.757%	8.886%
	min	9,644.660	8,278.820	7,261.500	16.498%	32.819%
	ave	12,441.503	10,910.366	10,051.398	14.034%	23.779%
Demand + Reserve Schedule (MW)	max	15,637.750	15,613.040	14,570.210	0.158%	7.327%
	min	10,391.030	9,259.700	7,802.500	12.218%	33.176%
	ave	12,924.277	12,130.414	10,717.796	6.544%	20.587%
Supply Margin (MW)	max	993.419	1,100.194	1,494.764	-9.705%	-33.540%
	min	-8.030	53.342	163.121	-115.054%	-104.923%
	ave	570.760	545.237	902.290	4.681%	-36.743%

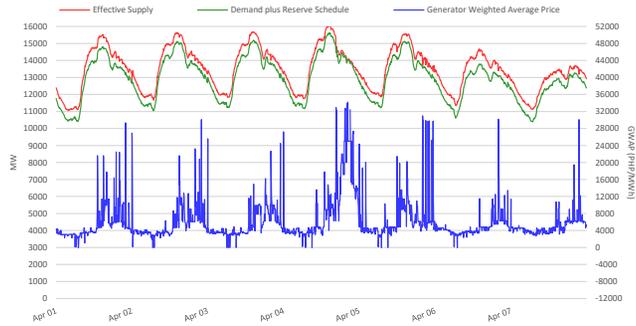
## CAPACITY PROFILE



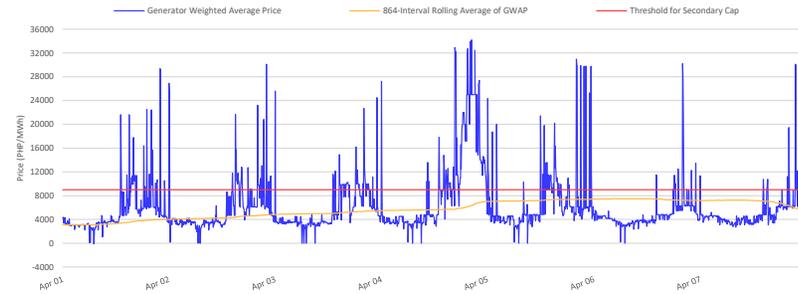
## RTD CONGESTION



**SUPPLY, DEMAND AND PRICE**



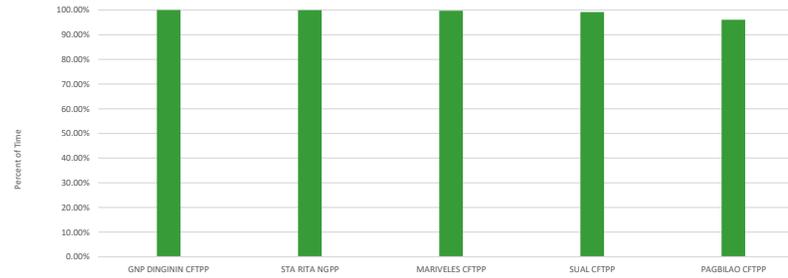
**GENERATOR WEIGHTED AVERAGE PRICE**



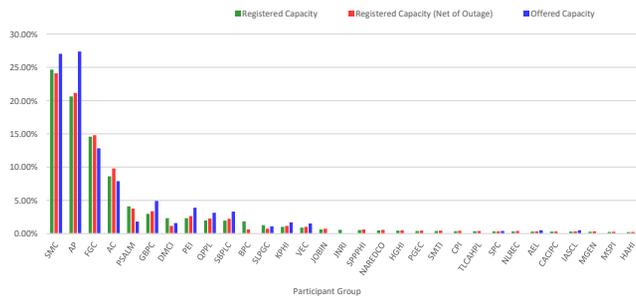
**MARKET RSI VS PIVOTAL PLANTS**



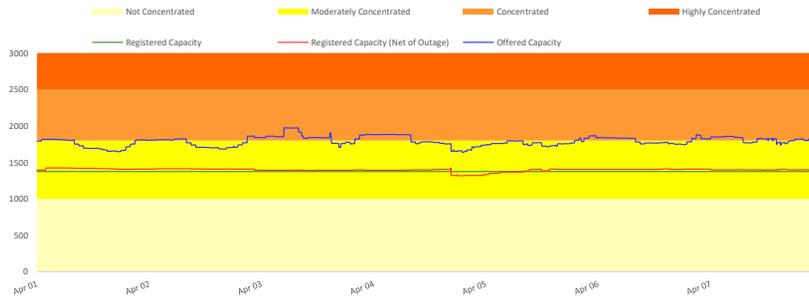
**PSI**



**MARKET SHARE**

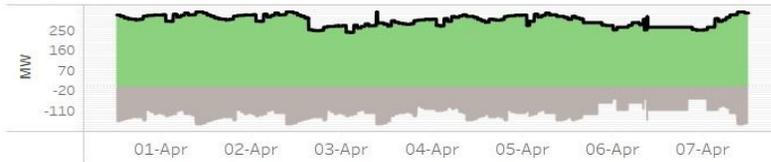


**HERFINDAHL-HIRSCHMAN INDEX**

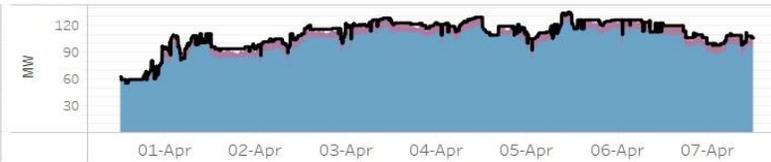


**OFFER PATTERN ANALYSIS**

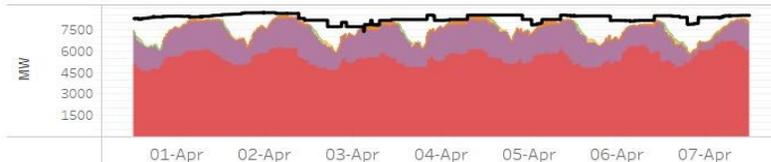
**BATTERY**



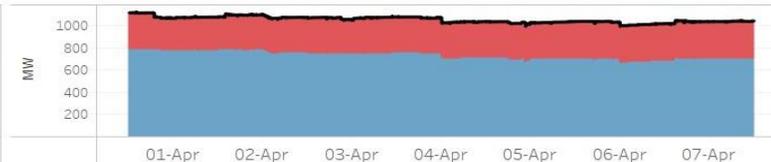
**BIOFUEL**



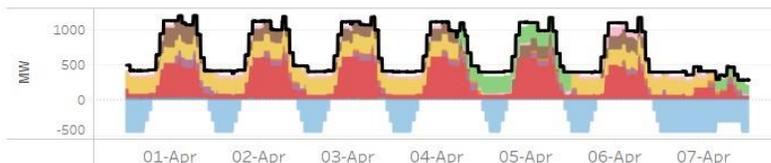
**COAL**



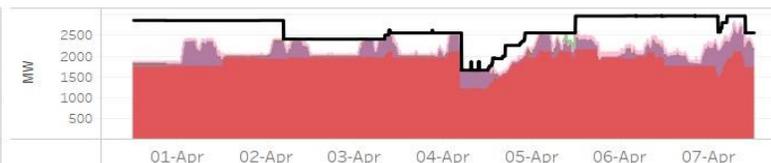
**GEOHERMAL**



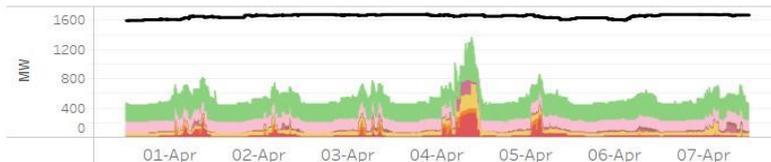
**HYDRO**



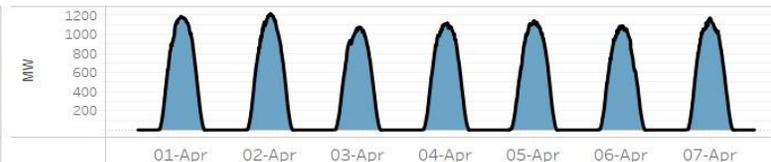
**NATURAL GAS**



**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.

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.