

## PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 12,949 MW during the week of 08 - 14 Apr 2024, was higher than the previous week at 12,924 MW and higher than the same week last year at 11,635 MW.
- The average effective supply during the week was 13,506 MW, higher than the 13,495 MW of the previous week and higher than the 12,405 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
  - The capacity on outage averaged at 2,833 MW, higher than last week's 2,813 MW. In terms of capacity on outage by plant type, about 37% of the 2,833 MW involved Coal Plants, while in terms of category, about 69% were Forced Outages.
- As a result, an average supply margin of 556 MW was observed during the week, which is lower by about 2.521% relative to the previous week and lower by about 27.731% in comparison with the same week last year. The thinnest supply margin was 110.54 MW on 08 April 2024 19:50h. The average supply margin was 577.92 MW at peak intervals and 543.11 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 6,283/MWh from PHP 6,125/MWh last week. This is lower than the PHP6,928/MWh during the same week last year.
  - No secondary price cap was imposed for this week
- The top 5 participant groups accounted for about 81% of the offered capacity. The Herfindahl-Hirschman Index (HHI) by participant group indicated 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 100.% of the time)
  2. STA RITA NGPP (about 95.29% of the time)
  3. SUAL CFTPP (about 90.92% of the time)
  4. MASINLOC CFTPP (about 89.38% of the time)
  5. MARIVELES CFTPP (about 84.82% of the time)

- Based on the MMS Solution, the top 5 congested equipment during the week were –
  1. 138kV Maasin-Ubay Line 1 (about 31.3% of the time)
  2. 138kV Samboan-Amlan Line1 (about 30.% of the time)
  3. 138kV Samboan-Amlan Line2 (about 7.5% of the time)
  4. 230kV Mexico-Hermosa Line2 (about 7.0% of the time)
  5. 230kV Mexico-Hermosa Line1 (about 6.6% of the time)

### OFFER PATTERN ANALYSIS

- The offered capacity of coal plants was similar to the previous week due to minimal outages. 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 lower than the previous week due to increase in outages. Moreover, from April 9 to 13, the observed capacity around 100 MW were offered at prices ranging from Php 30,000/MWh to Php 32,000/MWh.
- Multiple instances between April 08 to 10 with the lowest offered capacity of natural gas plants were attributed to a notable increase in outages.
- The lowest Solar Plant nomination was recorded on April 14, while the highest was recorded on April 13.
- The lowest nomination for Wind Plants was recorded on April 13, while the highest was on April 10.

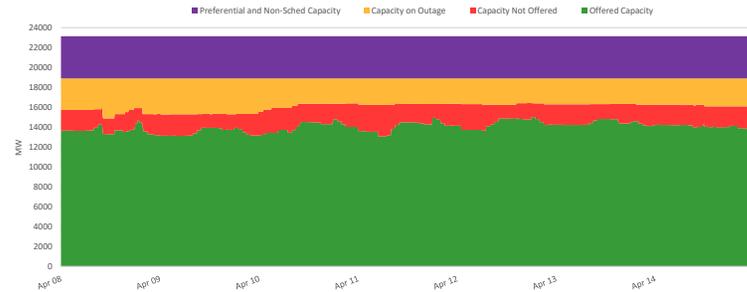
### IEMOP MARKET SYSTEMS ADVISORY

- No IT-related issue was advised in IEMOP's market systems from 08 - 14 Apr 2024.

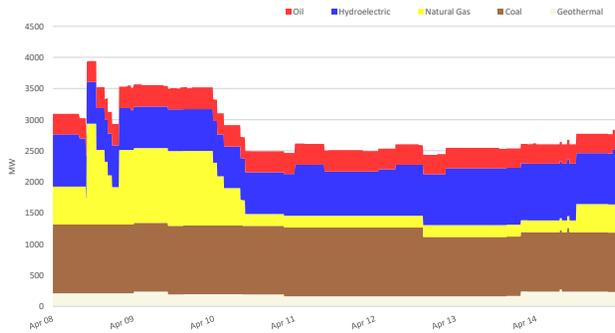
## SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		08 - 14 Apr 2024	Previous Week (01 - 07 Apr 2024)	Same Week, Previous Year (10 - 16 Apr 2023)	Percent Change From	
					Previous Week	Same Week, Prev Year
GWAP (PHP/MWh)	max	32,792.560	34,183.847	23,801.000	-4.070%	37.778%
	min	-163.460	-97.694	-9,723.075	-67.318%	98.319%
	ave	6,282.714	6,125.454	6,928.271	2.567%	-9.318%
Effective Supply (MW)	max	16,342.545	16,140.115	14,595.344	1.254%	11.971%
	min	10,871.259	11,047.433	9,722.093	-1.595%	11.820%
	ave	13,505.865	13,495.037	12,404.597	0.080%	8.878%
System Demand (MW)	max	15,068.600	15,041.290	13,258.290	0.182%	13.654%
	min	9,599.150	9,644.660	7,995.010	-0.472%	20.064%
	ave	12,373.102	12,441.503	10,997.251	-0.550%	12.511%
Demand + Reserve Schedule (MW)	max	15,850.730	15,637.750	13,997.180	1.362%	13.242%
	min	10,209.220	10,391.030	8,559.120	-1.750%	19.279%
	ave	12,949.493	12,924.277	11,634.735	0.195%	11.300%
Supply Margin (MW)	max	1,059.572	993.419	1,306.266	6.659%	-18.885%
	min	110.540	-8.030	290.385	1.4%	-61.933%
	ave	556.372	570.760	769.862	-2.521%	-27.731%

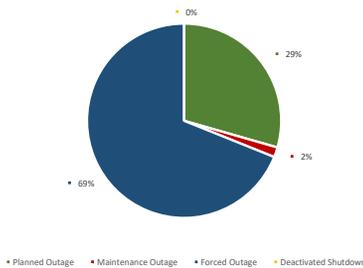
## CAPACITY PROFILE



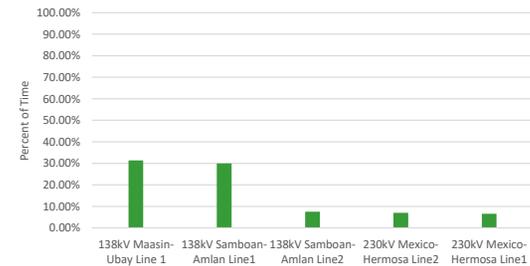
## CAPACITY ON OUTAGE BY PLANT TYPE



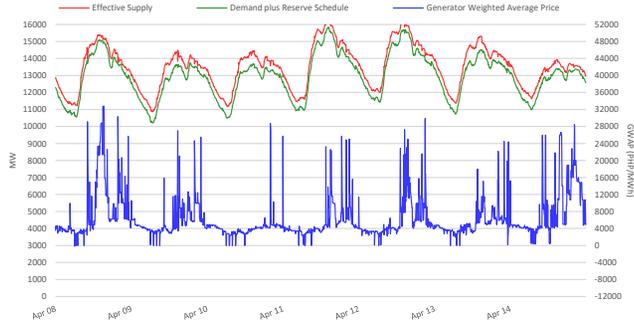
## CAPACITY ON OUTAGE BY OUTAGE CATEGORY



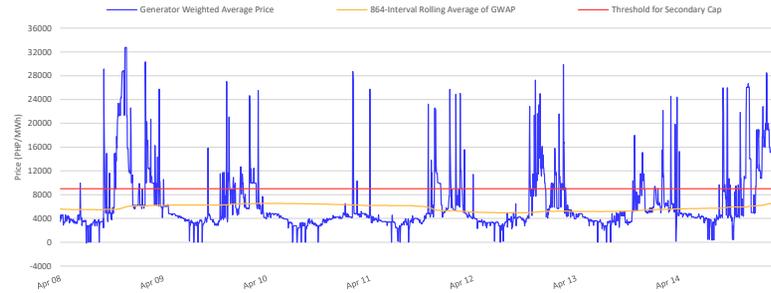
## RTD CONGESTION



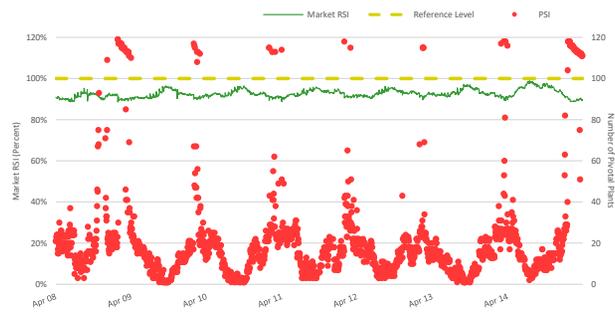
**SUPPLY, DEMAND AND PRICE**



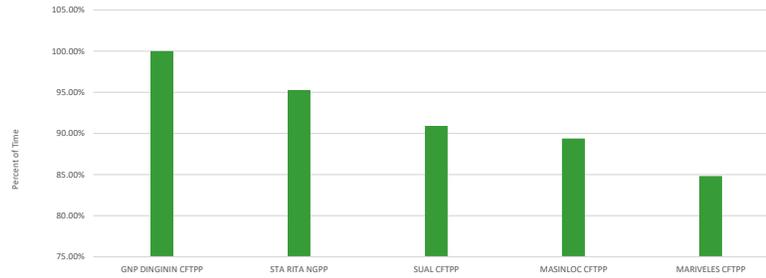
**GENERATOR WEIGHTED AVERAGE PRICE**



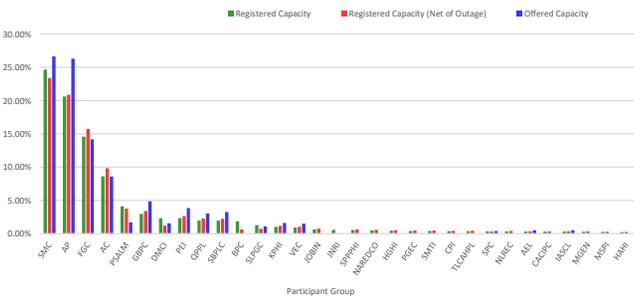
**MARKET RSI VS PIVOTAL PLANTS**



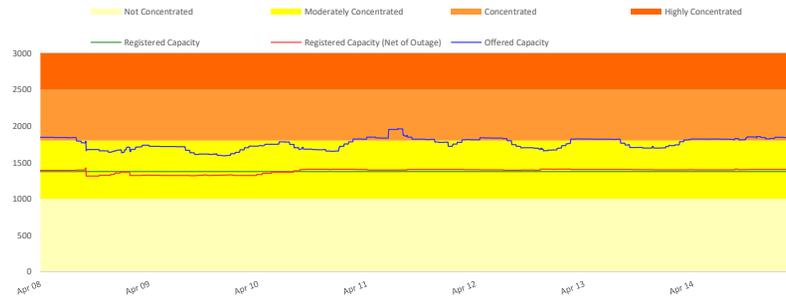
**PSI**



**MARKET SHARE**

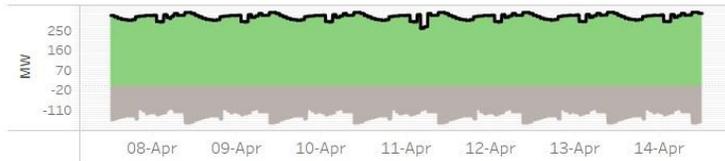


**HERFINDAHL-HIRSCHMAN INDEX**



**OFFER PATTERN ANALYSIS**

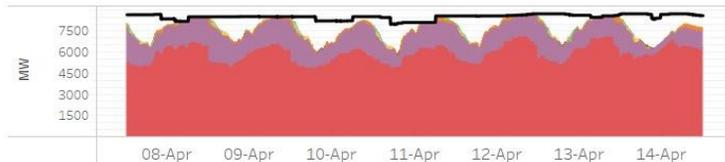
**BATTERY**



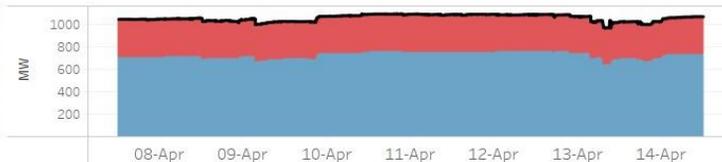
**BIOFUEL**



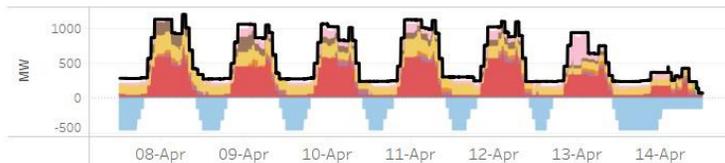
**COAL**



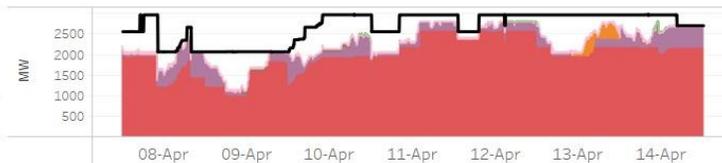
**GEOHERMAL**



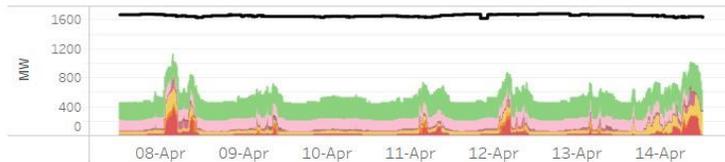
**HYDRO**



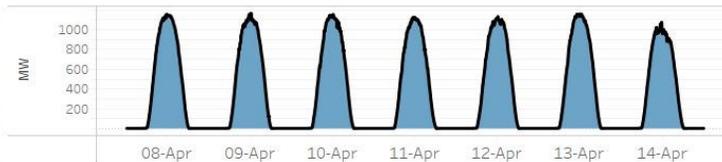
**NATURAL GAS**



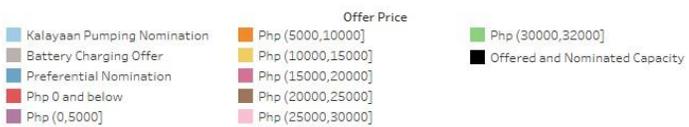
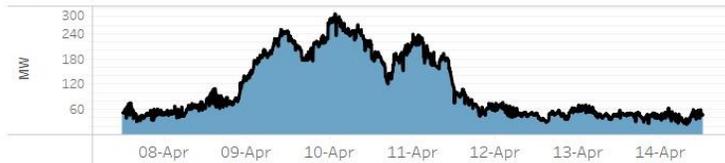
**OIL-BASED**



**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.

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