

**PEMC MARKET ASSESSMENT HIGHLIGHTS**

- The average demand and the reserve schedule, recorded at 2,091 MW during the week of 01 - 07 Jan 2024, was higher than the previous week at 2,060MW.
- The average effective supply during the week was 2,539 MW, higher than the 2,479 MW of the previous week. Ramping limitations were considered in the calculation of the effective supply.
  - The capacity on outage averaged at 616 MW, higher than last week's 361 MW. In terms of capacity on outage by plant type, about 73% of the 616 MW involved Coal Plants, while in terms of outage by category, about 97% were Forced Outages.
- As a result, an average supply margin of 447 MW was observed during the week, which is higher by about 7% relative to the previous week. The minimum supply margin based on MMS solution was 107.49 MW on 03 January 2024 16:15h. The average supply margin was 439.98 MW at peak intervals and 452.99 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 5,440/MWh from PHP 3,282/MWh last week.
  - No secondary price cap was imposed for this week
- The top 5 participant groups accounted for about 76% 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 --
  1. GN POWER KAUSWAGAN CFTPP (about 17.16% of the time)
  2. THERMA SOUTH CFTPP (about 1.84% of the time)
  3. FDC MISAMIS CFTPP (about 1.24% of the time)
  4. PULANGI 4 HEPP (about 0.6% of the time)
  5. MALITA CFTPP (about 0.3% of the time)
- Based on the MMS Solution, no congested equipment noted during the week.

**OPA\_ANALYSIS**

- The capacity offered by coal plants was higher than that of the previous week due to lower outages.
- No outages occurred at the geothermal plant during the week. The offered capacity throughout the week was approximately 85 MW.
- Hydro plants suddenly decreased the offered capacity by 200 MW during the afternoon peak on January 3.
- Solar plants recorded their lowest nomination on January 2 and their highest on January 5.

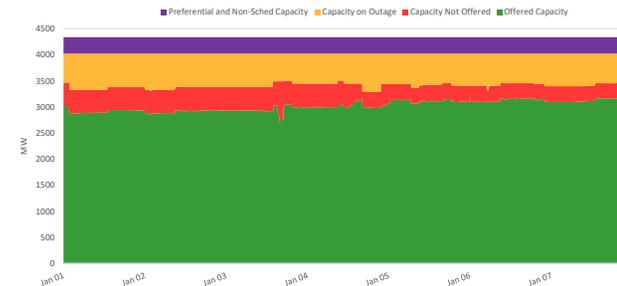
**IEMOP MARKET SYSTEMS ADVISORY**

- SO initiated Market Intervention for Visayas, starting from 1510h on January 2 to 1235h on January 5, due to a partial blackout at the Panay sub-grid.

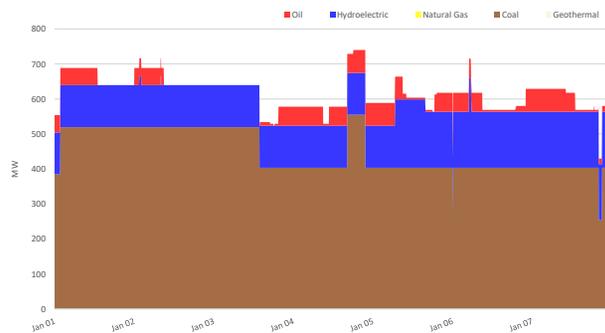
**SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)**

Particulars		01 - 07 Jan 2024	Previous Week (25 - 31 Dec 2023)	Percent Change
GWAP (PHP/MWh)	max	31,776.646	24,891.431	27.661%
	min	-1,024.059	-49.609	-1.96k%
	ave	5,440.468	3,282.487	65.742%
Effective Supply (MW)	max	2,945.138	2,976.181	-1.043%
	min	1,952.268	2,079.689	-6.127%
	ave	2,538.667	2,479.026	2.406%
System Demand (MW)	max	2,362.830	2,271.160	4.036%
	min	1,331.750	1,246.710	6.821%
	ave	1,818.255	1,777.734	2.279%
Demand + Reserve Schedule (MW)	max	2,619.270	2,638.370	-0.724%
	min	1,412.490	1,599.170	-11.674%
	ave	2,091.409	2,059.958	1.527%
Supply Margin (MW)	max	636.289	590.140	7.820%
	min	107.489	281.169	-61.771%
	ave	447.257	419.069	6.726%

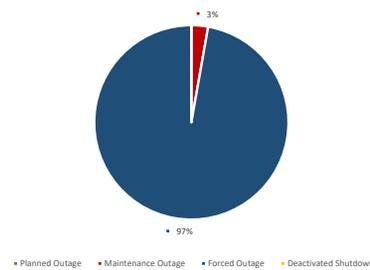
**CAPACITY PROFILE**



**CAPACITY ON OUTAGE BY PLANT TYPE**



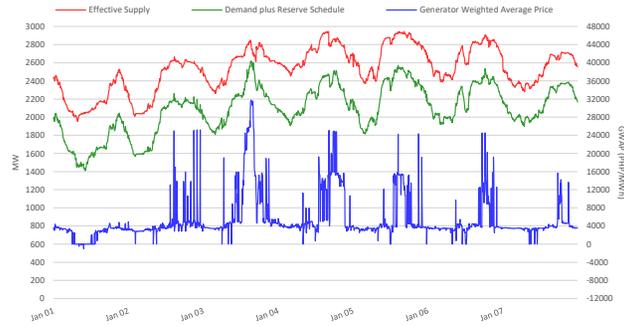
**CAPACITY ON OUTAGE BY OUTAGE CATEGORY**



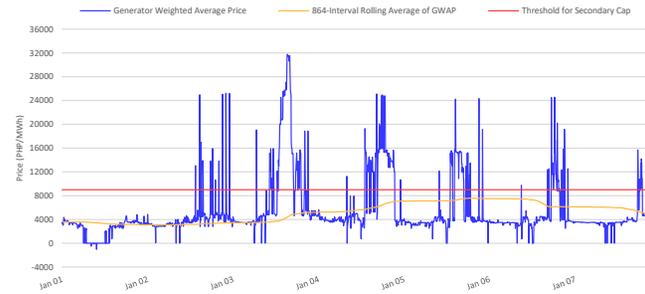
**RTD CONGESTION**



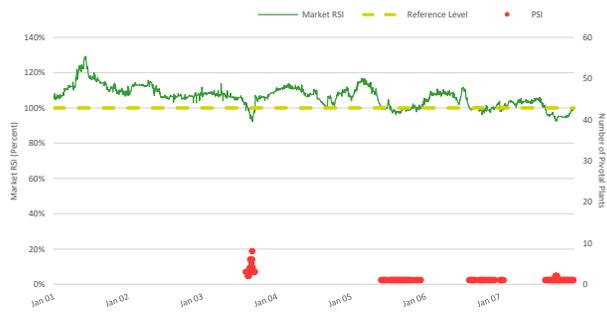
**SUPPLY, DEMAND AND PRICE**



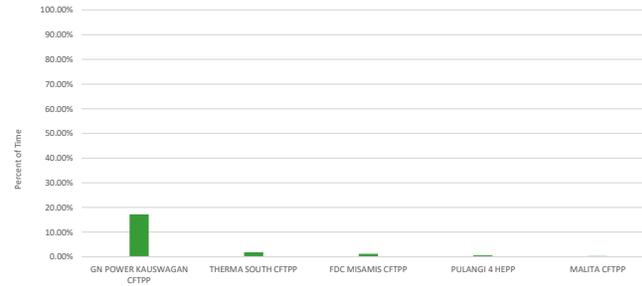
**GENERATOR WEIGHTED AVERAGE PRICE**



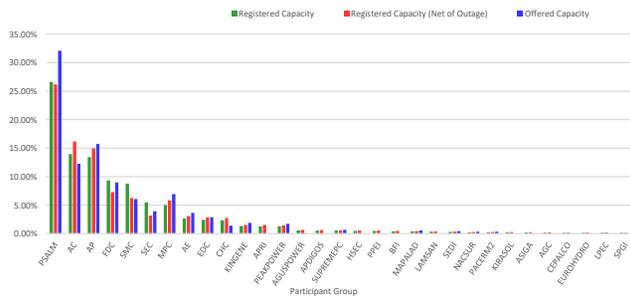
**MARKET RSI VS PIVOTAL PLANTS**



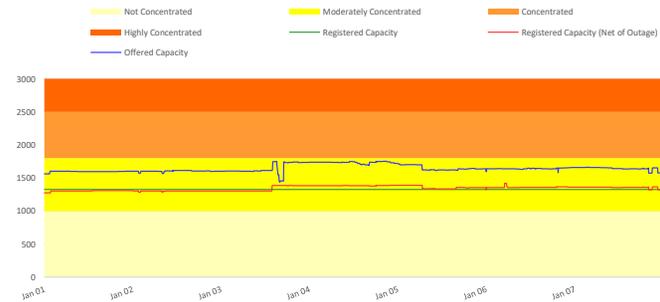
**PSI**



**MARKET SHARE**

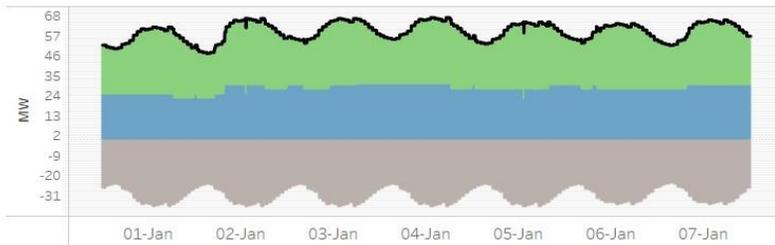


**HERFINDAHL-HIRSCHMAN INDEX**

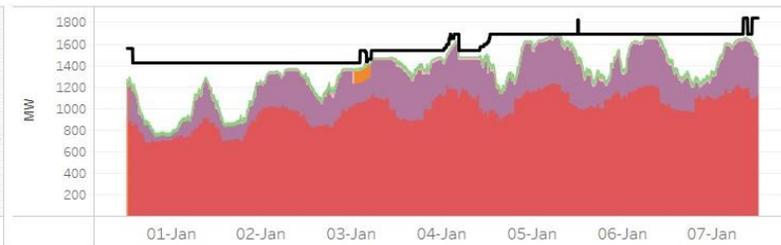


**OFFER PATTERN ANALYSIS**

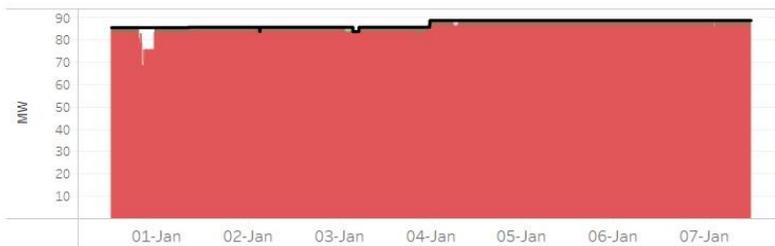
**BATTERY AND BIOFUEL**



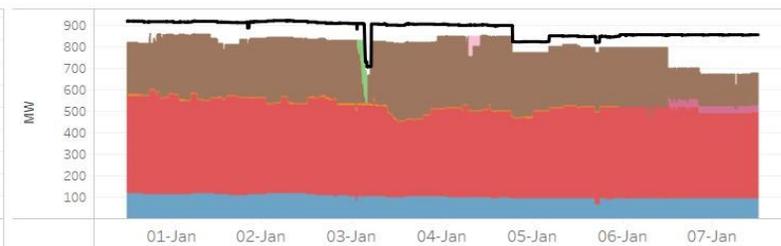
**COAL**



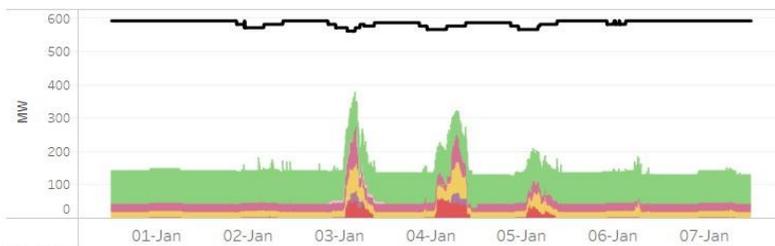
**GEOHERMAL**



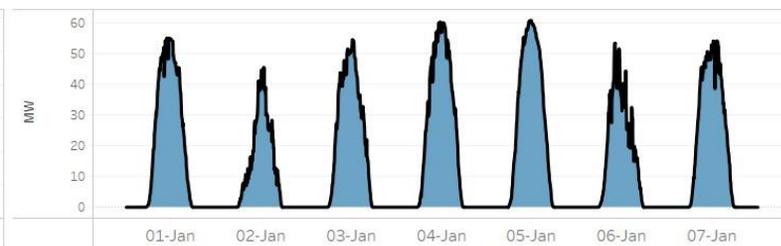
**HYDRO**



**OIL-BASED**



**SOLAR**



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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