PEMC MARKET ASSESSMENT HIGHLIGHTS

· The average demand and the reserve schedule, recorded at 11,507 MW during the week of 01 - 07 Jan 2024, was higher than the previous week at 10,706 MW and higher than the same week last year at 10,256 MW.

· The average effective supply during the week was 12,141 MW, higher than the 11,429 MW of the previous week and higher than the 11,079 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
  · The capacity on outage averaged at 3,227 MW, lower than last week's 3,559 MW. In terms of capacity on outage by plant type, about 66% of the 3,227 MW involved Coal Plants, while in terms of category, about 58% were Forced Outages.

· As a result, an average supply margin of 634 MW was observed during the week, which is lower by about 12.45% relative to the previous week and lower by about 23.05% in comparison with the same week last year. The thinnest supply margin based on MMS solution was 20.84 MW on 03 January 2024 0640h. The average supply margin was 641.98 MW at peak intervals and 626.83 MW at off-peak intervals.

· Correspondingly, average GWAP was recorded at PHP 5,226/MWh from PHP 3,786/MWh last week. This is higher than the PHP4,311/MWh during the same week last year. Admistrative Prices were used during the SO initiated market intervention in Visayas from 1510h on January 2 to 1235h on January 5.
  · No secondary price cap was imposed for this week

· The top 5 participant groups accounted for about 79% 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. GNP DINGININ CFTPP (about 94.54% of the time)
  2. ILIJAN NGPP (about 76.29% of the time)
  3. SUAL CFTPP (about 70.44% of the time)
  4. PAGBILAO CFTPP (about 69.05% of the time)
  5. SMC LIMAY CFTPP (about 67.81% of the time)

· Based on the MMS Solution, the top 5 congested equipment during the week were –
  1. 138kV Samboan-Amlan Line1 (about 33.% of the time)
  2. 230 kV Tabango-Daan Bantayan (about 11.4% of the time)
  3. 230kV Bauang-Latrinidad Line2 (about 0.84% of the time)
  4. 230kV Bauang-Latrinidad Line1 (about 0.79% of the time)
  5. 138kV Bacolod-Barotac Viejo (about 0.1% of the time)

· OPA_ANALYSIS
  - The capacity offered by coal plants was higher than that of the previous week due to lower outages.
  - The capacity offered by hydro plants was slightly higher than that of the previous week due to lower outages.
    It was also observed that a capacity of around 180MW during peak hours from January 01 to January 06 was offered at price range of Php 25,000/MWh to Php 30,000/MWh.
  - Natural gas plants offered lower capacity on January 2 and 3 due to forced outages at Ilijan.
  - The lowest solar plant nomination was recorded on January 1, while the highest was recorded on January 6.
  - The lowest nomination for wind plants was recorded on January 03, and the highest was on January 04.
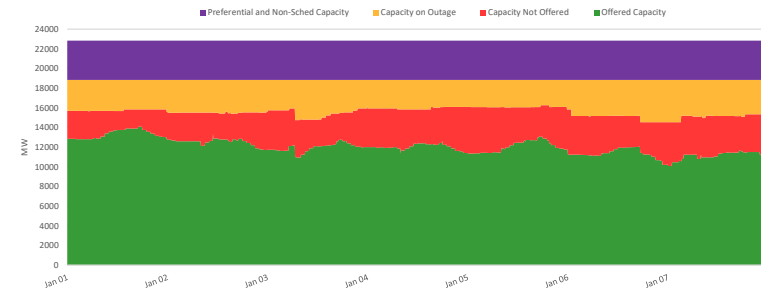
IEMOP MARKET SYSTEMS ADVISORY
  · SO initiated Market Intervention for Visayas, starting from 1510h on January 2 to 1235h on January 5, due to a partial blackout at the Panay sub-grid.
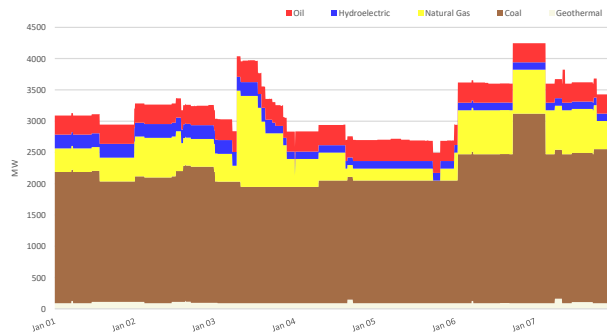
SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

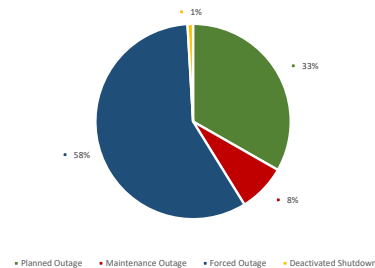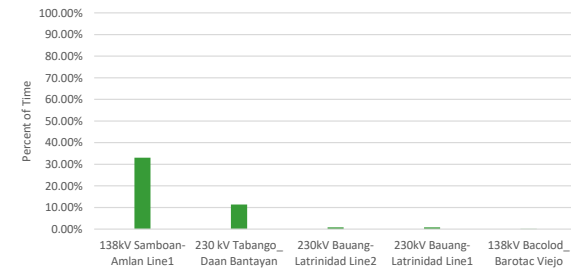| Particulars		01 - 07 Jan 2024	Previous Week (25 - 31 Dec 2023)	Same Week, Previous Year (02 - 08 Jan 2023)	Percent Change From	
					Previous week	Same Week, Prev Year
GWAP (PHP/MWh)	max	31,884.99	30,564.49	18,347.47	4.32%	73.78%
	min	-1,791.80	-49.31	-9,817.87	-3.53k%	81.75%
	ave	5,225.73	3,785.57	4,311.14	38.04%	21.21%
Effective Supply (MW)	max	14,807.12	13,816.69	13,138.39	7.17%	12.70%
	min	9,660.85	9,262.67	9,060.89	4.30%	6.62%
	ave	12,140.55	11,429.22	11,079.45	6.22%	9.58%
System Demand (MW)	max	12,873.54	11,878.71	11,270.01	8.37%	14.23%
	min	7,648.91	7,491.32	7,206.41	2.10%	6.14%
	ave	10,508.08	9,721.41	9,298.42	8.09%	13.01%
Demand + Reserve Schedule (MW)	max	14,229.64	13,122.52	12,452.99	8.44%	14.27%
	min	8,733.83	8,468.13	7,934.91	3.14%	10.07%
	ave	11,507.05	10,705.64	10,256.16	7.49%	12.20%
Supply Margin (MW)	max	1,310.29	1,312.19	1,405.96	-0.14%	-6.80%
	min	20.84	279.77	369.44	-92.55%	-94.36%
	ave	633.50	723.58	823.29	-12.45%	-23.05%

CAPACITY PROFILE

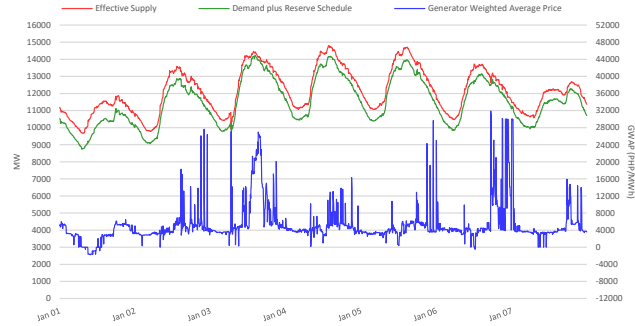
CAPACITY ON OUTAGE BY PLANT TYPE
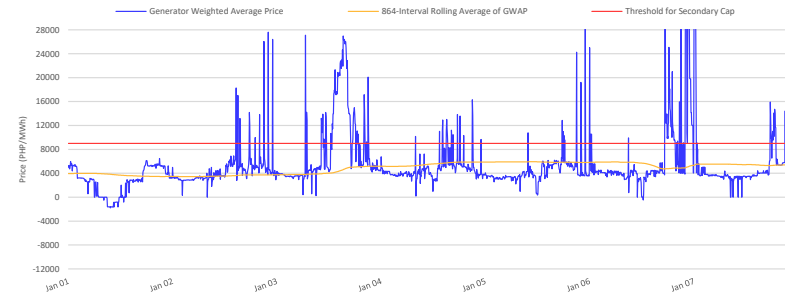

CAPACITY ON OUTAGE BY OUTAGE CATEGORY
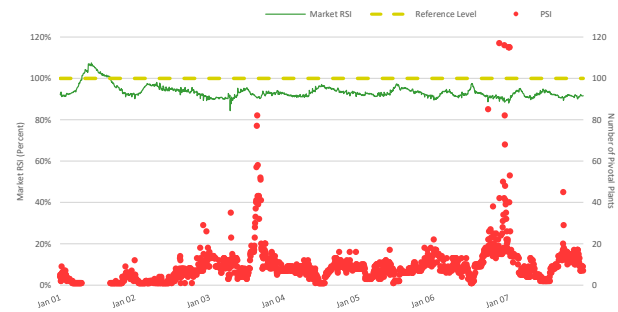

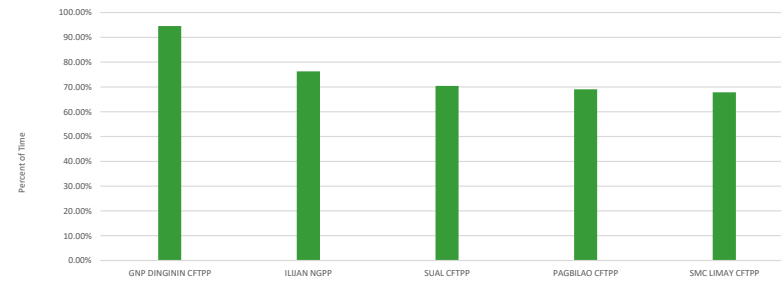## RTD CONGESTION

SUPPLY, DEMAND AND PRICE
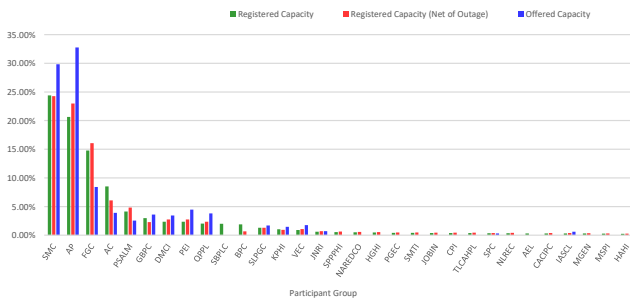

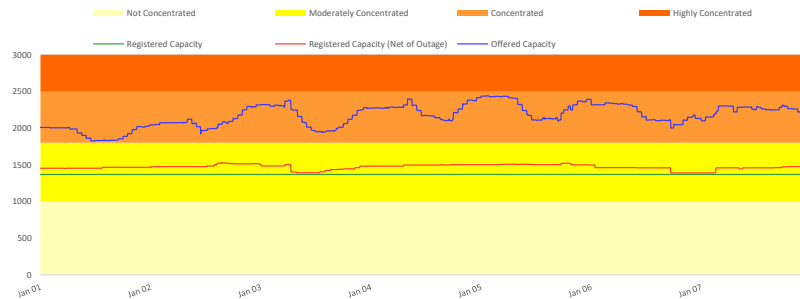**GENERATOR WEIGHTED AVERAGE PRICE**
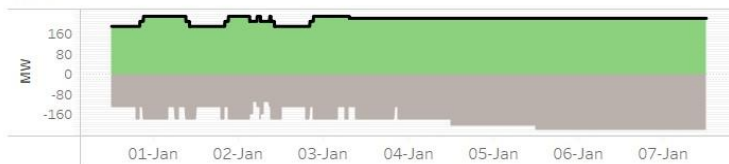

MARKET RSI VS PIVOTAL PLANTS

PSI

MARKET SHARE

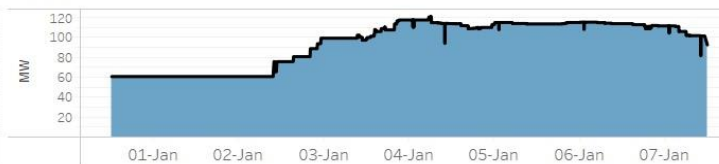**HERFINDAHL-HIRSCHMAN INDEX**
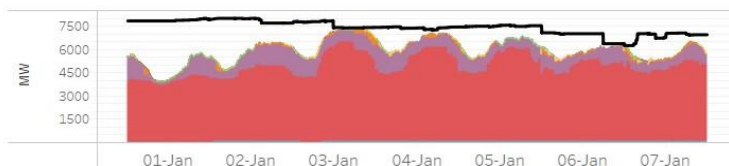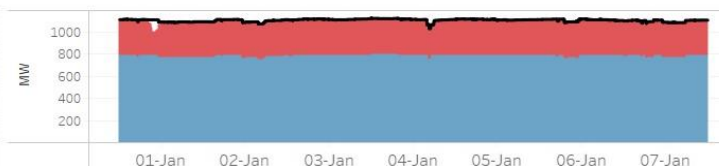
Philippine Electricity Market Corporation

OFFER PATTERN ANALYSIS

BATTERY

BIOFUEL

COAL

GEOTHERMAL

HYDRO

NATURAL GAS

OIL-BASED

SOLAR

WIND

Offer Price

- Kalayaan Pumping Nomination
- Battery Charging Offer
- Preferential Nomination
- Php 0 and below
- Php (0,5000]
- Php (5000,10000]
- Php (10000,15000]
- Php (15000,20000]
- Php (20000,25000]
- Php (25000,30000]
- Php (30000,32000]
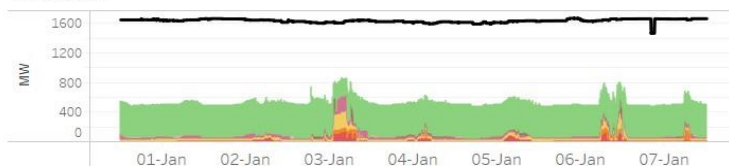- Offered and Nominated Capacity
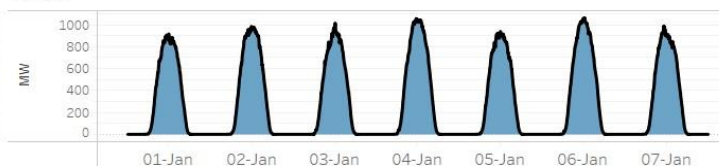
Notes:
1. In Php (X, Y], it includes offer price greater than Php X but less than or equal to Php Y.
2. Reflected capacity includes offered capacity of all scheduled generators, nominated loading level of nonscheduled generators and projected output of preferential dispatch generators adjusted based 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.