

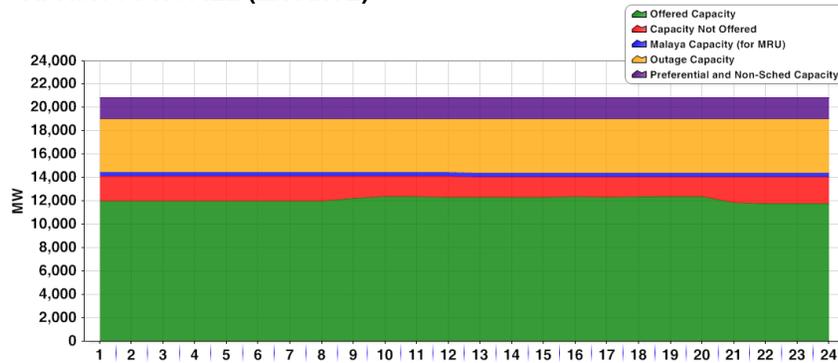
PEMC Market Assessment Highlights

- The average demand, including the average reserve schedule, was recorded at 9,884 MW on 28 December 2020. The General Community Quarantine (GCQ) and the Modified General Community Quarantine (MGCQ) are in place to contain the spread of the coronavirus disease. Starting 14 December – the National Capital Region, Isabela, Batangas, Iloilo City, Tacloban City, Iligan City, Lanao del Sur, Davao del Norte and Davao City are under the GCQ while the rest of the country is under the MGCQ.
- The total WESM registered capacity stood at 20,874 MW.
- The outage capacity averaged 4,593 MW. About 69% of which involved coal plants while about 15% involved natural gas plants. About 52% of the total outage capacity were from forced outages.
- The average effective supply was 12,205 MW.
- A supply margin averaging 2,321 MW was observed.
- The average GWAP for the day was at PHP 2,118/MWh, which was higher than the previous day's PHP 1,892/MWh and higher than the previous Monday's PHP 2,010/MWh.
- The secondary price cap was not imposed during the day.
- The top 5 major participant groups accounted for 75% of the average offered capacity. The Herfindahl-Hirschman Index (HHI) by major participant grouping indicated a moderately concentrated market based on the registered capacity, registered capacity (net of outage) and the offered capacity.
- No plant figured as a pivotal supplier, consistent with the wide supply margin of the day.

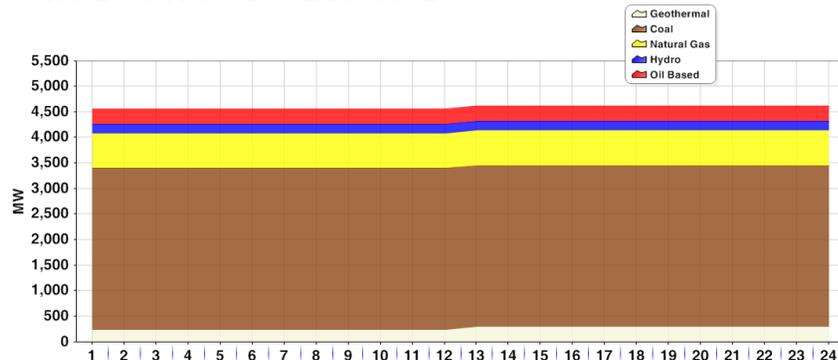
IEMOP Market Systems Advisory

- No IT-related issue was encountered in IEMOP's market systems on 28 December 2020.

CAPACITY PROFILE (EX-ANTE)



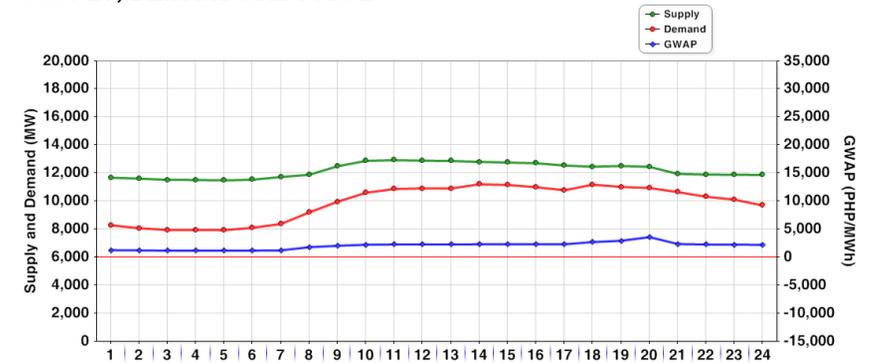
OUTAGE CAPACITY BY PLANT TYPE



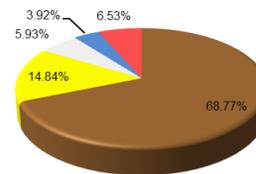
Summary of Prices, Demand and Supply

Particulars		Today	Prev Day	SameDay Prev wk	Percent Change From	
		28-Dec	27-Dec	21-Dec	prev day	same day last week
GWAP (PHP/MWh)	max	3,590.36	2,692.35	2,340.14	33.35%	53.42%
	min	1,170.99	1,192.44	1,124.41	-1.80%	4.14%
	ave	2,117.62	1,892.10	2,010.41	11.92%	5.33%
EFFECTIVE Supply (MW)	max	12,928.27	12,113.70	13,371.72	6.72%	-3.32%
	min	11,488.90	11,524.61	12,043.60	-0.31%	-4.61%
	ave	12,205.43	11,888.72	12,643.18	2.66%	-3.46%
System Demand (MW)	max	10,033.94	9,098.10	10,490.06	10.29%	-4.35%
	min	6,885.31	7,179.49	7,165.02	-4.10%	-3.90%
	ave	8,751.01	8,086.88	9,141.35	8.21%	-4.27%
DEMAND (ENERGY + RESERVE SCHED) (MW)	max	11,208.54	10,094.10	11,686.76	11.04%	-4.09%
	min	7,937.71	8,200.99	8,184.32	-3.21%	-3.01%
	ave	9,884.10	9,149.68	10,255.59	8.03%	-3.62%
SUPPLY MARGIN (MW)	max	3,588.25	3,323.62	3,916.78	7.96%	-8.39%
	min	1,282.19	1,924.54	1,105.28	-33.38%	16.01%
	ave	2,321.33	2,739.04	2,387.59	-15.25%	-2.78%

SUPPLY, DEMAND AND PRICE

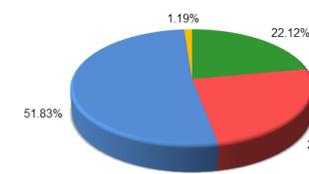


OUTAGE BY PLANT TYPE



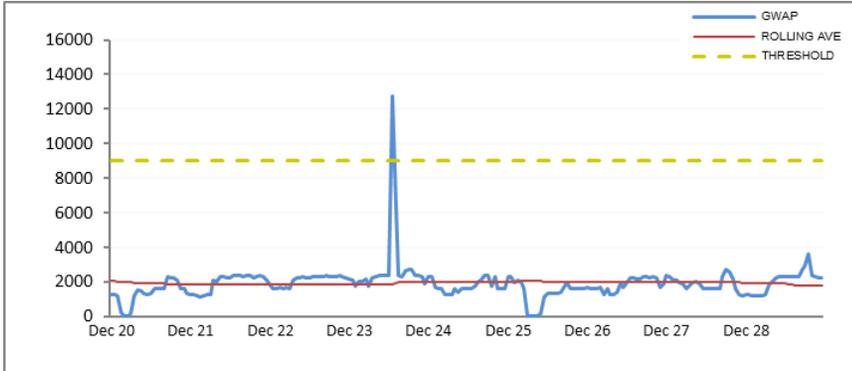
- Coal
- Natural Gas
- Geothermal
- Hydro
- Oil Based

OUTAGE BY CATEGORY

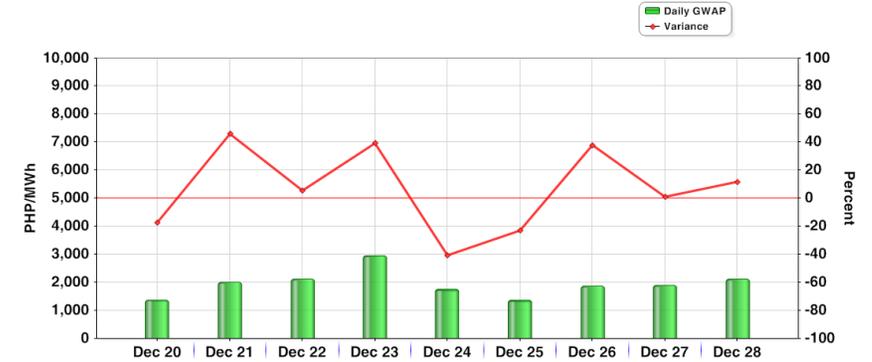


- Planned Outage
- Maintenance Outage
- Forced Outage
- Deactivated Shutdown

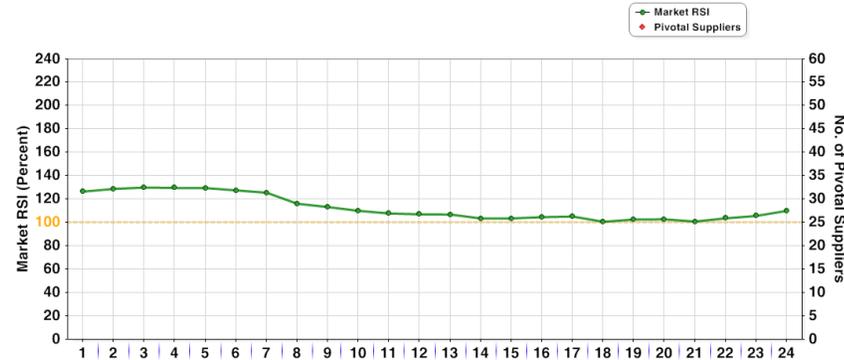
SECONDARY CAP



DAILY AVERAGE PRICES AND VARIANCE



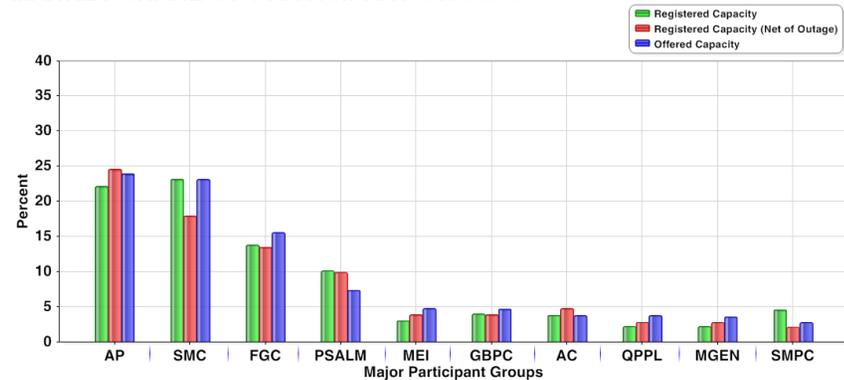
MARKET RSI VS PIVOTAL PLANTS BASED ON EFFECTIVE SUPPLY



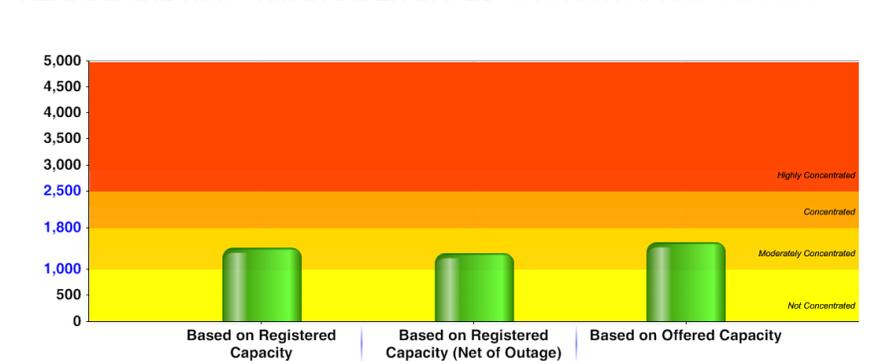
PIVOTAL PLANTS BASED ON EFFECTIVE SUPPLY (EX-ANTE)



MARKET SHARE OF PARTICIPANT GROUPS



HERFINDAHL-HIRSCHMAN INDEX BASED ON PARTICIPANT GROUPS



GLOSSARY OF TERMS

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.

The HHI is calculated using the (i) registered capacity, (ii) registered capacity net of outage, (iii) offered capacity, (iv) metered quantity, and (v) spot transaction (metered quantity net of bilateral contract declarations).

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.

PRICE SETTING FREQUENCY INDEX (PSFI) - A generator trading node is considered as a price setter when its last accepted offer price is between 95% to 100% of its nodal price. A generating plant is considered as price setter if at least one of its trading nodes was price setter in a given trading hour. The price setters are determined from: (i) ex-ante for trading intervals without pricing error during ex-ante, (ii) ex-post with pricing error during ex-ante but without pricing error during ex-post, (iii) market re-run results for trading intervals with pricing error both in ex-ante and ex-post, and (iv) trading intervals where the price substitution methodology (PSM) was applied. For trading intervals affected by PSM, the unconstrained marginal plants are considered price setters. Further, in instances of regional price separation, price setters are determined separately for each region.

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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.

MARKET SHARE - The fraction of the total capacity or energy that a company or related group owns or controls in the market.

PIVOTAL SUPPLIER INDEX (PSI) - The pivotal supply 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).

CAPACITY FACTOR - The index assesses the performance of the generators in the market. A high capacity factor indicates the high utilization of the generators.

CAPACITY PROFILE - The hourly factors affecting supply, which include, among others, the offered capacity, outage capacity and ancillary services schedule.

MAJOR PARTICIPANT GROUP - The grouping of generators by ownership or control.

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 hourly offer to supply electricity submitted by a generator.

METERED QUANTITY - The hourly quantity of electricity generated by a generator.

SPOT TRANSACTION - The hourly quantity of electricity sold to the market by a generator net of bilateal contract declaration accounted for in the settlement.

ANCILLARY SERVICES SCHEDULES - The hourly quantity scheduled by the System Operator to provide regulating, contingency and dispatchable reserves.

EFFECTIVE SUPPLY - The hourly 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.