

PEMC MARKET ASSESSMENT HIGHLIGHTS

The average demand and the reserve schedule, recorded at 10,439 MW during the week of 31 Jan -06 Feb 2022, was lower than the previous week at 10,555 MW and higher than the same week last year at 10,206 MW. Metro Manila was reverted back to Alert Level 2, while Baguio City stayed in Alert Level 3, effective 1-15 February.¹

The WESM registered capacity stood at 21,100 MW at the end of the week.

An average supply margin of 824 MW was observed during the week, which is higher by about 80% relative to the previous week and lower by about 61% in comparison with the same week last year. The supply margin of 379.74 MW observed on 02 February 2022 00:05 was the tightest during the week. The average supply margin was 794.87 MW at peak intervals and 842.5 MW at off-peak intervals.

The outage capacity averaged at 3,415 MW, lower than last week's 4,797 MW. About 56% of the 3,415 MW involved Coal plants, while in terms of category, about 54% were Forced Outages.

The average effective supply during the week was 11,263 MW, higher than the 11,012 MW of the previous week and lower than the 12,343 MW during the same week last year. Ramping limitations in generators' offers persisted which caused the lowering of the effective supply.

Average GWAP was recorded at PHP 3,890/MWh from PHP 8,671/MWh last week. This is higher than the PHP 3,322/MWh during the same week last year. Bohol Island was still under Market Suspension for the covered period.

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 a concentrated market based on the registered and offered capacities.

Based on the effective supply, the top 5 pivotal plants during the week were –

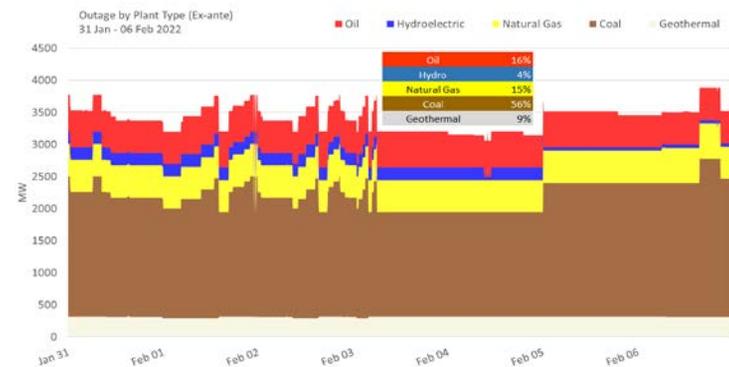
1. SUAL CFTPP (about 61.76% of the time)
2. ILIJAN NGPP (about 58.38% of the time)
3. STA RITA NGPP (about 37.1% of the time)
4. PAGBILAO CFTPP (about 22.22% of the time)
5. MASINLOC CFTPP (about 12.9% of the time)

The reduction in the capacity offered by oil-based plants, which used to be lower-priced, drove the significant increase in average offer prices for the resource type. On the other hand, coal plants offered more capacity which were relatively higher-priced resulting in a slight uptick in average offer prices. Similarly, the last portion of the natural gas plants' offered capacity demonstrated an increase. Contrastingly, hydro plants noted a downward shift to lower average offer prices.

IEMOP MARKET SYSTEMS ADVISORY

No IT-related issue was advised in IEMOP's market systems from 31 Jan -06 Feb 2022.

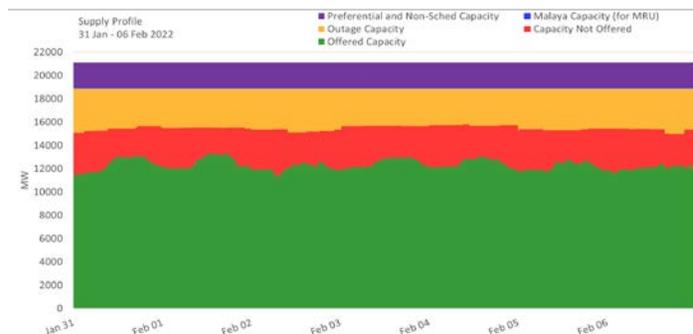
OUTAGE CAPACITY BY PLANT TYPE



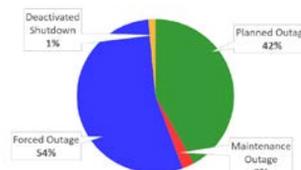
SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars	31 Jan -06 Feb 2022	Previous Week (24 - 30 Jan 2022)	Same Week, Previous Year (25 - 31 Jan 2021)	Percent Change From		
				Previous Week	Same Week, Prev Year	
GWAP (PHP/MWh)	max	12,647.00	33,164.83	12,033.73	-61.87%	5.10%
	min.	-9,840.91	0.00	0.00	-	-
	w. ave.	3,889.89	8,671.23	3,322.42	-55.14%	17.08%
Effective Supply (MW)	max	13,069.20	12,553.47	13,642.11	4.11%	-4.20%
	min.	9,493.83	9,177.32	11,491.12	3.45%	-17.38%
	ave.	11,262.98	11,011.96	12,343.04	2.28%	-8.75%
System Demand (MW)	max	11,292.72	11,952.31	11,035.83	-5.52%	2.33%
	min.	7,986.15	8,000.31	6,686.60	-0.18%	19.44%
	ave.	9,596.81	9,886.44	9,059.22	-2.93%	5.93%
Demand + Reserve Schedule (MW)	max	12,297.72	12,262.83	12,233.43	0.28%	0.53%
	min.	8,745.15	8,763.31	7,729.10	-0.21%	13.15%
	ave.	10,438.62	10,555.07	10,206.45	-1.10%	2.27%
Supply Margin (MW)	max	1,323.39	1,123.55	3,833.32	17.79%	-65.48%
	min.	379.74	96.78	640.40	292.39%	-40.70%
	ave.	824.35	456.89	2,136.59	80.43%	-61.42%

SUPPLY PROFILE



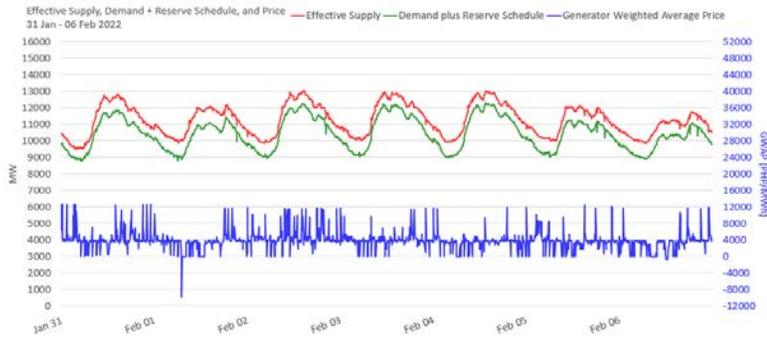
OUTAGE CAPACITY BY OUTAGE CATEGORY



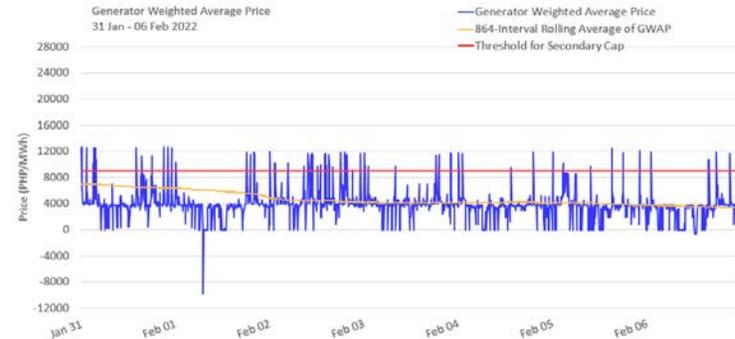
¹ Metro Manila and seven other areas were placed on Alert Level 2 beginning February 1: Batanes, Bulacan, Cavite, Rizal, Biliran, Southern Leyte, Basilan;

Baguio City and the following other areas are on alert level 3: Abra, Apayao, Baguio City, Benguet, Kalinga, Mountain Province, Dagupan City, Ilocos Norte, Ilocos Sur, La Union, Pangasinan, Santiago, Cagayan, Isabela, Nueva Vizcaya, Quirino, Angeles City, Aurora, Bataan, Nueva Ecija, Olongapo City, Pampanga, Tarlac, Zambales, Batangas, Laguna, Lucena City, Quezon Province, Marinduque, Romblon, Occidental Mindoro, Oriental Mindoro, Puerto Princesa City, Albay, Camarines Norte, Camarines Sur, Catanduanes, Masbate, Naga City, Sorsogon, Aklan, Antique, Bacolod City, Capiz, Iloilo City, Iloilo, Negros Occidental, Guimaras, Cebu City, Lapu-Lapu City, Mandaue City, Bohol, Cebu, Negros Oriental, Siquijor, Ormoc City, Tacloban City, Eastern Samar, Leyte, Northern Samar, Western Samar, City of Isabela, Zamboanga City, Zamboanga Del Sur, Zamboanga del Norte, Zamboanga Sibugay, Bukidnon, Cagayan de Oro City, Iligan City, Lanao del Norte, Misamis Occidental, Misamis Oriental, Davao City, Davao Del Sur, Davao Del Norte, Davao Oriental, Davao de Oro, General Santos City, North Cotabato, Sarangani, South Cotabato, Sultan Kudarat, Maguindanao, Cotabato City, Lanao Del Sur.

SUPPLY, DEMAND AND PRICE



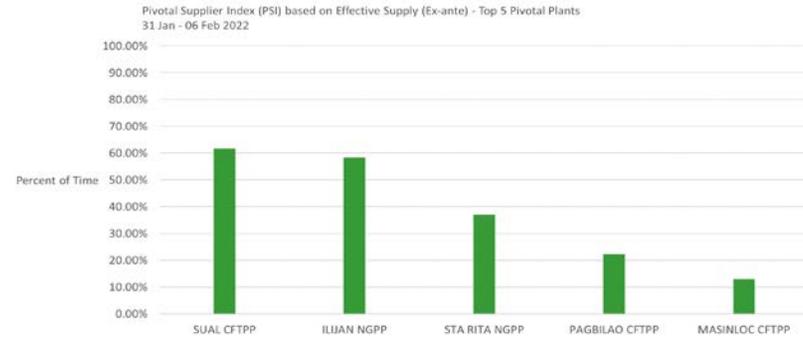
GENERATOR WEIGHTED AVERAGE PRICE



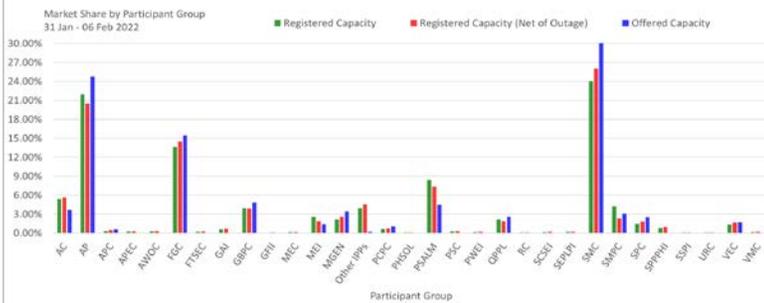
MARKET RSI VS PIVOTAL PLANTS



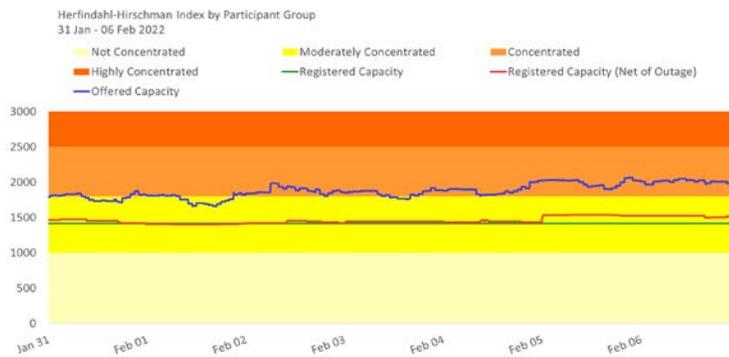
PSI



MARKET SHARE



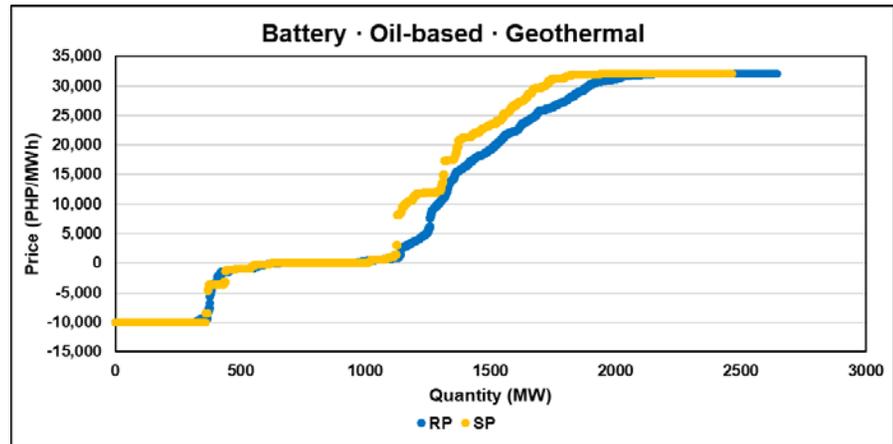
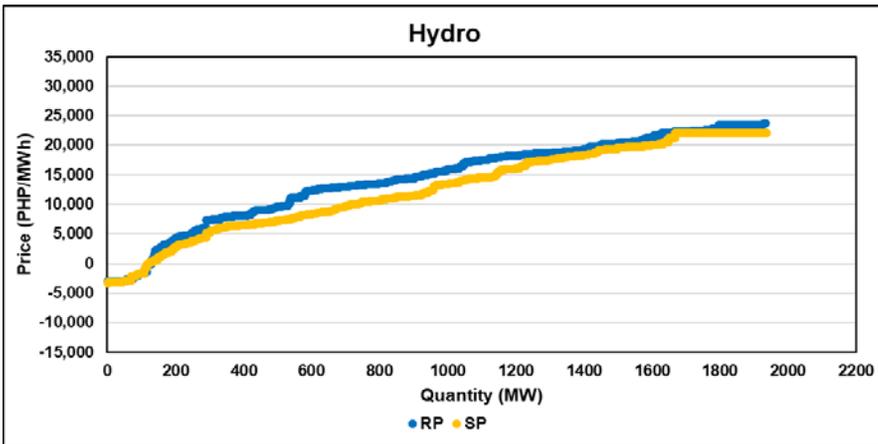
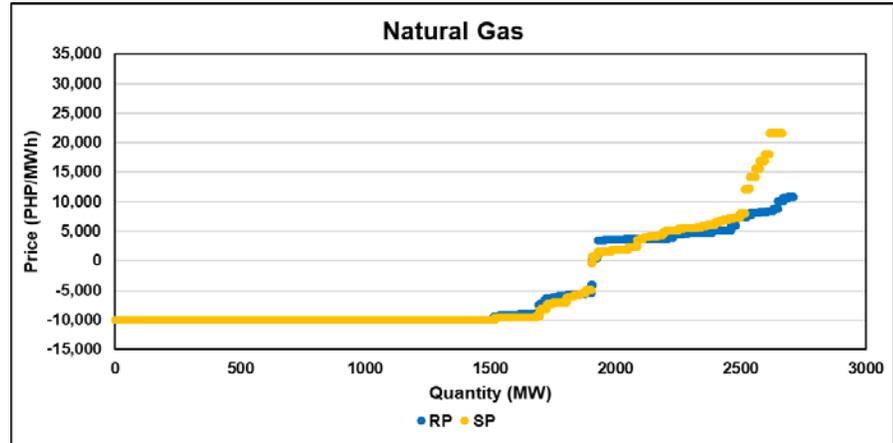
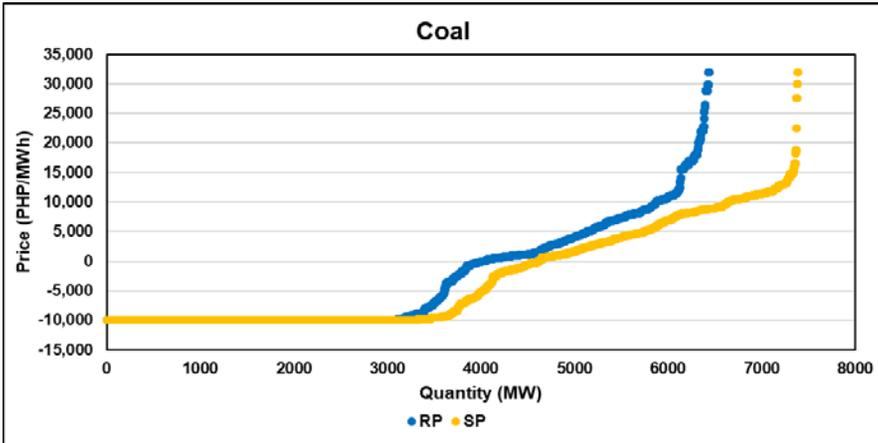
HERFINDAHL-HIRSCHMAN INDEX



OFFER PATTERN ANALYSIS

Legend

RP: Reference Offer Price – the week of 24-30 Jan 2022 was used as a control for the comparison with the subject price
 SP: Subject Offer Price – the week of 31 Jan-06 Feb 2022





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.

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 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).

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.

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