



Market Surveillance Committee Monthly Market Assessment Report

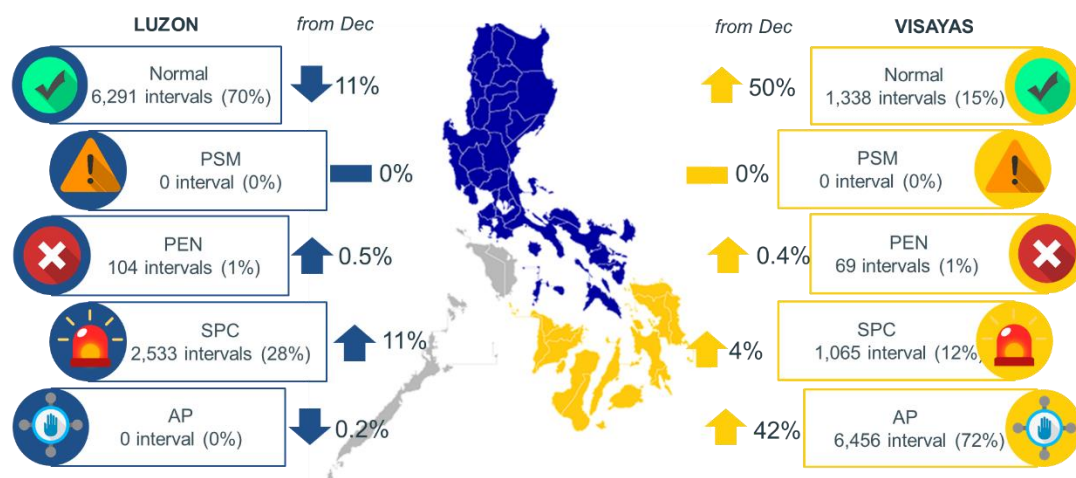
26 December to 25 January 2022

AUGUST 2022

This Report is prepared by the
Philippine Electricity Market Corporation –
Market Assessment Group for the
Market Surveillance Committee

ASSESSMENT OF THE MARKET

SUMMARY OF PRICING CONDITIONS



- **Market Intervention (MI)** was imposed to **Visayas region** due to onslaught of typhoon Odette in December 2021, followed by the ERC's declaration of **Market Suspension (MS)** affecting 6,456 intervals in January 2022.
- Intervals with **pricing error notices** were mainly due to **inappropriate input data** which affected prices and schedules for 69 intervals of the system.
- The cumulative 3-day (8,640 intervals) average computation of generator-weighted average prices (GWAP) breached the PHP9,000/MWh threshold and resulted to the imposition of **secondary price cap** for **1,065 intervals** from 375 intervals last month, in both Luzon and Visayas. Regional imposition of secondary price cap was also observed in Luzon for 1,468 intervals. The increase was brought about by **insufficient system supply** that led to much higher prices in the market thereby increasing the chances of triggering the cap's threshold.
- No price substitution methodology (PSM) was noted for January 2022 billing.

NOTABLE HIGHLIGHTS

1. ERC declared MS due to the impact of typhoon Odette
 - Impact of typhoon Odette from December 2021, where the ERC imposed MS in the region until 16 January 2022, but the Bohol area remained to be under MS for the rest of the billing month
2. System Demand was observed to have decreased by an average of 7.5% or an average of 8,695 MW from 9,396 MW last December 2021
 - Attributable to the damaged transmission lines brought about by the devastation of typhoon Odette
3. The effective supply likewise decreased to 10,019 MW from 10,947 MW mainly caused by the absence of transmission lines that led to the suspension of power exchange between Luzon and Visayas region
4. Malaya for the must-run unit (MRU) decreased its capacity from 350 MW to 130 MW
 - Unit 1 of Malaya is not operating due to damaged turbine
5. Market prices increased by 10.1 percent due to depleted supply margin.
 - Increase in average price at PHP6,851/MWh in January 2022 from PHP6,224/MWh in December 2021
 - Year-on-year comparison of monthly average price posted a 149.2 percent increase from an average of PHP2,749/MWh last year during the height of the pandemic with strict implementation of quarantine measures.

Must-Run Unit (MRU): a generating unit identified and instructed, on real time or scheduled basis, by the System Operator to either come on-line or provide additional energy on a particular trading interval. The dispatch of which is said to be Out-of-Merit to address System Security requirements. However, MRUs shall be utilized only after the System Operator has exhausted all available Ancillary Services.

MARKET OUTCOME

SUPPLY MARGIN



588
MW
(536 MW in December)

EFFECTIVE SUPPLY

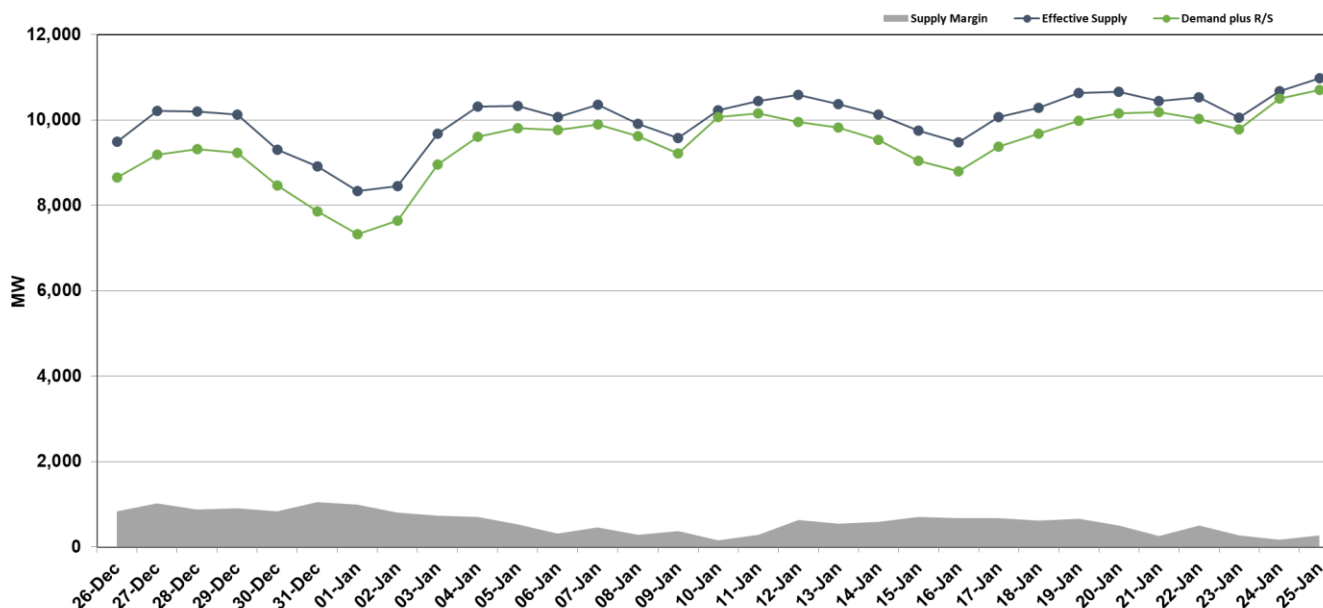


10,019
MW
(10,497 MW in December)

DEMAND PLUS RESERVE SCHEDULE



9,431
MW
(10,412 MW in December)



Electricity demand with consideration of reserve schedules decreased by an average of 9.4 percent or from an average of 10,412 MW last month to 9,431 MW this month.

Effective supply likewise decreased as the level of outage capacity increased brought about by, among others, transmission line outages.

Average Supply Margin is generally observed to have improved and posted an average increase of 9.6 percent or an average of 588 MW from 536 MW last December billing. However, episodes of thin supply margin due to high outage level puts the Luzon grid on a yellow alert level on 10 to 11 January 2022.

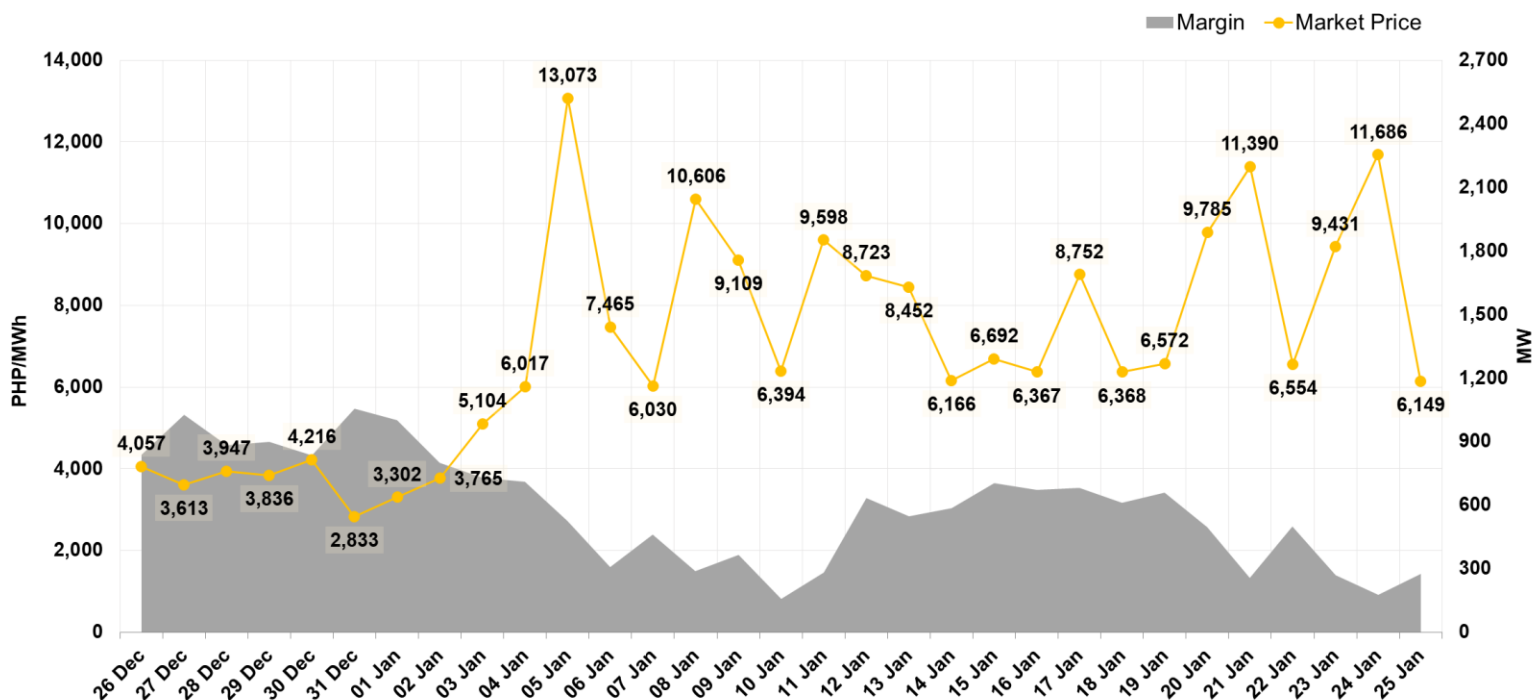
Meanwhile, no alert level was imposed, even with the narrow margin situation in 23 to 25 January.

MARKET OUTCOME

Zone	Average LWAP (PHP/MWh)
NLUZON	7,129.00
MMANILA	7,188.87
SLUZON	7,123.67
LEYTE	6,589.14
CEBU	6,536.45
NEGROS	6,574.64
BOHOL	6,016.61
PANAY	6,605.90

With the dynamics between the supply and demand, the January 2022 billing month opened with relatively low level of market prices. However episodes of price spikes became evident throughout the January billing period which is highly attributable to the high outage capacity aggravated by the damaged transmission lines brought about by the impact of the devastation of typhoon Odette that caused transmission outage which subsequently barred power exchange between two regions, resulting to thin supply margin causing the electricity price to increase by an average of 10.1 percent from previous month's PHP6,224/MWh to PHP6,851/MWh.

The 15 June 2021 incident involving the underwater drilling operations of DPWH that damaged one of the submarine cables of NGCP connecting the Cebu-Negros islands continuously affected the power rates in some areas of the Visayas region and contributed to the prevailing price discrepancy between Bohol and the rest of the grid.



PRICE



6,851
PHP/MWh
(PHP6,224/MWh in December)

MARKET OUTCOME

RAMP LIMITED CAPACITY

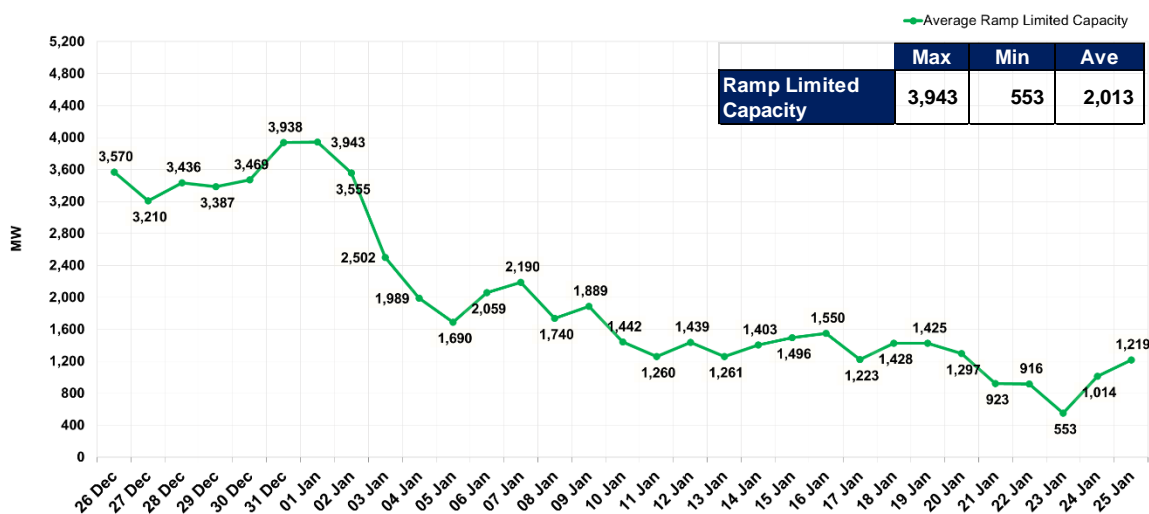
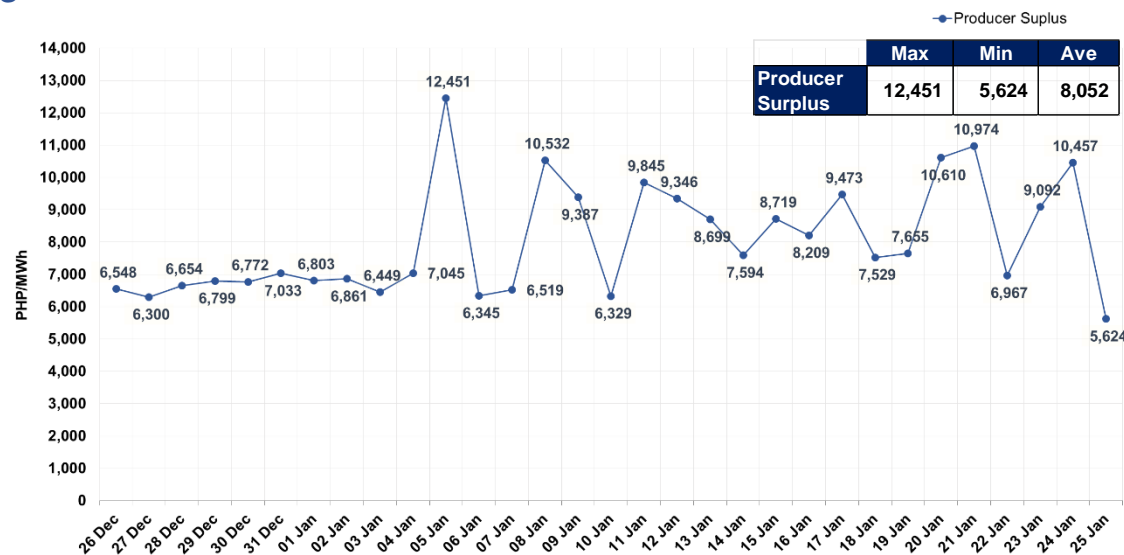


2,013
MW
(1,727MW in December)

PRODUCER SURPLUS



8,052
PHP
(6,639MW in December)

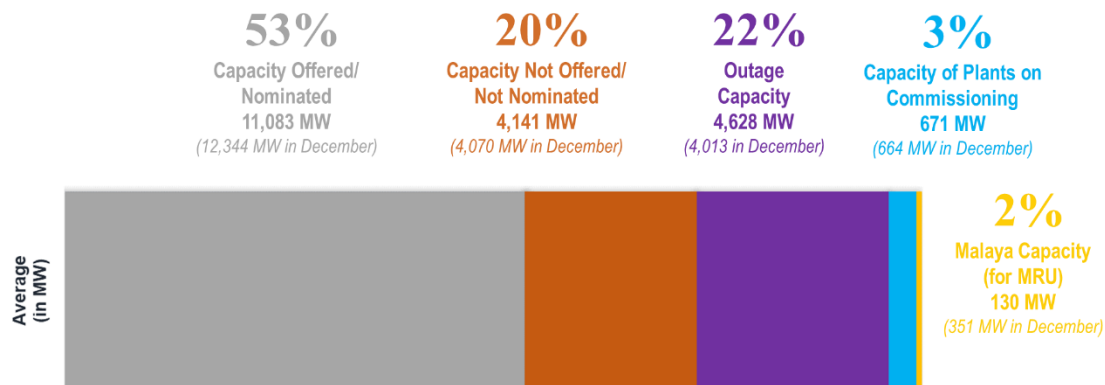


Ramp limited capacities for the month of January increased by 17 percent. Occurrences of ramp limited capacities were more evident in the new market regime due to shorter intervals requiring for faster delivery of scheduled generations. Subsequently, capacities offered/nominated went up even with the observance of high level of outage capacities.

Producer/generator surplus, derived from the difference between actual market price and respective offer prices, averaged at PHP8,052/MWh across all generators during the month.

Daily average price of the producer/generator surplus was derived from the daily weighted average price of all the generator trading participants during peak and off-peak hours. Increase and decrease in the daily weighted average price depend on the generator schedule per dispatch interval.

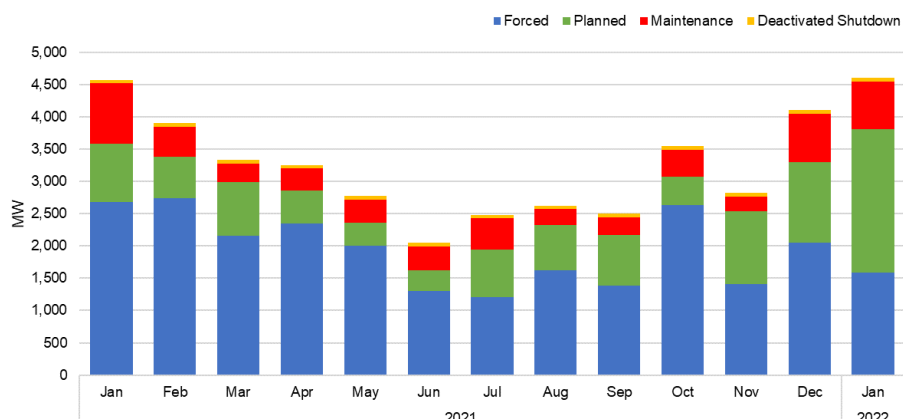
CAPACITY PROFILE



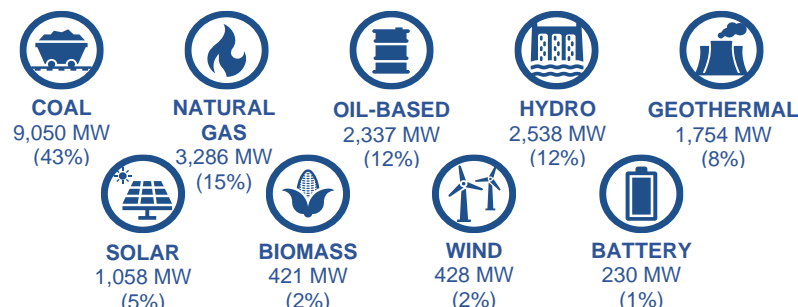
Note: Capacities not offered are further subject to validation and assessment of the PEMC-Enforcement and Compliance Office (ECO)

- Generators on testing and commissioning (T&C) slightly increased and constituted 3 percent of the total registered capacity. One (1) plant has been issued with COC but has not been injecting power to the grid.

OUTAGE CAPACITY BY OUTAGE CATEGORY

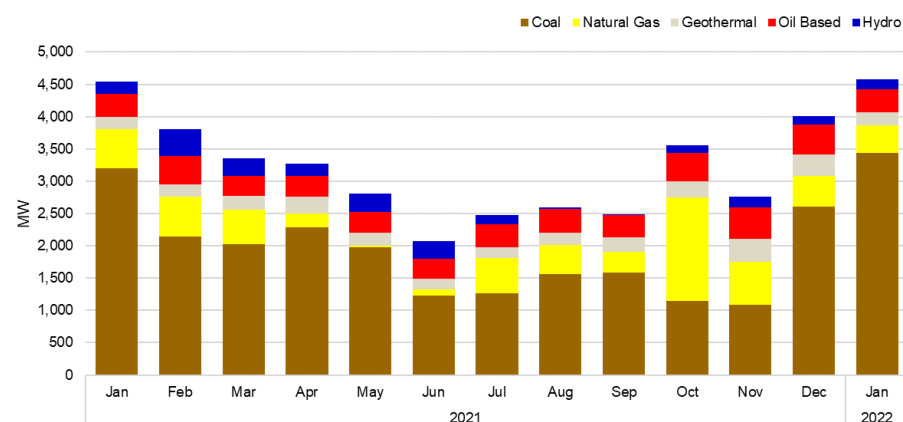


Average outage capacity was generally observed to have increased for the January billing. All categories posted an increase highly attributable with the planned outages as approved in the Grid operating maintenance plan (GOMP). For ease of reference, Annex A shows the detailed information on plant outages in all categories.



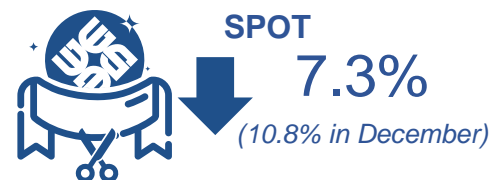
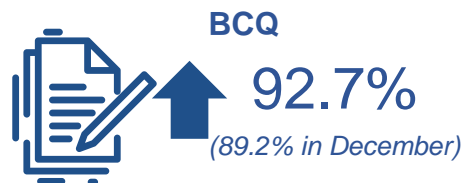
- The WESM registered capacity decreased by 219.1 MW from a total of 21,318.7 MW to 21,099.6 MW. The net decrease resulted from the change in capacity of a power plant.
- Plants that decreased their capacities were Ingrid Power Holding Inc. and Belgrove Corporation's Oil-based power plants, and First gas power corporation's Natural Gas power plant.

OUTAGE CAPACITY BY PLANT TYPE



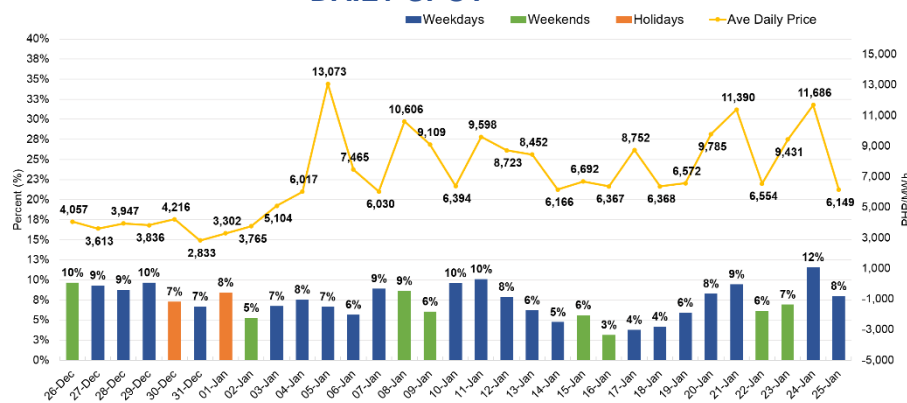
Coal power plants recorded with the highest increase in the outage capacity brought about by the effects of the devastation of typhoon Odette.

MARKET TRANSACTIONS



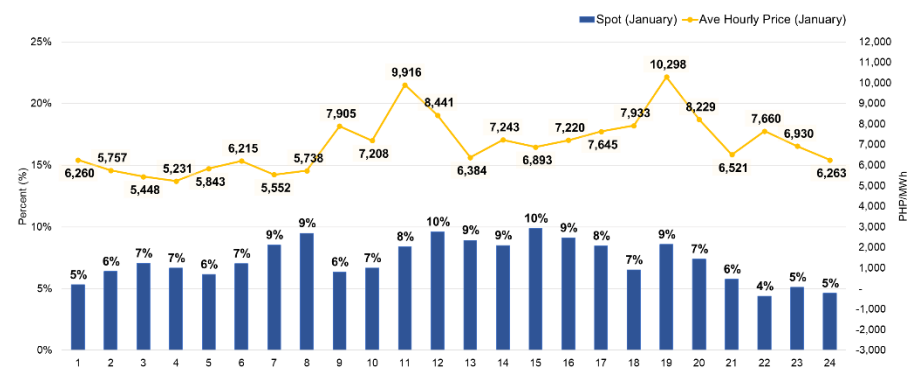
Note: Spot share percentage is computed as the ratio of spot over the metered quantity in MWh.

DAILY SPOT



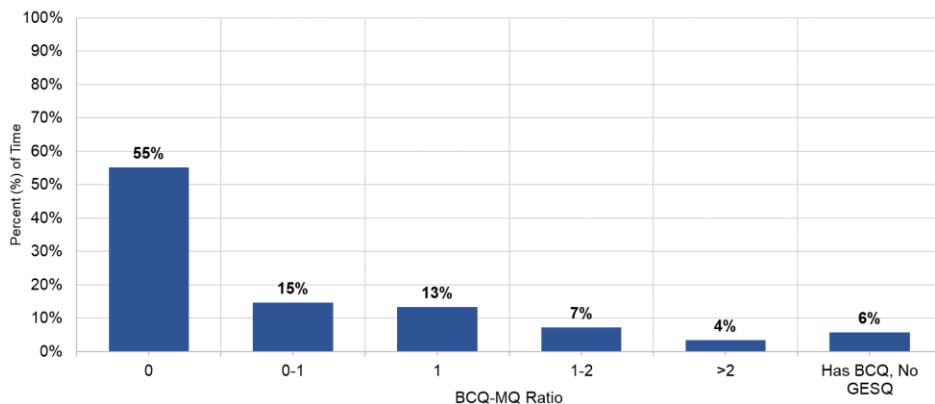
Spot share during weekdays averaged at 7.6 percent while the spot share during weekends average at 6.6 percent. The relatively high market prices due to low level of supply, have contributed to the resulting spot quantities in the market. Higher exposures during the weekend have been brought about by lower market prices during these instances due to lower demand consumptions.

HOURLY SPOT



Total spot quantities of generator participants in January stood at an average of 6.4 percent during off-peak and 8.2 percent during peak hours. In general, the trend shows high spot transactions during periods of relatively low prices.

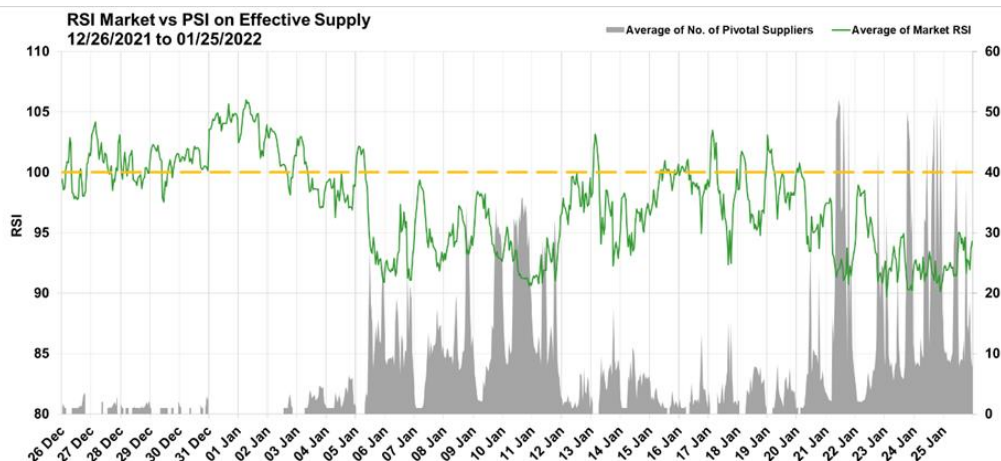
BCQ-MQ RATIO



- The resulting BCQ to MQ ratio of 0 demonstrates that the entire generations were fully sold in the market 55 percent of the time.
- Roughly 13 percent of the time had a BCQ to MQ ratio of 1 which means that the entire metered quantities were being allocated to serve bilateral contract obligations.
- Generators with no MQ and fully bought energy in the market to serve their bilateral contract obligations were accounted at 6 percent of the time.
- The remaining 26 percent accounted for BCQs consuming a fraction of their MQ (15 percent), declared BCQs up to twice their MQ (7 percent), and declared BCQs more than twice their MQ (4 percent).

STRUCTURAL COMPETITION INDICES

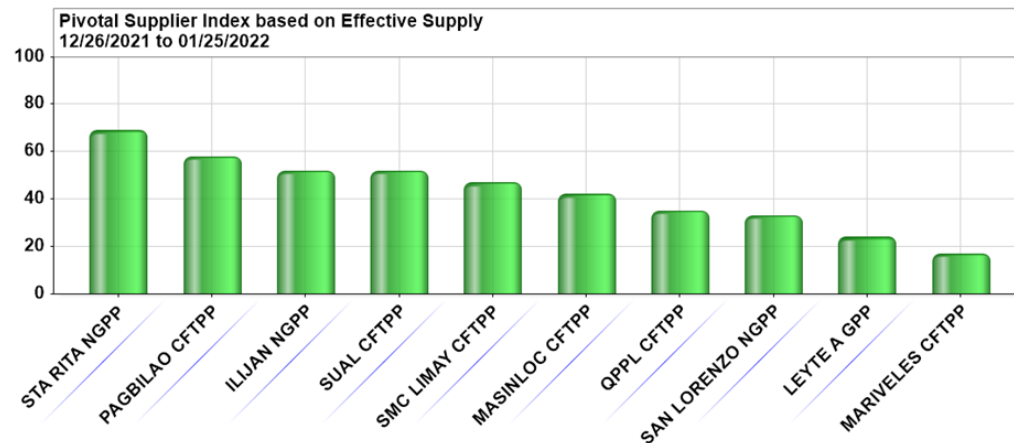
MARKET RSI



Out of the 8,928 trading intervals in January 2022 billing month, 6,427 intervals had a Residual Supply Index (RSI) below the 100 percent mark, indicating presence of pivotal suppliers.

The average market prices for intervals with RSI below 100 percent was PHP8,255/MWh while those with RSI above 100 was PHP3,628/MWh.

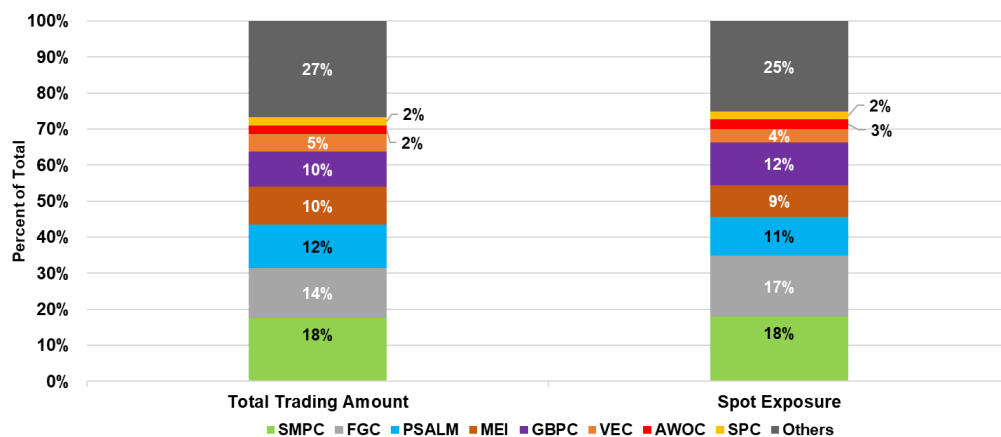
PIVOTAL PLANTS



A total of 131 power plants were pivotal during the period with 88 coming from Luzon and 43 from Visayas.

The notable decrease in effective supply due to high outage level translated to a low RSI and high number of pivotal suppliers per 5-min dispatch interval.

TTA AND SPOT SHARE



- San Miguel Power Corp. (SMPC) topped the list as the entity with the highest TTA share of sellers in the market with approximately 18 percent.
- First Gen Corp (FGC) came in as the second highest TTA share of around 14 percent.
- Power Sector Assets and Liabilities and Management (PSALM) became third place this month, ending with a 12 percent of TTA share.
- The top 3 highest TTA shares comprised 44% of the total shares in the market.
- Total trading amount is derived from the total energy sold and purchased in the market.

DEFINITIONS, REFERENCES, AND INTERPRETATION

- **Pricing Error Notice (PEN)**

- Pricing errors is a pricing algorithm in the market and are categorized according to cause, as either Network congestion pricing errors or non-congestion pricing errors. Pricing error notice shall be issued only for the market run where the pricing error is determined by the Market Operator to have occurred.

- **Secondary Price Cap (SPC)**

- is a preventive mitigating measure instituted by the ERC to avoid excessive high market prices through its imposition on succeeding intervals, upon breach of PHP9,000/MWh Rolling Average of the generator-weighted average price (GWAP) for a running period of 3 days or 864 5-minute intervals. In this case, market prices are capped at PHP6,245/MWh.

- **Administered Price (AP)**

- administered price determination methodology which shall be implemented by the Market Operator to impose administered prices on dispatch intervals under market suspension or market intervention.
- administered price shall be established by the Market Operator in accordance with guiding principles as set forth by the WESM rules.

- **Generator/Producer Surplus**

- Producer surplus represents the difference between the price a generator receives and their willingness to sell for each quantity.

- **Must Run Unit**

- Is a generating unit identified and instructed, on real time or scheduled basis, by the System Operator to either come on-line or provide additional energy on a particular Trading Interval but the dispatch of which is said to be Out of Merit to address System Security requirements. However, MRUs shall be utilized only after the System Operator has exhausted all available Ancillary Services.

- **Price Substitution Methodology (PSM)**

- is a pricing algorithm that shall be implemented in all the regions where the WESM is in operation. In cases where a region/s has no interconnection with other regions, or has no exchange of power with other regions, this region/s shall be separately assessed for the application of the price substitution methodology.
- The price substitution methodology shall apply to a *dispatch interval* when the trigger factor exceeds the threshold, which shall be set at 0.2, subject to annual review.
- The dispatch schedules arrived at in the original (constrained) market solution for the relevant dispatch interval will stand and will be the basis for dispatch by the System Operator irrespective of the results of the unconstrained solution. Redispatch of generation units will be implemented by the System Operator in accordance with relevant provisions of the WESM Rules and Market Manuals, the Philippine Grid Code and other relevant rules, regulations, issuances, guidelines, and procedures.

- **Ramp Limited Capacity**

- are generators restricted capacities due to the plants' intrinsic ramp rates.
- Ramp rate is essentially the speed at which a generator can increase (ramp up) or decrease (ramp down) generation. Generating units have different characteristics, making some more suited to supplying certain needed functions.

Annex A. List of Major Plant Outages

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Days)	Outage Type	Remarks
SOLR	Subsol	59.3	01/22/2022 6:01	01/24/2022 18:01	2.50	Planned Outage	Planned outage from 22--24 January
NATG	San Gabriel	420	01/22/2022 0:31	01/25/2022 9:46	3.39	Planned Outage	Planned Outage.
OIL	TPV1 1	6.7	01/17/2022 14:54	01/19/2022 15:46	2.04	Forced Outage	FOR INTERNAL INSPECTION
HYD	Kalayaan 2	180	01/10/2022 0:01	01/16/2022 16:42	6.70	Planned Outage	On Planned Outage from 10-16 January 2022.
HYD	Kalayaan 1	180	01/10/2022 0:01	01/19/2022 1:16	9.05	Planned Outage	On Planned Outage from 10-16 January 2022.
NATG	Sta. Rita 3	285.5	01/08/2022 2:48	01/10/2022 7:15	2.19	Planned Outage	Planned Outage on 08 and 09 January 2022
BIOF	HPCO	2	12/31/2021 20:58	01/04/2022 14:25	3.73	Maintenance Outage	Offline, weekly maintenance.
BIOF	FFHC	9	12/31/2021 18:06	01/05/2022 4:41	4.44	Maintenance Outage	Offline, weekly maintenance.
GEO	Bacman 3	20	12/30/2021 17:51	01/02/2022 15:24	2.90	Forced Outage	Tripped with 20MW load.
NATG	Sta. Rita 4	264	12/28/2021 12:34	12/31/2021 12:38	3.00	Forced Outage	Affected by the SPEX Malampaya gas restriction.
NATG	Sta. Rita 2	255.7	12/28/2021 11:21	01/03/2022 17:21	6.25	Forced Outage	Tripped due to Low Hydraulic Pressure with 155MW load
GEO	Upper Mahiao 4	32	12/27/2021 5:58	01/05/2022 21:33	9.65	Forced Outage	Generator under voltage
GEO	Bacman 1	60	12/27/2021 4:01	12/30/2021 12:04	3.34	Forced Outage	Tripped with 50MW load
GEO	Upper Mahiao 4	32	12/13/2021 0:13	12/27/2021 5:56	14.24	Forced Outage	3-day emergency shutdown for implementation of corrective action related to arc flash incident in the common bus of unit 3 and 4 last 20 October 2021
COAL	TPC-Sangi 1	82	12/16/2021 18:51	01/06/2022 16:30	20.90	Forced Outage	Isolated due to tripping of 34.5 kv lines. Typhoon odette
COAL	THVI 2	169	12/16/2021 18:09	01/17/2022 17:58	31.99	Forced Outage	UNIT TRIPPED AFFECTED BY THE TRIPPING OF DAANLUNGSOD-MAGDUGO 138KV LINE CAUSED BY TYPHOON ODETTE
COAL	THVI 1	169	12/16/2021 18:25	01/09/2022 17:23	23.96	Forced Outage	UNIT TRIPPED WHILE ON HOUSELOAD OPERATION. TYPHOON ODETTE
COAL	SBPL	455	12/11/2021 0:01	01/19/2022 8:59	39.37	Planned Outage	Planned outage up to 19 Jan 2022.
NATG	San Gabriel	420	12/23/2021 3:45	12/28/2021 0:07	4.85	Forced Outage	Gas allocation was diverted to San Lorenzo 60 due to Malampaya gas restriction.
GEO	Makban 1	63.2	11/02/2021 16:27	12/30/2021 23:42	58.30	Planned Outage	Shutdown requested by APRI to facilitate Makban Plant A Unit 1 retrofitting and other maintenance activities.
GEO	Mahanagdong B1	5	12/17/2021 9:02	12/31/2021 8:11	13.96	Forced Outage	Affected by blackout
COAL	Kepco Salcon 2	103	12/16/2021 20:03	01/15/2022 7:23	29.47	Forced Outage	Tripped due to typhoon odette
COAL	Kepco Salcon 1	103	12/16/2021 21:07	12/26/2021 21:13	10.00	Forced Outage	Tripped due to typhoon odette
BIOF	HPCO	2	12/25/2021 5:05	12/27/2021 17:38	2.52	Maintenance Outage	Offline due to weekly shutdown
COAL	GNP Dinginin 1	668	11/29/2021 23:39	01/25/2022 12:34	56.54	Maintenance Outage	Performance instrument calibration.
COAL	CEDC 3	82	12/16/2021 21:01	12/29/2021 6:41	12.40	Forced Outage	Tripped due to typhoon odette
COAL	CEDC 1	82	12/16/2021 23:20	01/18/2022 3:55	32.19	Forced Outage	Tripped while house load. Typhoon odette
COAL	ANDA 1	72	12/19/2021 12:05	01/08/2022 22:49	20.45	Planned Outage	Planned Outage.