



Market Surveillance Committee Monthly Market Assessment Report

26 March to 25 April 2021

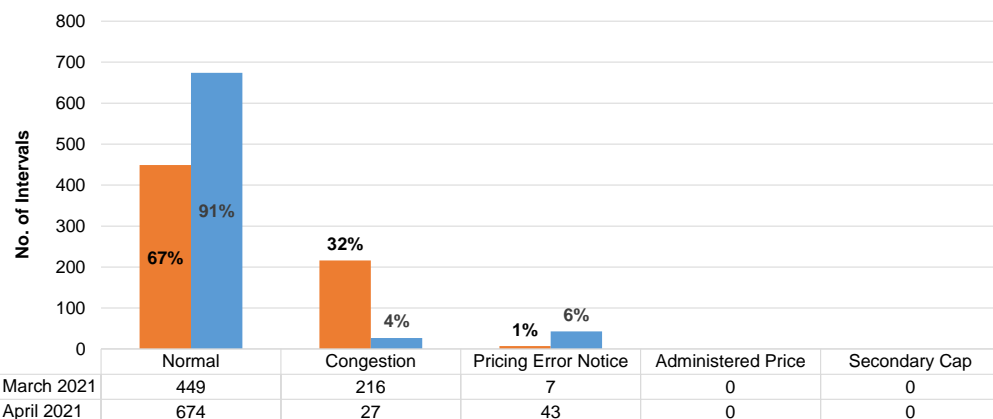
MAY 2021

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

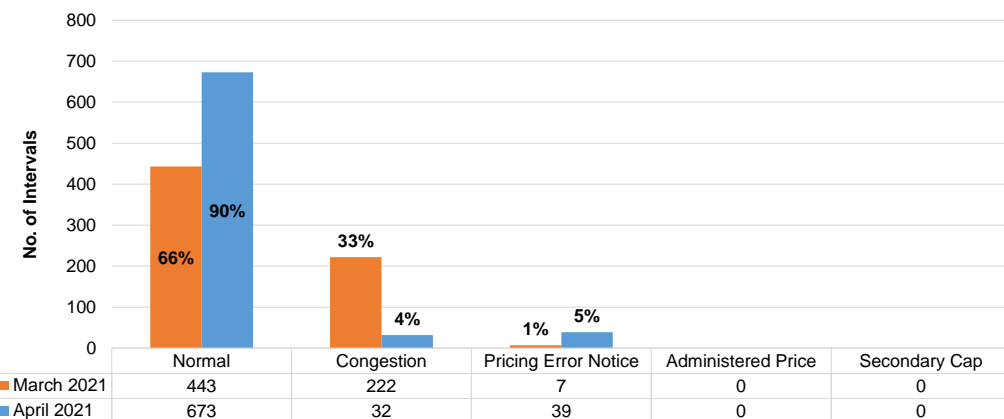
ASSESSMENT OF THE MARKET

SUMMARY OF PRICING CONDITIONS

LUZON



VISAYAS



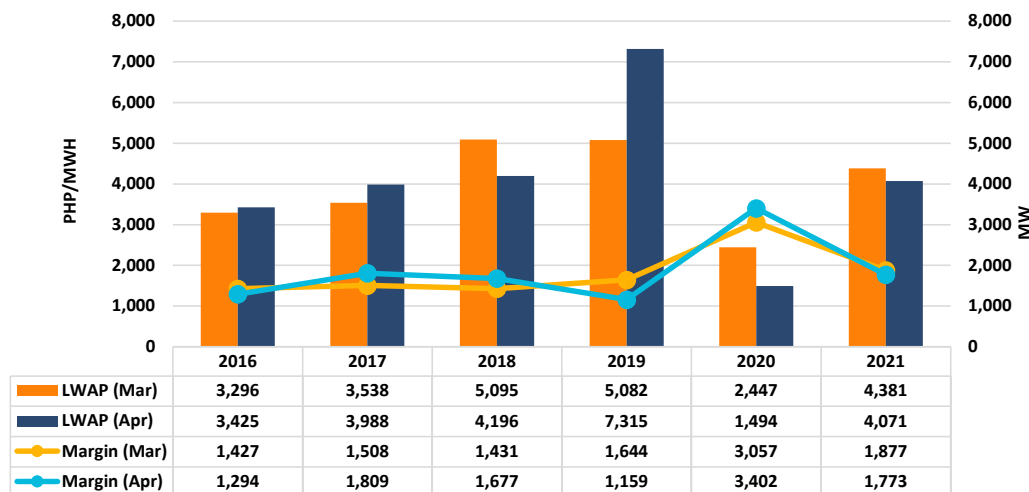
- The number of intervals imposed with Price Substitution Methodology (PSM) significantly dropped after observing less constraints from the Samboan-Amlan line than last month. Additionally, the constraint in following lines resulted to imposition of PSM on some intervals:
 - Naga – Quioit line
 - Bacolod – Barotac line
 - Amadeo – Calaca line
- Intervals with error notices not caused by congestion remained at a low count as a result of:
 - Inappropriate input data affecting Luzon and Visayas prices and schedules
- None of the intervals were imposed with administered prices and secondary price caps this month

Notable Highlights:

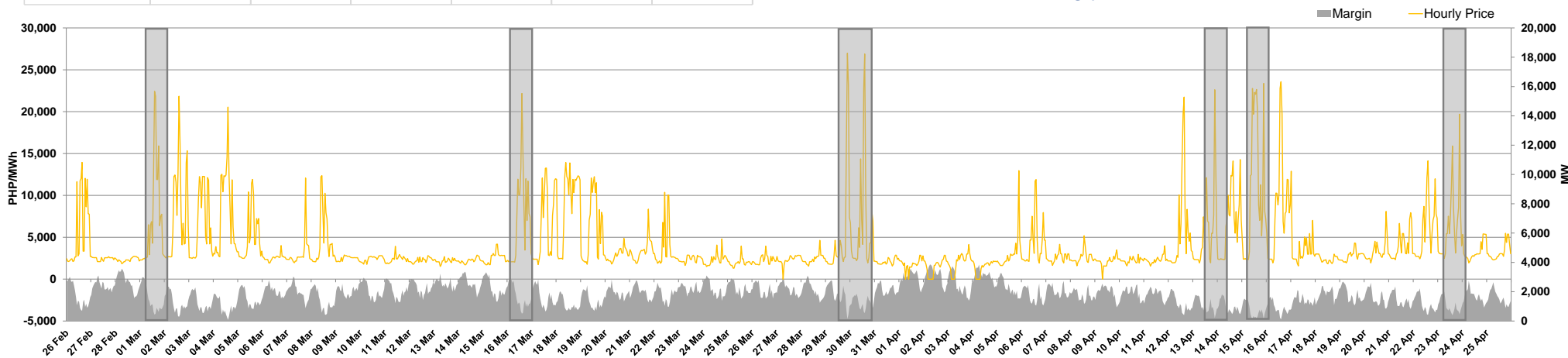
- High level of outage capacity during the hot dry season
 - Despite an improvement from last month, average outage capacity remained relatively elevated
- Deration in available capacity of natural gas plants
 - SPEX Malampaya gas supply restriction since 22 March 2021, 2200H
- Occurrence of price spikes and interesting pricing events
 - Increase in generation of oil-based plants which signaled high prices

MARKET OUTCOME

PRICE AND SUPPLY MARGIN

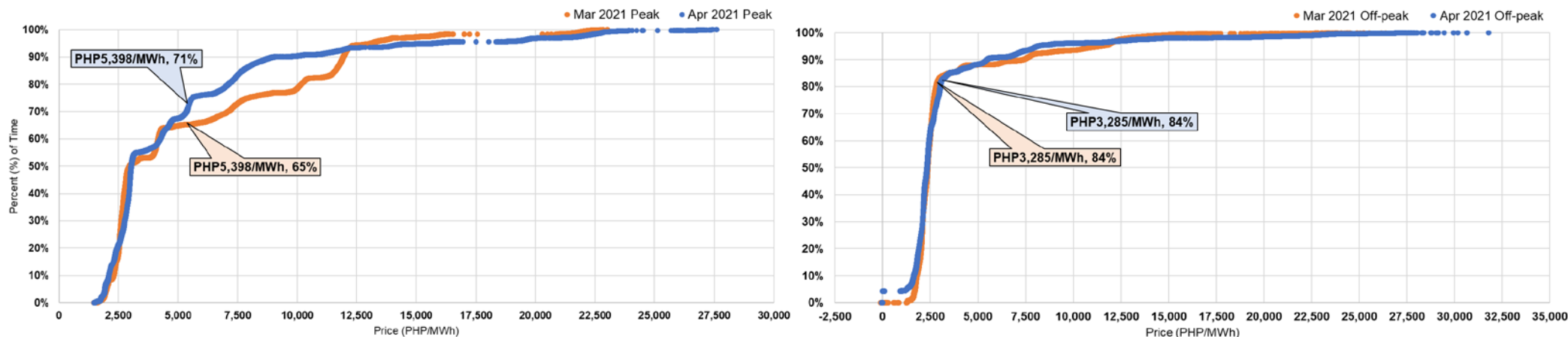


- Monthly load weighted average price (LWAP) slid by 7.1 percent from March to April 2021
- Monthly average supply margin narrowed by 5.6 percent
- Prices this month were noted to be one of the highest prices since the start of the community quarantine because of persistent high outages and high demand this month
- The highest monthly average supply margin in the previous 5 years resulted during the period of strictest implementation of community quarantine in April 2020 last year
- Average supply margin and price for April were similar to the 2017 billing year



- The highest level of supply margin for the April billing month reached 3,860 MW on 02 April 2021 (Friday, Holiday – Good Friday) at 0700H and, its lowest, 118 MW on 15 April 2021 (Thursday) at 2200H.
- Hourly resolution of LWAP saw the highest level at PHP26,982/MWh on 29 March 2021 at 2200H due to one of the lowest levels of supply margin at 133.04 MW.
- Generation mix from oil-based plants rose to 6 percent over the course of the six (6) price spikes and three (3) interesting pricing events [highlighted periods in graph] from 0.7 percent average this month.

NODAL PRICE DURATION CURVE



- Nodal prices without pricing errors during peak hours averaged at PHP5,398/MWh and PHP3,285/MWh during off-peak hours in April
- Most of the prices during peak hours this month were seen below the peak hours average at around 71 percent of the time, higher than last month's 65 percent with the same price reference, which denotes decrease in prices
- Both March and April off-peak price duration curves show similarity wherein off-peak prices were below the average at around 84 percent of the time

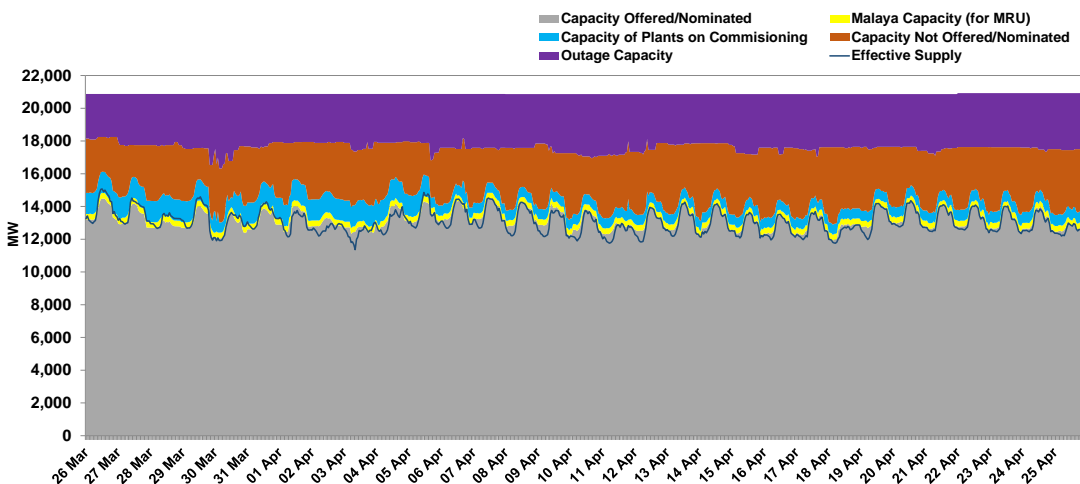
GENERATOR TRADING BEHAVIOR

Plant Type	Event 1	Event 2	Event 3
	% Offer Price Inc/Dec	% Offer Price Inc/Dec	% Offer Price Inc/Dec
Battery	No Change	No Change	No Change
Coal	11%	12%	14%
Geothermal	5%	-7%	-7%
Hydro	8%	-4%	7%
Natural Gas	431%	-587%	-644%
Oil	4%	3%	3%

Event	Hour Type	Generator Unit	Price Setter (Y/N)	% Offer Price Inc/Dec	Bid Splitting Behavior (Y/N)
Event 1	Off-peak	Oil A U1	Y	0.04%	N
		Oil A U2	Y	0.6%	N
		Oil A U4	Y	0.7%	N
		Oil A U5	Y	-0.004%	N
Event 2	Peak	Oil A U1	Y	-2%	N
		Oil A U2	Y	-1%	N
		Oil A U3	Y	3%	N
Event 3	Peak	Hydro A U1	Y	973%	N

- The upper price threshold for the hot dry season was breached on 1 off-peak and 2 peak intervals
- All the interesting pricing events occurred during a thin supply margin of below 700 MW
- A total of 1 hydro and 5 oil-based generator units set the price wherein 2 oil-based units recurred in the second interesting pricing event
- All units were observed to have minimal changes in offer price pattern during the subject intervals except for the hydro generating unit
- No generating unit exhibited bid splitting behavior in all interesting pricing events
- The deration of some natural gas plants resulted to a change in offer pattern behavior

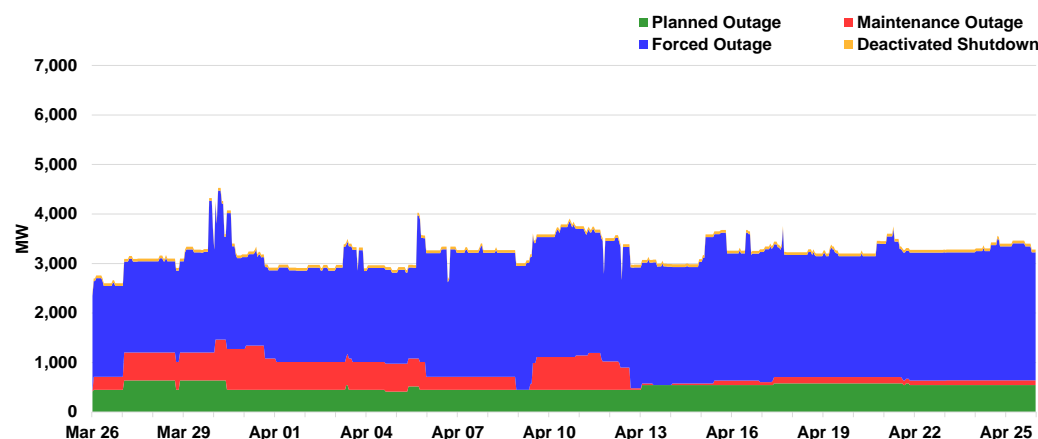
CAPACITY PROFILE



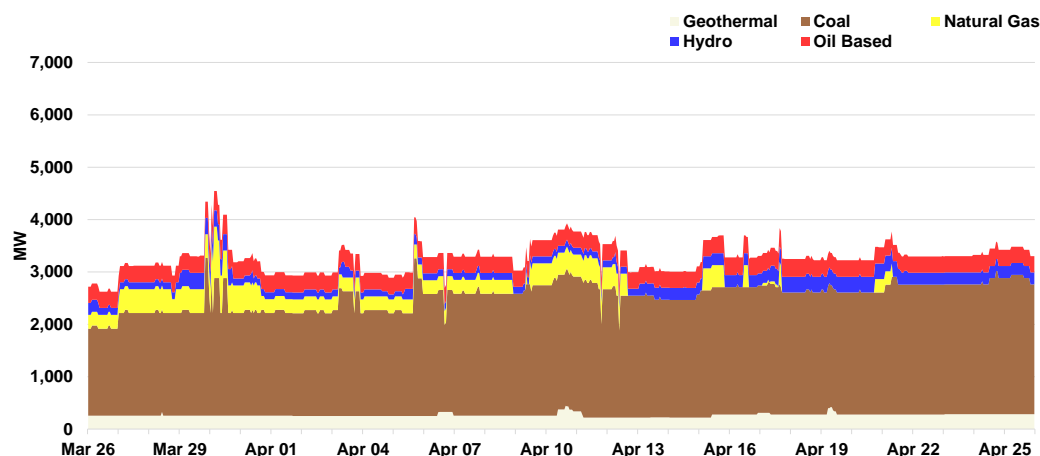
- A 52.6 MW uptick was recorded in the WESM registered capacity which stood at 20,923.87 at the end of the month
 - Increase in maximum capacity of Central Negros Power Reliability, Inc. oil-based plant from 25.9 MW to 26.9 MW
 - New registration of 55-MW GIGASOL3, Inc. solar plant
 - Decline in maximum capacity of Sulu Electric Power and Light (Phils.), Inc. solar plant from 45 MW to 41.6 MW
- Available capacity constituted an average of 14,343 MW or 69 percent of the total registered capacity
- Capacity not offered comprised an average of 3,258 MW or 16 percent as higher levels this month came from natural gas (deration due to SPEX Malampaya supply restriction) and hydro plants (low water supply during dry season)
- Outage capacity accounted for an average 3,276 MW or 16 percent, still at a high average compared to previous months in 2020
- Since 22 March 2021, SPEX Malampaya gas supply restriction resulted to the deration of Ilijan NGPP (on-going as of 25 April) and San Gabriel NGPP (until 19 April)

OUTAGE CAPACITY BY OUTAGE CATEGORY

- Around 76 percent of the time, hourly outage capacity for the month remained high at above 3,000 MW
- Outage capacity average remained high at 3,276 MW despite a 2.4 percent improvement from last month's 3,355 MW
- Forced outages still dominated the outage mix with an average of 2,349 MW or 72 percent of the total
- Maintenance outages closed the month with a low level at 97 MW
- Planned outages recorded consistent outage levels throughout the month at 514 MW on the average
- The hourly outage reached the highest of 4,547 MW on 30 March at 0400H-0600H
- High level of outage capacity above 3,000 MW was observed throughout the month which opened at 2,720 MW and closed at a higher level at 3,302 MW

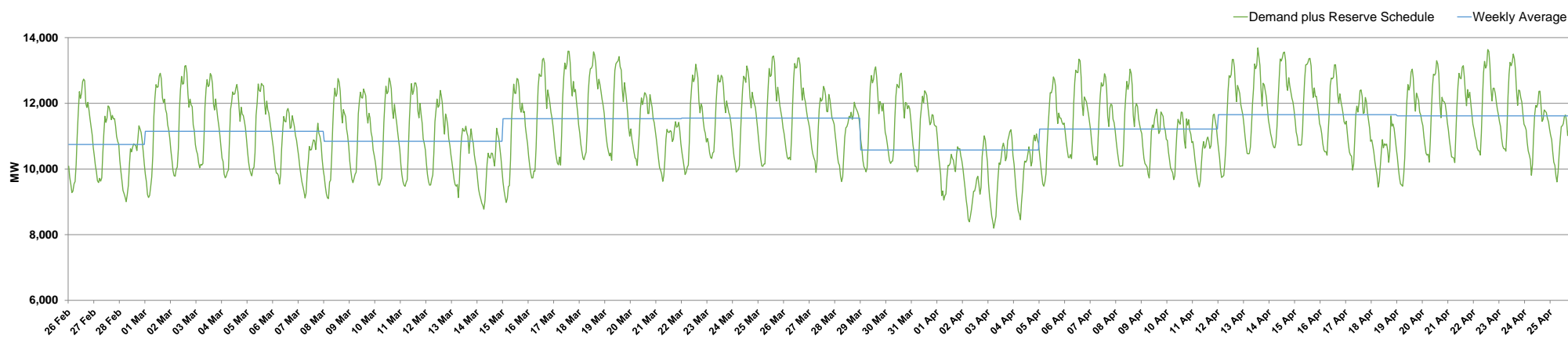


OUTAGE CAPACITY BY PLANT TYPE



- Coal plants significantly contributed to the level of planned and forced outages while natural gas plants dominated the level of maintenance outages. For deactivated shutdown, geothermal plants remained to be the only plant type accounted
- Aside from coal plants, natural gas plants also posted high level of outage on the onset of the month, reaching as high as 981 MW on 30 March at 0300H-0600H but later ended with no outage

SYSTEM DEMAND

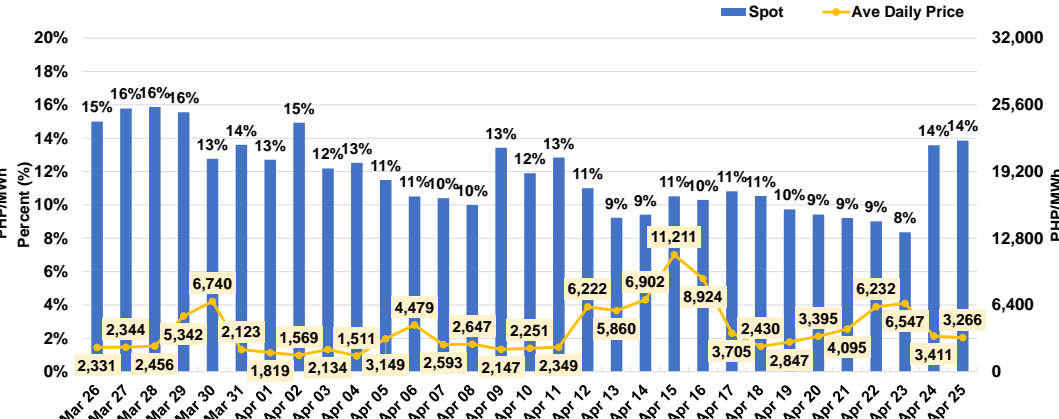
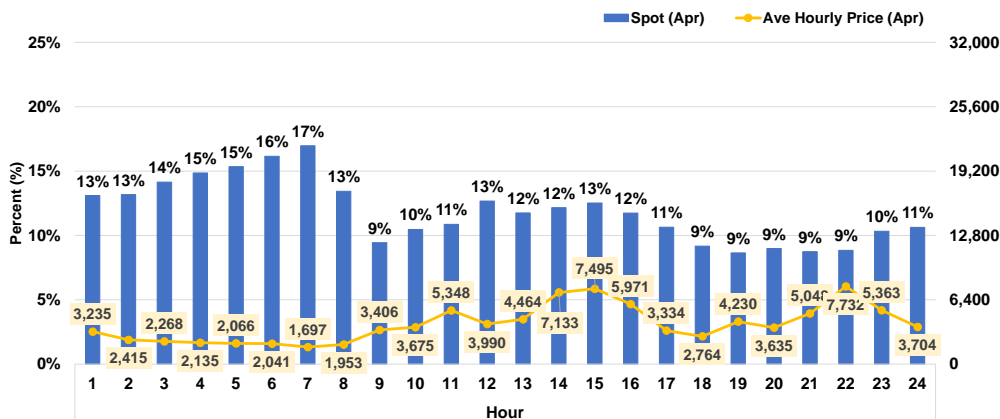


- Monthly system demand plus reserve schedule grew to an average of 11,284 MW, a 0.8 percent rise from last month's average of 11,191 MW
- Demand dipped on Week 13 (29 March to 04 April) with the observance of the Holy Week, and reinstatement of the ECQ which went on through Week 14 (05 to 11 April)
- System demand plus reserve schedule peaked at 13,687 MW on 13 April, 1400H (Tuesday)
- System demand peaked at 12,414 MW on 14 April, 1400H (Wednesday)
- On a yearly comparison, the demand plus reserve schedule surged by 21.9 percent from 9,259 MW in 2020 to 11,284 in 2021. The low demand experienced in April 2020 was the result of the strictest implementation of community quarantine as response to the Covid-19 pandemic

GENERATOR SPOT MARKET EXPOSURE

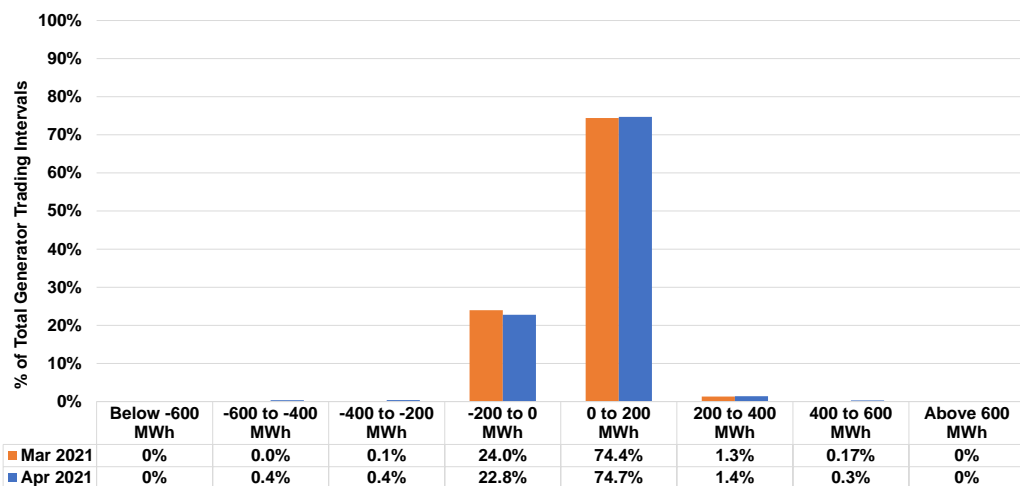
HOURLY

DAILY



- Total spot quantities of generator participants in April stood at 11.7 percent of the total metered quantities, a drop from last month's 14.7 percent spot exposure
- Spot exposure in off-peak hours averaged at 12.9 percent, from previous month's 15.9 percent, while it was 10.7 percent, from previous month's 13.5 percent, during peak hours
- Lower spot shares were evident during the latter days of the month where the market resulted to generally higher prices

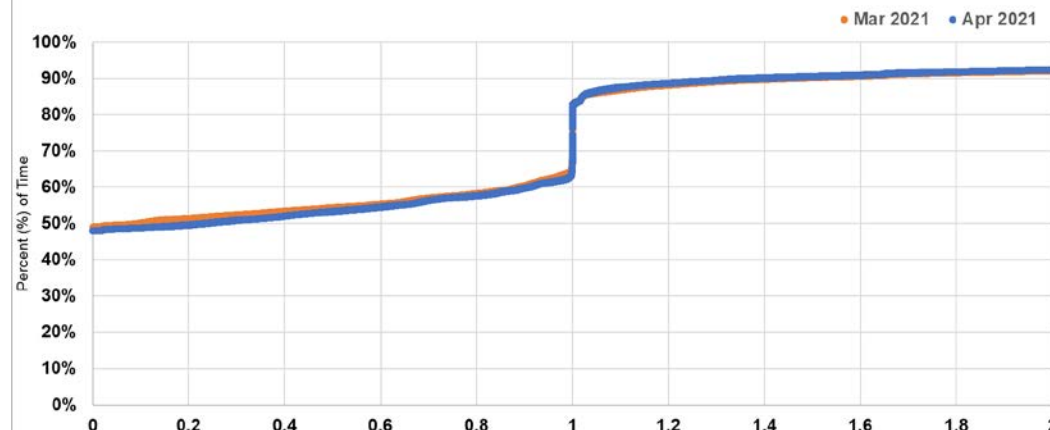
FREQUENCY DISTRIBUTION



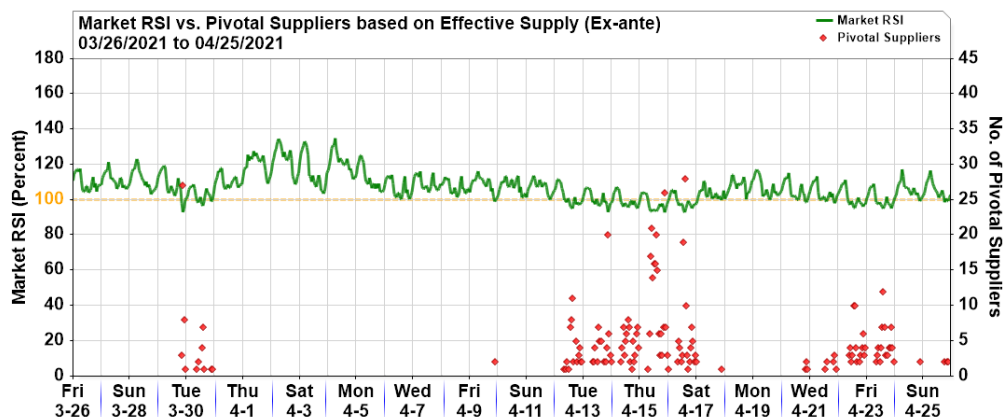
- Generator spot quantities for March and April 2021 billing months were much more concentrated within the -200 MWh to 200 MWh range
- About 76.4 percent of the total generator spot transactions in March, a slight uptick from March, was on the account of energy being sold in the market (positive MWh quantity)

- The resulting BCQ to MQ ratio of 0 demonstrates that the entire capacity of generators was being fully sold in the market at almost half of the time or 48 percent
- Meanwhile, roughly 21 percent of the total generator trading intervals had a BCQ to MQ ratio of 1 which resulted from all metered quantities being allocated to serve bilateral contract obligations
- About 4 percent were accounted for by generators which fully bought energy in the market to serve their bilateral contract obligations because of no generated MQ

BCQ-MQ RATIO

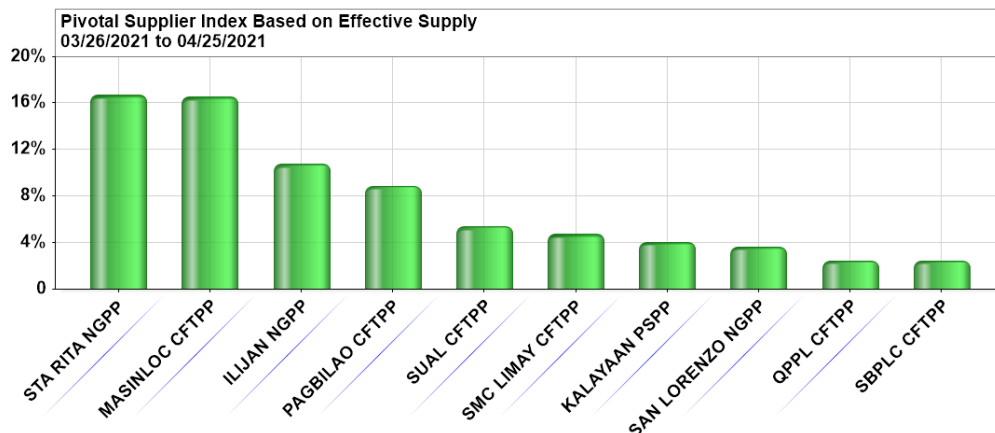


MARKET RSI



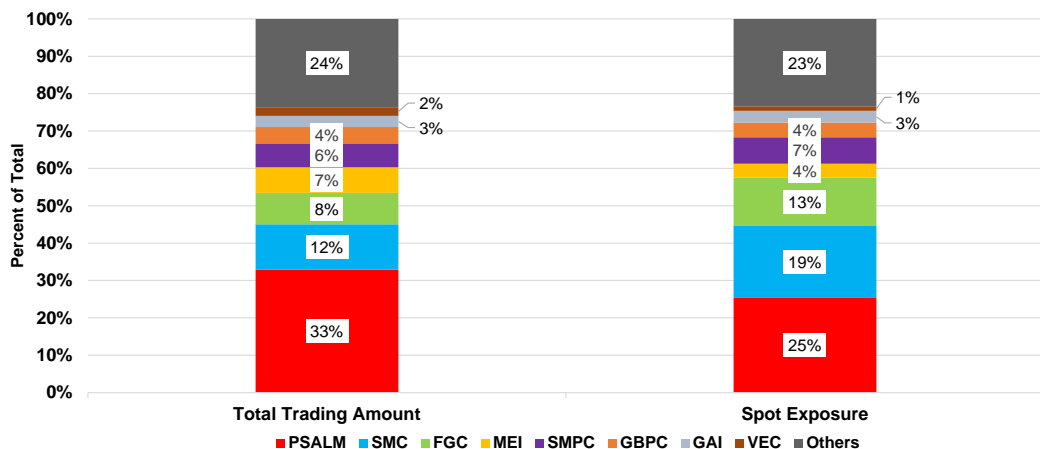
- Out of the 744 trading intervals in April 2021 billing month, 133 intervals had a Residual Supply Index (RSI) below the 100 percent mark which were evident during high prices in the market
- The average market prices for intervals with RSI below 100 percent was PHP9,863/MWh while those with RSI above 100 was PHP2,634/MWh

PIVOTAL PLANTS



- A total of 31 power plants were pivotal during the period with 24 coming from Luzon and 7 from Visayas
- Limay CCGT, Bauang DPP, and San Roque HEP were concurrent pivotal suppliers and price setters above PHP10,000/MWh for less than 1 percent of the time

TTA AND SPOT SHARE



- Power Sector Assets and Liabilities and Management (PSALM) maintained its top spot this month, recording the highest TTA share of sellers in the market with approximately 33 percent
- San Miguel Corporation (SMC) placed second, with 12 percent of TTA share, from third last month
- First Gen Corporation (FGC) maintained its rank at third with an 8 percent TTA share.
- The top 3 highest TTA shares also had incurred the highest spot shares

Annex A. List of Major Plant Outages

Region	Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Days)	Outage Type	Remarks	Date Commissioned/ Commercial Operation
LUZON	GEO	Makban 6	55	04/11/2013 22:44			Deactivated Shutdown	Conducted gas compressor test	Apr 1979
LUZON	OIL	Malaya 1	300	05/03/2019 18:21			Forced Outage	Motorization of unit generator caused by the non-opening of phase B of PCB 8-	Aug 1975
VISAYAS	COAL	TPC Sangi 1	60	12/17/2019 6:05			Forced Outage	Generator differential trip	Dec 2013
VISAYAS	GEO	Upper Mahiao 3	32	07/22/2020 17:01			Maintenance Outage	Trip with Loss of Excitation. Economic Shutdown	Jul 1997
LUZON	COAL	Sual 2	647	09/16/2020 14:45			Forced Outage	Tripped due to high turbine vibration	Oct 1999
LUZON	COAL	Calaca 2	300	12/03/2020 9:01			Forced Outage	Generator stator earth fault	Sep 1984
LUZON	COAL	GN Power 1	316	01/08/2021 18:26			Forced Outage	Boiler tube leak.	May 2013
VISAYAS	OIL	TPC Carmen 4	10	02/12/2021 9:47			Forced Outage	TRIPPED DUE TO LOW ENGINE LO PRESSURE	Mar 1979
VISAYAS	COAL	CEDC 3	82	02/21/2021 0:29	04/09/2021 11:33	47.46	Forced Outage	TO CONDUCT REPAIR OF COAL FEEDER	Jan 2011
VISAYAS	COAL	CEDC 1	82	02/24/2021 0:52			Planned Outage	UNIT SHUTDOWN TO FACILITATE ANUAL PMS UNTIL 17 MARCH 2021	Apr 2010
LUZON	HYD	Bakun 1	37	03/06/2021 6:08			Maintenance Outage	Total Plant shutdown due to facilitate APM and other protection related activities	Feb 2001
VISAYAS	GEO	Nasulo	48.3	03/13/2021 15:53			Forced Outage	Auto-tripped. affected by tripping of Main Transformer due to Tap Changer trouble	Apr 2014
LUZON	GEO	Makban 1	63.2	03/18/2021 21:14			Forced Outage	Steam supply diverted to Unit 2	Apr 1979
LUZON	COAL	GN Power 2	316	03/20/2021 0:58			Planned Outage	Maintenance Outage	May 2013
LUZON	HYD	Magat 3	97	03/20/2021 7:01			Planned Outage	Maintenance Outage	Oct 1983
LUZON	HYD	Ambuklao 1	35	03/20/2021 7:57	04/04/2021 15:27	15.31	Planned Outage	Maintenance outage.	Dec 1956
VISAYAS	GEO	Mahanagdong B1	5	03/25/2021 0:27	04/01/2021 16:11	7.66	Forced Outage	Emergency cut out from the system	Jul 1997
LUZON	HYD	Magat 4	97	03/25/2021 10:03	03/26/2021 8:51	0.95	Forced Outage	Emergency shutdown due to oil leak at servo motor	Oct 1983
VISAYAS	GEO	Upper Mahiao 1	32	03/26/2021 0:05	04/10/2021 14:50	15.61	Forced Outage	Under investigation.	Jul 1997
LUZON	NATG	Sta. Rita 4	264	03/26/2021 0:46	04/08/2021 21:21	13.86	Maintenance Outage	Unplanned maintenance outage to facilitate rectification of HRSG expansion bellow	Oct 2001
LUZON	NATG	Ilijan A1	190	03/27/2021 0:26	03/28/2021 17:27	1.71	Planned Outage	Maintenance Outage until 29 March 2021	Jun 2002
LUZON	COAL	Calaca 1	300	03/27/2021 0:40	04/05/2021 22:47	9.92	Maintenance Outage	Maintenance Outage until 06 April 2021. For inspection and repair in coal and oil burner assemblies	Sep 1984
LUZON	HYD	Ambuklao 2	35	03/27/2021 10:20	03/27/2021 11:27	0.05	Forced Outage	Tripped due to broken shear pin	Dec 1956
VISAYAS	OIL	Bohol 1	4	03/27/2021 11:14	03/29/2021 13:12	2.08	Forced Outage	Problem in circulation of raw water	Sep 1978
VISAYAS	OIL	Bohol 2	4	03/27/2021 11:37	03/29/2021 13:15	2.07	Forced Outage	Jacket cooling water temp. high 2nd stage	Sep 1978
VISAYAS	GEO	Malitbog 2	72	03/28/2021 9:06	03/28/2021 10:50	0.07	Forced Outage	Under assessment	Jul 1997
LUZON	HYD	Ambuklao 3	35	03/28/2021 10:52	03/28/2021 11:13	0.01	Forced Outage	Tripped due to high turbine bearing vibration	Dec 1956
LUZON	NATG	Ilijan A2	190	03/28/2021 20:08	03/30/2021 12:08	1.67	Planned Outage	Planned Outage	Jun 2002
LUZON	HYD	Kalayaan 4	180	03/29/2021 0:01	03/30/2021 16:38	1.69	Forced Outage	Extended Maintenance Outage	May 2004
VISAYAS	OIL	TPVI 2	6.7	03/29/2021 15:48	03/29/2021 20:12	0.18	Forced Outage	AUTO TRIPPED	Aug 1977
VISAYAS	OIL	TPVI 4	6.8	03/29/2021 15:52	03/29/2021 20:21	0.19	Forced Outage	AUTO TRIPPED	Aug 1977
VISAYAS	OIL	TPVI 1	6.7	03/29/2021 15:54	03/29/2021 20:51	0.21	Forced Outage	AUTO TRIPPED	Aug 1977
LUZON	COAL	Pagbilao 1	382	03/29/2021 19:23	03/29/2021 23:47	0.18	Forced Outage	Turbine trip indication.	Mar 1996
LUZON	COAL	GNP Dinginlin 1	668	03/29/2021 19:31	03/30/2021 13:55	0.77	Forced Outage	On Commissioning Test	N/A
LUZON	OIL	Limay 5	60	03/29/2021 21:05	03/30/2021 16:15	0.80	Forced Outage	Main fuel oil pump problem.	Dec 1994
LUZON	NATG	San Lorenzo 2	261.8	03/30/2021 0:53	03/31/2021 16:06	1.63	Maintenance Outage	none	Sep 2002
LUZON	NATG	San Lorenzo 1	264.8	03/30/2021 0:56	03/30/2021 5:45	0.20	Forced Outage	Tripped during change-over from fuel oil to natural gas.	Sep 2002
VISAYAS	OIL	TPVI 4	6.8	03/30/2021 21:54	04/05/2021 21:30	5.98	Forced Outage	GENERATOR BREAKER CONTROL FAILURE	Aug 1977
VISAYAS	OIL	TPVI 6	6.8	03/30/2021 21:54	03/31/2021 18:09	0.84	Forced Outage	GENERATOR BREAKER CONTROL FAILURE	Aug 1977
VISAYAS	OIL	TPVI 1	6.7	03/30/2021 21:57	04/03/2021 18:16	3.85	Forced Outage	GENERATOR BREAKER CONTROL FAILURE	Aug 1977
LUZON	HYD	Magat 2	97	03/31/2021 6:07	03/31/2021 9:36	0.15	Forced Outage	Busted diode on excitation system.	Aug 1983
LUZON	COAL	Pagbilao 3	420	04/03/2021 5:33	04/03/2021 21:06	0.65	Forced Outage	Replacement of Main Turbine IGV LH Servo Valve.	Jul 2017
LUZON	HYD	Magat 4	97	04/03/2021 7:06	04/03/2021 9:53	0.12	Planned Outage	Planned maintenance outage	Oct 1983
LUZON	HYD	Ambuklao 2	35	04/03/2021 8:03	04/03/2021 12:23	0.18	Maintenance Outage	To support APM activities of Unit 1 (draft tube slab removal).	Dec 1956
LUZON	HYD	Ambuklao 3	35	04/03/2021 8:03	04/03/2021 12:23	0.18	Maintenance Outage	To support APM activities of Unit 1(draft tube slab removal).	Dec 1956
LUZON	HYD	Magat 4	97	04/04/2021 13:34	04/04/2021 14:18	0.03	Forced Outage	Affected by Magat 3 testing.	Oct 1983
LUZON	HYD	Ambuklao 1	35	04/05/2021 8:12	04/05/2021 17:44	0.40	Planned Outage	Scheduled outage (GOP).	Dec 1956
LUZON	HYD	Ambuklao 2	35	04/05/2021 8:12	04/21/2021 19:49	16.48	Planned Outage	Scheduled outage (GOP) until 18 April 2021.	Dec 1956
LUZON	HYD	Ambuklao 3	35	04/05/2021 8:12	04/05/2021 17:44	0.40	Planned Outage	Scheduled outage (GOP).	Dec 1956
LUZON	COAL	GNP Dinginlin 1	668	04/05/2021 14:55			Forced Outage	Tripped out at 600MW. Commissioning Test Frequency-58.78hz	N/A
LUZON	COAL	Pagbilao 1	382	04/05/2021 14:55	04/05/2021 18:47	0.16	Forced Outage	Initial findings - tripped by under-frequency relay.	Mar 1996
VISAYAS	GEO	Malitbog 2	72	04/06/2021 10:31	04/06/2021 15:35	0.21	Forced Outage	Condenser high level.	Jul 1997
VISAYAS	GEO	Mahanagdong B1	5	04/06/2021 11:46	04/06/2021 20:16	0.35	Forced Outage	Under assessment.	Jul 1997
VISAYAS	GEO	Malitbog 2	72	04/06/2021 15:36	04/06/2021 21:48	0.26	Forced Outage	Condenser high level.	Jul 1997
VISAYAS	GEO	Mahanagdong B1	5	04/06/2021 20:17	04/10/2021 14:50	3.77	Forced Outage	Under assessment.	Jul 1997
VISAYAS	GEO	Malitbog 2	72	04/06/2021 21:49	04/06/2021 22:54	0.05	Forced Outage	Under assessment.	Jul 1997
VISAYAS	COAL	PALM 1	135	04/07/2021 17:15	04/07/2021 19:09	0.08	Forced Outage	Due to internal trouble (Master fuel trip by primary air fan)	Mar 2016
LUZON	COAL	SLTEC 2	122.9	04/09/2021 8:32	04/12/2021 6:52	2.93	Maintenance Outage	In preparation for the pre-arranged shutdown of Calaca-Salong 230kV line on 10 April	Aug 2015
LUZON	NATG	San Gabriel	420	04/09/2021 10:58	04/12/2021 17:05	3.25	Maintenance Outage	Malampaya Gas Restriction.	Mar 2016
LUZON	COAL	SLTEC 1	121	04/09/2021 13:01	04/11/2021 16:20	2.14	Maintenance Outage	In preparation for the pre-arranged shutdown of Calaca-Salong 230kV line on 10 April	Sep 2014
VISAYAS	COAL	CEDC 3	82	04/10/2021 4:05	04/13/2021 12:11	3.34	Forced Outage	UNIT TRIPPED. POSSIBLE TUBE LEAK	Jan 2011
LUZON	GEO	Bacman 1	60	04/10/2021 8:22	04/11/2021 4:25	0.84	Forced Outage	Undervoltage indication during Naga T03 3PH fault tripping.	Sep 1993
LUZON	GEO	Bacman 2	60	04/10/2021 8:22	04/11/2021 3:11	0.78	Forced Outage	Undervoltage indication during Naga T03 3PH fault tripping.	Sep 1993
VISAYAS	GEO	Mahanagdong A1	5	04/10/2021 14:50	04/10/2021 15:21	0.02	Forced Outage	Under assessment	Jul 1997
VISAYAS	GEO	Upper Mahiao 2	32	04/10/2021 14:50	04/10/2021 17:59	0.13	Forced Outage	Under assessment	Jul 1997
VISAYAS	GEO	Upper Mahiao 4	32	04/10/2021 14:50	04/10/2021 17:02	0.09	Forced Outage	Under assessment	Jul 1997
VISAYAS	GEO	Mahanagdong B1	5	04/10/2021 14:51	04/10/2021 15:19	0.02	Forced Outage	Under assessment	Jul 1997
VISAYAS	GEO	Upper Mahiao 1	32	04/10/2021 14:51	04/10/2021 20:55	0.25	Forced Outage	Under assessment	Jul 1997
LUZON	NATG	Avion 1	50.3	04/11/2021 6:04	04/11/2021 17:45	0.49	Maintenance Outage	Planned maintenance as per GOP	Aug 2015
LUZON	HYD	Magat 1	97	04/12/2021 6:04	04/12/2021 7:35	0.06	Maintenance Outage	Customer(SNAP-M) request for shutdown to facilitate the repair of pipe leak(governor unloading pipe to accumulator).	Aug 1983
VISAYAS	OIL	TPVI 6	6.8	04/12/2021 13:26	04/13/2021 21:34	1.34	Forced Outage	UNIT TRIPPED. UNDER ASSESSMENT	Aug 1977
LUZON	HYD	Magat 4	97	04/13/2021 0:02			Planned Outage	Maintenance outage under GOP.	Oct 1983
VISAYAS	GEO	Mahanagdong A1	5	04/13/2021 9:20	04/14/2021 0:26	0.63	Forced Outage	Emergency replacement of scrubber dupleine passing isolation valve	Jul 1997
LUZON	HYD	Maris 2	4.3	04/14/2021 7:05	04/14/2021 16:42	0.40	Maintenance Outage	Trash rack cleaning	Oct 2017
LUZON	HYD	Maris 1	4.3	04/14/2021 7:07	04/14/2021 16:36	0.40	Maintenance Outage	Trash rack cleaning	Oct 2017
LUZON	HYD	Calliraya 2	14	04/14/2021 8:55	04/14/2021 13:08	0.18	Forced Outage	Bypass Valve problem (turbine side).	Oct 2002
VISAYAS	COAL	Kepco Salcon 2	103	04/14/2021 21:29			Forced Outage	SUSPECTED BOILER TUBE LEAK	Mar 2011
VISAYAS	COAL	CEDC 2	82	04/15/2021 0:29			Forced Outage	PMS	Jun 2010
LUZON	NATG	San Gabriel	420	04/15/2021 1:44	04/15/2021 20:07	0.77	Forced Outage	Actuation of circulating water system protection.	Mar 2016
LUZON	GEO	Tiwi 1	60	04/15/2021 9:32			Maintenance Outage	Supply steam to unit 2.(RECLASSIFIED FROM FORCE. OMC OUTAGE)	Jan 1979
VISAYAS	OIL	TPVI 6	6.8	04/15/2021 12:38	04/15/2021 14:17	0.07	Forced Outage	GCB AUTO OPEN	Aug 1977
LUZON	OIL	SLPGC 4	25	04/15/2021 13:07	04/18/2021 17:01	3.16	Forced Outage	Emergency shutdown at 25MW load. Turbine Oil Leak.	Mar 2017
VISAYAS	OIL	CENPRI 3	4.3	04/15/2021 13:56	04/16/2021 13:03	0.96	Forced Outage	Offline due to excessive gas leak.	Mar 2016
LUZON	NATG	San Gabriel	420	04/16/2021 10:19	04/16/2021 15:04	0.20	Forced Outage	Tripped due to actuation of condenser protection.	Mar 2016
VISAYAS	OIL	TPVI 4	6.8	04/16/2021 15:41	04/16/2021 17:41	0.08	Forced Outage	FUEL LEAK	Aug 1977
VISAYAS	GEO	Upper Mahiao 1	32	04/16/2021 21:26	04/17/2021 7:57	0.44	Forced Outage	Emergency hotspot correction in generator breaker	Jul 1997
LUZON	NATG	Avion 1	50.3	04/16/2021 22:04	04/17/2021 13:44	0.65	Forced Outage	Tripped at 40MW load. As RR non firm. Solenoid Valve trouble at the turbine side.	Aug 2015
LUZON	HYD	Ambuklao 3	35	04/16/2021 22:14	04/16/2021 23:02	0.03	Forced Outage	Tripped due to broken shear pin. As CR non firm	Dec 1956
VISAYAS	OIL	TPVI 3	6.8	04/16/2021 23:41	04/20/2021 21:19	3.90	Forced Outage	EMERGENCY CUT-OUT FROM THE SYSTEM DUE TO HEAVY EXHAUST GAS LEAK AT	Aug 1977

Region	Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Days)	Outage Type	Remarks	Date Commissioned/ Commercial Operation
LUZON	HYD	Ambuklao 1	35	04/17/2021 8:07	04/21/2021 14:49	4.28	Maintenance Outage	To support APM on Ambuklao U2 and U3	Dec 1956
LUZON	HYD	Ambuklao 3	35	04/17/2021 8:07			Planned Outage	APM	Dec 1956
VISAYAS	OIL	CENPRI 5	6.7	04/17/2021 14:36	04/17/2021 18:44	0.17	Forced Outage	Isolated due to tripping of 69kV Bacolod-San Enrique sub TL	May 2018
LUZON	NATG	San Gabriel	420	04/17/2021 15:38	04/17/2021 17:01	0.06	Forced Outage	To facilitate its gas valve line up	Mar 2016
LUZON	GEO	Bacman 1	60	04/19/2021 4:53	04/19/2021 8:21	0.14	Forced Outage	Tripped at 58MW. Cause of tripping still under investigation.	Sep 1993
LUZON	GEO	Bacman 2	60	04/19/2021 4:53	04/19/2021 11:44	0.29	Forced Outage	Tripped at 58MW. Cause of tripping still under investigation.	Sep 1993
LUZON	GEO	Bacman 3	20	04/19/2021 6:05	04/19/2021 9:40	0.15	Forced Outage	Tripped at 58MW load.	Sep 1993
VISAYAS	GEO	PGPP2 Unit 1	19.74	04/19/2021 12:07	04/19/2021 13:57	0.08	Forced Outage	Auto-tripped simultaneously with Amlan-Nasuji 138kV Line 1.	Aug 1983
VISAYAS	GEO	PGPP2 Unit 3	19.56	04/19/2021 12:07	04/19/2021 14:31	0.10	Forced Outage	Auto-tripped simultaneously with Amlan-Nasuji 138kV Line 1.	Aug 1983
LUZON	NATG	Sta. Rita 2	255.7	04/20/2021 17:48	04/21/2021 7:41	0.58	Forced Outage	Emergency shutdown to rectify NBN Valves for Fuel oil	Jun 2000
LUZON	COAL	SLPGC 2	150	04/21/2021 1:09			Forced Outage	Boiler tube leak.	Jan 2015
LUZON	COAL	SMC 3	150	04/21/2021 6:10	04/21/2021 11:31	0.22	Forced Outage	Tripped with 120MW load.	Nov 2017
VISAYAS	OIL	TPVI 5	6.8	04/22/2021 21:14	04/22/2021 23:38	0.10	Forced Outage	RTD	Aug 1977
VISAYAS	GEO	PGPP1 Unit 1	37.5	04/23/2021 0:05			Maintenance Outage	Offline due to PMS.	Aug 1983
VISAYAS	GEO	Mahanagdong A1	5	04/23/2021 0:19			Maintenance Outage	PMS.	Jul 1997
LUZON	OIL	SLPGC 4	25	04/23/2021 23:01	04/24/2021 17:33	0.77	Forced Outage	Turbine Lube oil manifold leak.	Mar 2017
LUZON	COAL	SLTEC 1	121	04/24/2021 11:16	04/25/2021 20:16	1.38	Forced Outage	Emergency shutdown due to primary air fan problem.	Sep 2014
VISAYAS	COAL	PALM 1	135	04/24/2021 16:18	04/24/2021 18:40	0.10	Forced Outage	Internal Trouble	Mar 2016