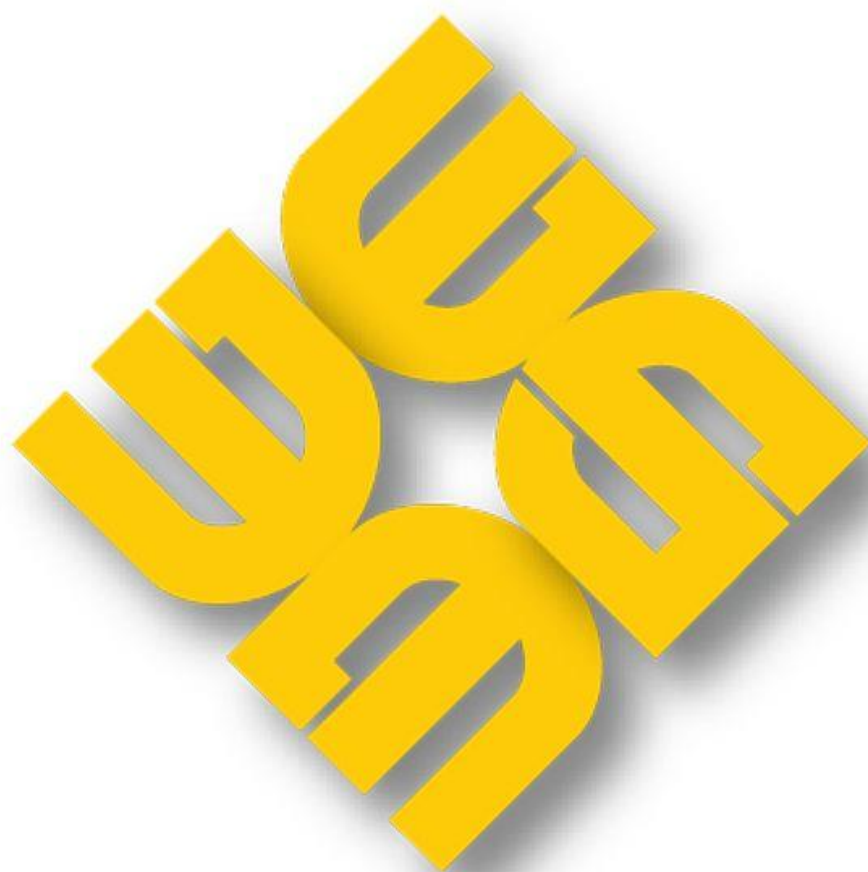


MAG-MMAR-2019-12

MONTHLY MARKET ASSESSMENT REPORT

For the Billing Period 26 November to 25 December 2019



**PHILIPPINE
ELECTRICITY
MARKET
CORPORATION**

**MARKET ASSESSMENT GROUP
(MAG)**

Monthly Market Assessment Report for December 2019 Billing Month

1. Summary

The December billing month was observed to have a similar supply margin with that of the last billing month ranging from 44 MW to 5,382 MW. While both are in a downtrend, the level of effective supply has decreased more than the demand due to the outage of several major plants. The highest outage capacity was recorded in December for the whole year of 2019. Given this demand and supply condition, the Luzon and Visayas grids experienced a number of yellow and red alerts as reserve capacities continued to deplete this month. Also, SO-initiated market interventions were imposed in the Visayas region from intervals 0100H to 0900H on 25 December due to the tripping of Tabango-Kananga lines.

From 1 to 6 December, the onslaught of Typhoon Tisoy (International Name: "Kammuri") brought several plants on outage in Luzon and Visayas reaching an outage capacity as high as 5,752 MW on 3 December. This was the highest recorded outage capacity in an interval since August 2014.

As a consequence of the foregoing events, the resulting market price increased by 16.1 percent from PhP5,114/MWh in November to PhP5,937/MWh this month.

2. Market Outcomes

2.1. Capacity Profile

An increase of 100.3 MW for this month from a total of 20,081.6 MW to 20,181.9 MW was recorded in the WESM registered capacity. Around 70 percent of the increase came from the newly-registered oil-based plants, 22 percent from biomass plants, and the remaining 8 percent from solar and hydro power plants. The following Luzon plants registered in the WESM: 6-MW Green Innovations for Tomorrow Corporation biomass plant, 4.4-MW Ecopark Energy of Valenzuela Corp. solar plant, 10.8-MW Cleangreen Energy Corporation biomass plant, and 5.4-MW VS Gripal Power Corporation biomass plant. Meanwhile, in Visayas, oil-based and hydro plants registered: 70-MW Isabel Ancillary Services Co. Ltd. oil-based plant, 1.2-MW Sta. Clara Power Corporation hydro plant, and 2.5-MW BOHECO I Sevilla Mini Hydro Corp. hydro plant. About 5 percent of the registered capacity or an average of 925 MW was undergoing plant testing and commissioning. 62 percent or 577 MW of which were conducting testing and commissioning for more than 2 months.

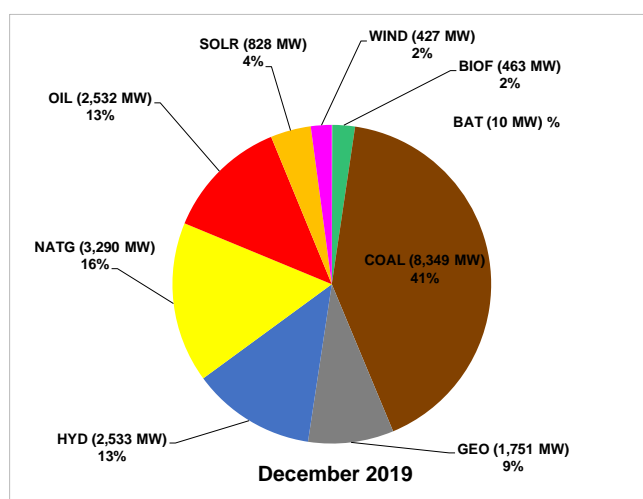


Figure 1. Registered Capacity Mix, December 2019

While noting the increase in the level of registered capacity, there was a substantial decline in the supply of electricity due to the build-up of outage capacity from an average of 3,071 MW in November to 3,979 MW in December. This resulted in the decline of the total offered capacity from last month's average of 12,982 MW to 12,367 MW.

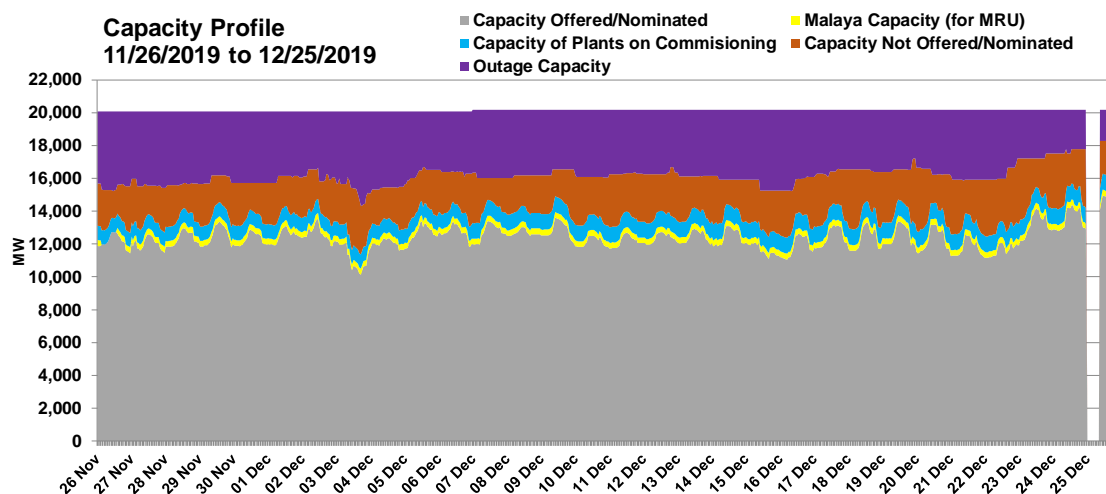


Figure 2. Capacity Profile

Table 1. Monthly Capacity Profile (Ex-ante)

	December 2019		November 2019	
	Average (in MW)	% of RegCap	Average (in MW)	% of RegCap
Outage Capacity	3,979	20%	3,071	15%
Capacity Not Offered/Nominated	2,523	13%	2,810	14%
Capacity of Plants on Commissioning	925	5%	845	4%
Malaya Capacity (for MRU)	350	2%	350	2%
Capacity Offered/Nominated	12,367	61%	12,982	65%
Registered Capacity (by the end of the billing month)	20,182		20,082	

2.2. Outage Capacity

About 20 percent of the total registered capacity or an average of 3,979 MW was on outage for the month of December. Half of the outages was classified as planned, averaging at 2,034 MW while 40 percent comprised of forced outages, averaging at 1,637 MW. Additionally, maintenance outages, averaging at 373 MW, accounted for only 9 percent and deactivated shutdown for the remaining 1 percent or an average of 55 MW.

Based on type of resource, 65 percent or an average of 2,560 MW was mainly attributable to coal plants namely: the maintenance outage of Mariveles CFTPP unit 1, the planned outages of Calaca CFTPP unit 2, KSPC CFTPP unit 1, and SLTEC CFTPP unit 2 which persisted since 17 October, 22 September, and 18 November, respectively, Masinloc CFTPP unit 2, Sual CFTPP unit 1, and Pagbilao CFTPP unit 3, and forced outages of Calaca CFTPP unit 1, TPC Sangi CFTPP unit 1, Sual CFTPP units 1 and 2, QPPL CFTPP, and SBPL CFTPP. It was also noted that the outage of coal plants increased by 25 percent this billing month.

From 1 to 6 December, the surge of Typhoon Tisoy affected a number of power lines, power plants, and other electrical components in the grid causing their outage. On top of the existing outage, the following plants went on forced outage following the landfall of the tropical cyclone on 2 to 3 December: a part or 312 MW of Makban GPP, a part or 173 MW of Tiwi GPP, 140-MW Bacman GPP, 28-MW Caliraya HEPP, 1200-MW Ilijan NGPP, 257.3-MW Sta Rita NGPP unit 1, and 455-MW SBPL CFTPP.

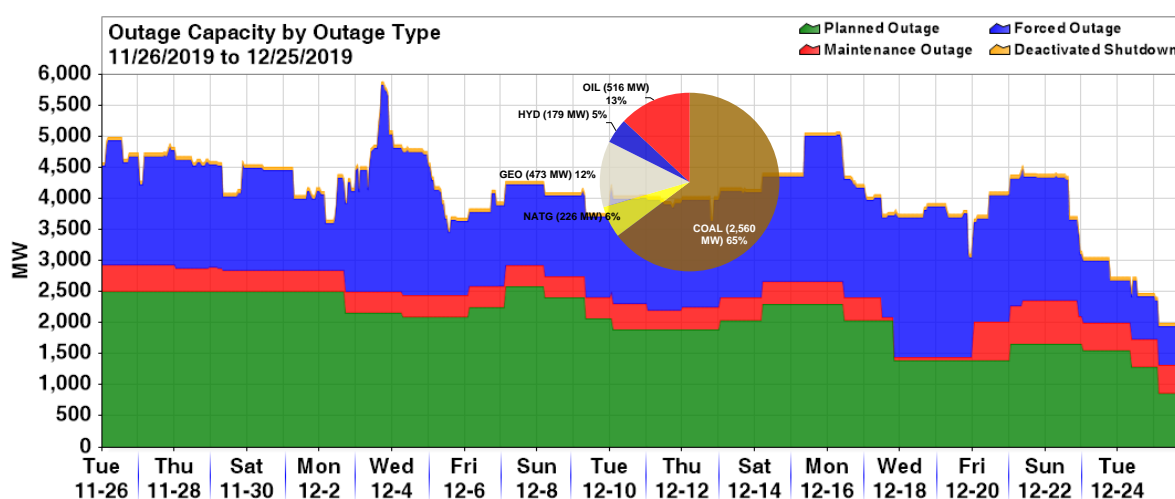


Figure 3. Outage Capacity by Outage Category

2.3. Supply and Demand

Average effective supply decreased by 4.4 percent from previous month's 13,087 MW to current month's 12,509 MW level with the outage of several

major power plants. Demand plus reserve schedule likewise decreased by 5.1 percent to an average of 10,690 MW from last month's 12,262 MW given the cooler temperatures recorded and observance of holidays in December. Driven by the consistent MW-decrease both in supply and demand coming from November, supply margin was almost the same as last month at an average of 1,818 MW from 1,825 MW.

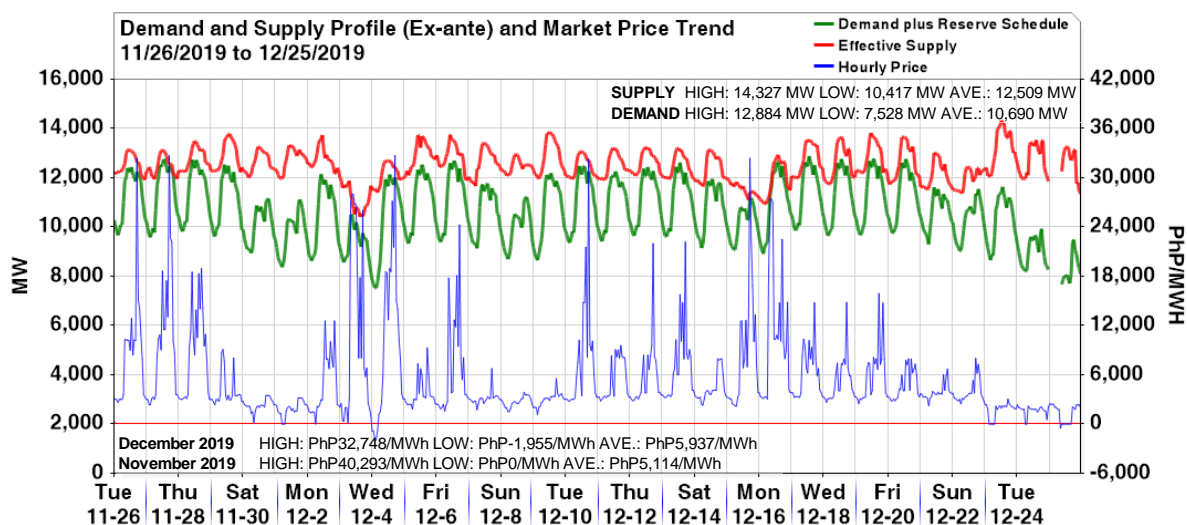


Figure 4. Demand and Supply Profile vs. Market Prices

2.4. Market Prices

Market prices climbed to an average of PhP5,937/MWh this month from previous month's PhP5,114/MWh following the tighter supply margin in the grid. Price spikes of above PhP10,000/MWh was observed to be more frequent this month following that minimal decrease in supply margin was recorded.

The resulting high prices manifested in several instances of price spikes caused by the high level of outage from large capacity generating plants. Noteworthy were the 5 intervals with prices above PhP32,000/MWh, the highest of which reached PhP32,748/MWh which was recorded on 27 November at 1800H. On the other hand, a small number of negative price events were likewise observed, reaching as low as PhP-1,955/MWh, due to the wide supply margin at a few intervals.

In addition, the observance of high outages which occurred in the November billing month persisted through the first few days of December billing month contributing to the increase in the average market price.

3. Structural Competition Indices

3.1. Pivotal Plants

As a result of the narrower supply margin, the market RSI remains below the 100-percent mark in 32 percent of the time in the December billing month indicating the frequent presence of pivotal suppliers. Most frequent pivotal suppliers during the billing month were Ilijan NGPP, Sta. Rita NGPP, and Pagbilao CFTPP.

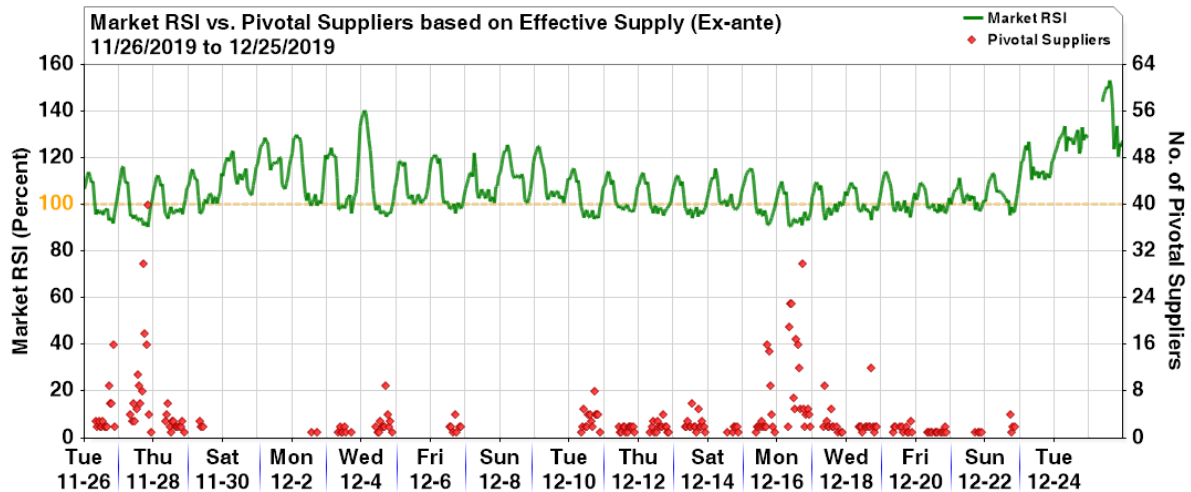


Figure 5. Market RSI vs. Pivotal Suppliers

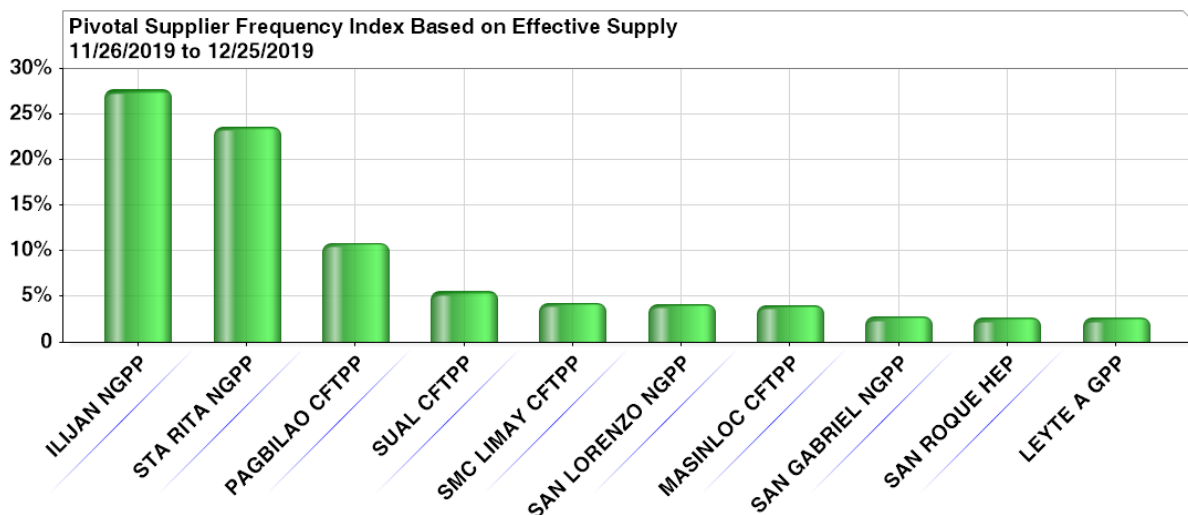


Figure 6. Top Pivotal Plants

3.2. Market Concentration

San Miguel Corporation (SMC), Aboitiz Power (AP), First Gen Corporation (FGC) and Power Sector Asset and Liabilities Management (PSALM) continued to dominate the market with their combined market share comprising of 68.5 percent of the total registered capacity in the WESM. SMC held the top spot at

24.0 percent followed by AP at 19.7 percent, FGC came in third at 14.3 percent and lastly, PSALM at 10.5 percent.

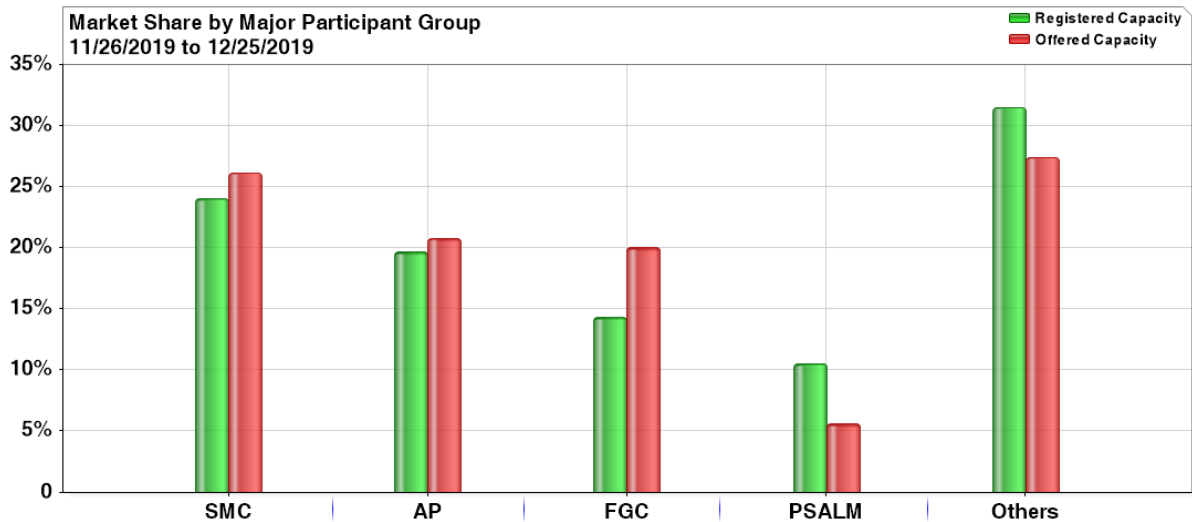


Figure 7. Market Share

The market share of SMC based on offered capacity was recorded at 26.2 percent. This was an increase from its previous 24.6 percent share. AP, on the other hand, recorded a decrease from 22.6 percent to 20.8 percent. In addition, FGC recorded a positive change in market share from 18.5 percent to 20.0 percent. Accordingly, the Herfindahl-Hirschman Index (HHI) calculated based on offered capacity by major participants' grouping indicated a concentrated market for 13 percent of the time, and moderately concentrated market for 86 percent.

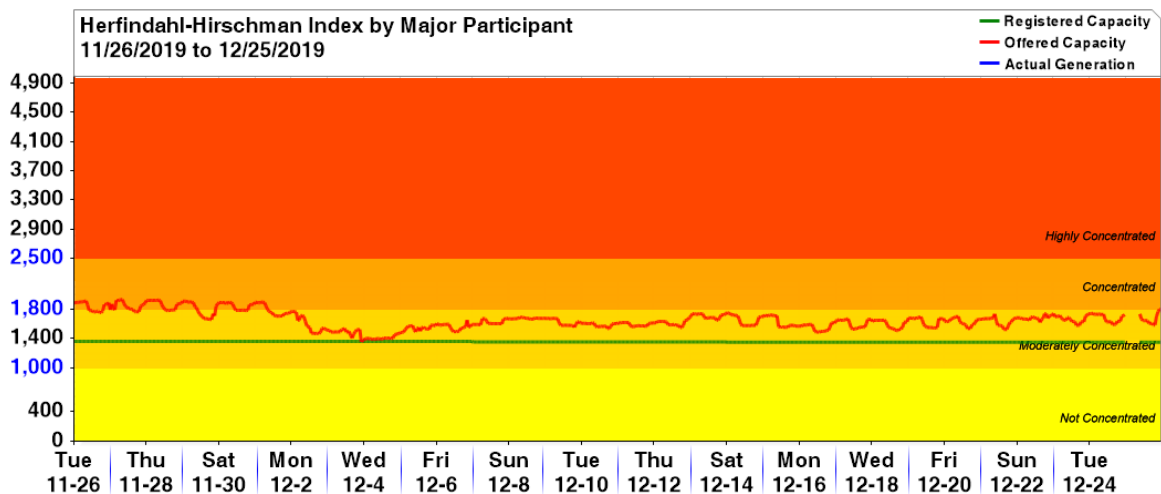


Figure 8. Hourly HHI based on Major Participant Grouping

4. Spot Exposure

Spot market transactions have been consistent over the months in terms of its percentage share in total metered quantities with about 13.5 percent, considering that majority of the total energy injected into the grid was covered by bilateral contracts at about 84.6 percent.

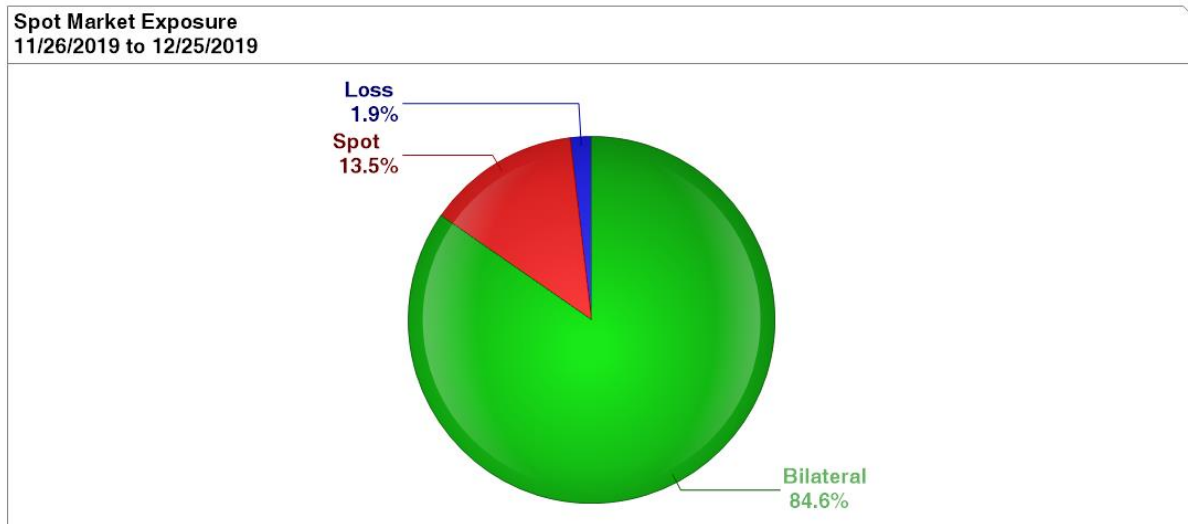


Figure 9. Spot Market Exposure

Generator spot market exposure averaged at around 14 percent during peak hours and 16 percent during off-peak hours. Additionally, spot exposure was lower in peak hours where prices are high, indicating higher percentage of metered quantities allocated to bilateral contract obligations between generators and customers.

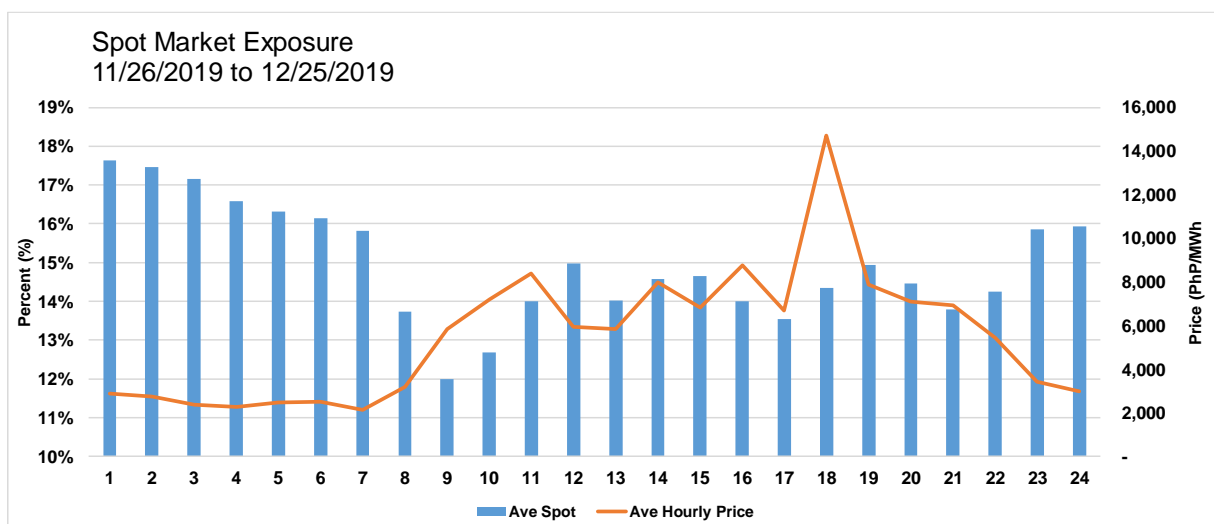


Figure 10. Hourly Spot Market Exposure

About 89 percent of the time, bulk of the spot quantities at 43 MWh and below was observed. Spot quantities for the month of December ranged from -2,086 MW, indicating a purchase in the market, to 471 MW. Only 11 instances were recorded to have a spot transaction ranging from -1,889 MW to -2,086 MW.

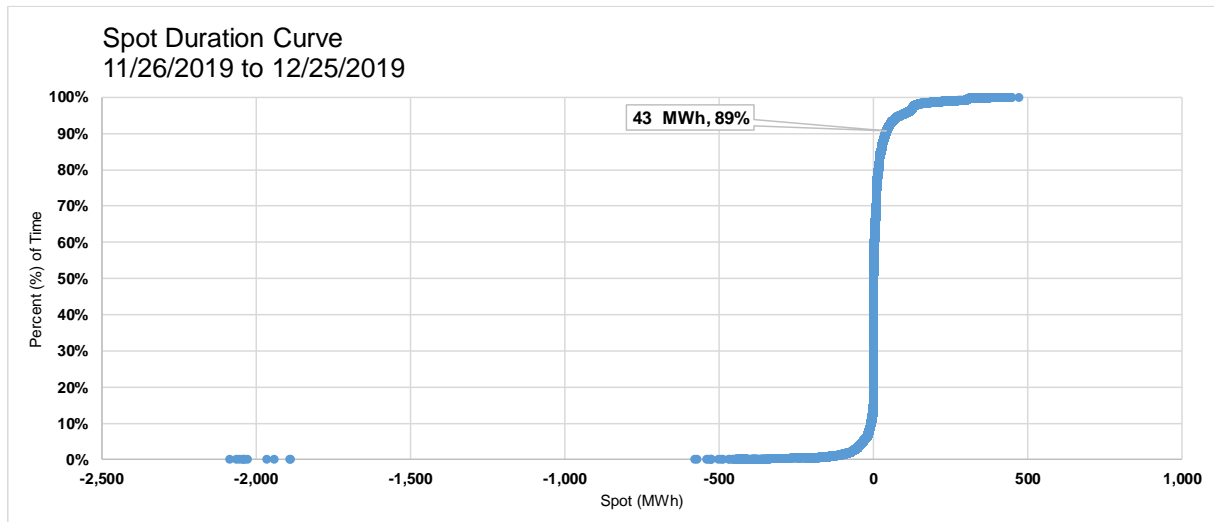


Figure 11. Spot Duration Curve

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/ Commerical Operation
LUZON	GEO	Makban 6	55	04/11/2013 22:44			Deactivated Shutdown	Conducted gas compressor test	Apr 1979
VISAYAS	GEO	PGPP2 Unit 4	20	06/27/2014 6:07			Forced Outage	Steam being utilized by Nasulo plant	Aug 1983
VISAYAS	GEO	Upper Mahiao 2	32	09/03/2018 6:01	12/13/2019 15:30	466.40	Forced Outage	Tripped	Jul 1997
LUZON	OIL	SLPGC 4	25	11/22/2018 11:56			Maintenance Outage	On extended maintenance shutdown until 24 April 2019	Mar 2017
LUZON	GEO	Makban 5	55	02/08/2019 16:08			Forced Outage	Low Steam Supply. Divert Steam Supply to unit 3	Apr 1979
LUZON	OIL	Malaya 1	300	05/03/2019 18:21			Forced Outage	Declared unavailable due to motorization of unit generator caused by the non-open	Aug 1975
LUZON	NATG	Avion 2	50.3	08/16/2019 0:01			Forced Outage	Gas turbine trouble	Aug 2015
LUZON	COAL	GN Power 1	316	09/20/2019 23:18	12/17/2019 11:14	87.50	Maintenance Outage	To facilitate correction of governor valves	May 2013
VISAYAS	COAL	Keppo Salcon 1	103	09/22/2019 0:57			Planned Outage	APMS	Nov 2010
VISAYAS	GEO	PGPP1 Unit 1	37.5	10/04/2019 12:41	12/22/2019 0:06	78.48	Forced Outage	Auto-tripped. ongoing investigation on cause of tripping	
VISAYAS	GEO	Upper Mahiao 4	32	10/04/2019 21:46	12/02/2019 22:23	59.03	Forced Outage	Affected by tripping of 138kV Colon-Calungcalung Line 1 and 2	Jul 1997
LUZON	COAL	Calaca 2	300	10/17/2019 23:49			Planned Outage	Maintenance Outage until 02 March 2020	Sep 1984
LUZON	COAL	Makban 1	63	10/21/2019 13:56	12/04/2019 6:03	43.67	Planned Outage	Annual Overhauling	Apr 1979
LUZON	COAL	Masinloc 2	344	10/30/2019 23:34	12/02/2019 16:31	32.71	Planned Outage	Planned Outage(GOP)	Jun 1998
LUZON	GEO	Tiwi 1	59	10/31/2019 23:54			Forced Outage	Low steam supply. Divert steam supply to unit 2	Jan 1979
VISAYAS	GEO	Upper Mahiao 1	32	11/07/2019 15:24	12/03/2019 0:09	25.36	Forced Outage	Ground fault.	Jul 1997
VISAYAS	GEO	Leyte 1	41	11/07/2019 19:52	11/30/2019 10:21	22.60	Forced Outage	Lube oil trip. block pressure low.	Jun 1983
LUZON	OIL	Limay 2	60	11/09/2019 0:05			Planned Outage	Planned Outage	May 1993
VISAYAS	GEO	Upper Mahiao 3	32	11/15/2019 0:31	11/29/2019 7:54	14.31	Maintenance Outage	Corrective maintenance for turbine bearing high vibration scheduled until Nov. 18	Jul 1997
LUZON	COAL	Pagbilao 3	420	11/16/2019 0:59	12/25/2019 2:03	39.04	Planned Outage	Planned Outage (GOP).	Jul 2017
LUZON	COAL	SLTEC 2	122.9	11/18/2019 0:01			Planned Outage	Planned Outage until 22 December 2019 (GOP).	Aug 2015
LUZON	OIL	Limay 4	90	11/18/2019 0:01			Planned Outage	Maintenance Outage until 18 December 2019	May 1993
LUZON	GEO	Tiwi 6	57	11/18/2019 6:08	11/28/2019 0:17	9.76	Maintenance Outage	Maintenance Outage(APRI requested) until 25 November 2019..	Jan 1979
LUZON	HYD	Kalayaan 3	180	11/19/2019 0:01	12/08/2019 4:02	19.17	Planned Outage	Planned Outage until 06 December 2019	May 2004
LUZON	HYD	Kalayaan 4	180	11/19/2019 0:01	12/10/2019 1:12	21.05	Planned Outage	Planned Outage until 10 December 2019	May 2004
LUZON	COAL	Sual 1	647	11/23/2019 7:45	12/17/2019 19:20	24.48	Planned Outage	Planned Outage	Oct 1999
LUZON	COAL	QPPL	460	11/24/2019 16:51	11/29/2019 7:48	4.62	Forced Outage	Inlet Valve trouble of Forced Draft Fan(FDF)-A and High Furnace Pressure.	May 2000
LUZON	COAL	SBPL	455	11/25/2019 14:28	11/27/2019 0:48	1.43	Forced Outage	Induced Draft Fan (IDF) hydraulic leak trouble.	Apr 2019
VISAYAS	COAL	TPC Sangi 1	60	11/26/2019 3:18	12/17/2019 1:39	20.93	Forced Outage	Tube leak	Dec 2013
LUZON	OIL	MGTPP	100	11/26/2019 17:07	11/28/2019 11:22	1.76	Forced Outage	Gas Turbine shaft vibration.	Jan 1993
LUZON	COAL	SBPL	455	11/27/2019 3:25	12/01/2019 6:39	4.13	Forced Outage	Emergency shutdown due to IDF blade pitch regulator trouble	Apr 2019
LUZON	GEO	Tiwi 5	57	11/28/2019 14:11	11/28/2019 17:53	0.15	Forced Outage	Emergency shutdown to facilitate troubleshooting of AVR	Jan 1979
LUZON	GEO	Bacman 3	20	11/28/2019 22:10	11/29/2019 4:16	0.25	Maintenance Outage	Maintenance Outage	
LUZON	GEO	Bacman 1	60	11/29/2019 17:21	11/29/2019 21:50	0.19	Forced Outage	Emergency shutdown	Sep 1993
LUZON	COAL	QPPL	460	11/29/2019 20:11	12/02/2019 3:57	2.32	Forced Outage	Primary air duct problem.	May 2000
LUZON	GEO	Makban 3	63	12/01/2019 15:15	12/01/2019 18:14	0.12	Forced Outage	Tripped due to steam supply problem	Apr 1979
LUZON	GEO	Makban 4	63	12/01/2019 15:15	12/01/2019 17:01	0.07	Forced Outage	Tripped due to steam supply problem	Apr 1979
LUZON	GEO	Makban 3	63	12/01/2019 21:19	12/02/2019 15:01	0.74	Forced Outage	Tripped due to steam supply problem	Apr 1979
LUZON	GEO	Makban 4	63	12/01/2019 21:21	12/02/2019 0:07	0.12	Forced Outage	Tripped due to steam supply problem	Apr 1979
LUZON	GEO	Bacman 1	60	12/02/2019 9:13	12/17/2019 0:17	14.63	Forced Outage	Due to Typhoon Tisoy	Sep 1993
LUZON	GEO	Bacman 3	20	12/02/2019 10:11	12/16/2019 15:55	14.24	Forced Outage	Due to Typhoon Tisoy	
LUZON	GEO	Bacman 2	60	12/02/2019 10:13	12/16/2019 10:24	14.01	Forced Outage	Due to Typhoon Tisoy	Sep 1993
LUZON	GEO	Tiwi 6	57	12/02/2019 10:26	12/16/2019 16:46	14.26	Forced Outage	Due to typhoon Tisoy	Jan 1979
LUZON	GEO	Tiwi 2	59	12/02/2019 10:35	12/16/2019 18:29	14.33	Forced Outage	Due to typhoon Tisoy	Jan 1979
LUZON	GEO	Tiwi 5	57	12/02/2019 11:45	12/16/2019 8:51	13.88	Forced Outage	On house load operation due to typhoon Tisoy	Jan 1979
LUZON	NATG	San Gabriel	420	12/02/2019 11:48	12/03/2019 21:07	1.39	Forced Outage	due to Natural Gas Fuel Supply Restriction from SPEX Malampaya Onshore Gas Plant	Mar 2016
VISAYAS	GEO	Upper Mahiao 3	32	12/02/2019 17:19			Forced Outage	Affected by the auto-blocking of 350kV HVDC	Jul 1997
LUZON	COAL	Masinloc 2	344	12/02/2019 18:20	12/02/2019 20:07	0.07	Forced Outage	Tripped due to main ignitor and burner gun	Jun 1998
LUZON	NATG	Ilijan A1	190	12/02/2019 20:20	12/05/2019 3:25	2.30	Forced Outage	Preventive measure for the passage of Typhoon TISOY.	Jun 2002
VISAYAS	GEO	Upper Mahiao 4	32	12/02/2019 22:23	12/03/2019 11:42	0.55	Forced Outage	Affected by the auto-blocking of 350kV HVDC.	Jul 1997
LUZON	COAL	Masinloc 2	344	12/02/2019 23:08	12/03/2019 1:52	0.11	Forced Outage	Tripped with 68MW load.	Jun 1998
VISAYAS	GEO	Upper Mahiao 1	32	12/03/2019 0:09	12/05/2019 7:50	2.32	Forced Outage	Affected by the auto-blocking of 350kV HVDC.	Jul 1997
VISAYAS	GEO	PGPP1 Unit 3	37.5	12/03/2019 0:52	12/03/2019 1:09	0.01	Forced Outage	Auto-tripped. Ongoing investigation on cause of tripping.	
LUZON	COAL	Masinloc 2	344	12/03/2019 2:28	12/03/2019 7:31	0.21	Forced Outage	Tripped by re-heater protection	Jun 1998
LUZON	HYD	Caliraya 1	14	12/03/2019 7:52	12/03/2019 19:01	0.46	Forced Outage	Affected by line tripping caused by typhoon Tisoy	Oct 2002
LUZON	HYD	Caliraya 2	14	12/03/2019 7:52	12/03/2019 19:01	0.46	Forced Outage	Affected by line tripping caused by typhoon Tisoy	Oct 2002
LUZON	NATG	Ilijan B2	190	12/03/2019 8:20	12/05/2019 8:28	2.01	Forced Outage	Ilijan NGPP precautionary measure due to passage of Typhoon TISOY.	Jun 2002
LUZON	GEO	Makban 3	63	12/03/2019 8:45	12/03/2019 11:15	0.10	Forced Outage	On house load as precautionary measures for the passage of Typhoon Tisoy	Apr 1979
LUZON	GEO	Makban 4	63	12/03/2019 8:45	12/03/2019 20:07	0.47	Forced Outage	Precautionary measures for the passage of Typhoon Tisoy	Apr 1979
LUZON	GEO	Makban 7	20	12/03/2019 8:45	12/05/2019 10:02	2.05	Forced Outage	Plant decision as precautionary measures for the passage of Typhoon Tisoy.	Apr 1979
LUZON	GEO	Makban 8	20	12/03/2019 8:45	12/05/2019 12:29	2.16	Forced Outage	Plant decision as precautionary measures for the passage of Typhoon Tisoy.	Apr 1979
LUZON	NATG	Sta. Rita 1	257.3	12/03/2019 9:46	12/03/2019 14:55	0.21	Forced Outage	Plant decision as precautionary measures for the passage of Typhoon Tisoy	Jun 2000
LUZON	GEO	Makban 9	20	12/03/2019 10:59	12/03/2019 19:41	0.36	Forced Outage	On house load as precautionary measures for the passage of Typhoon Tisoy	Apr 1979
LUZON	GEO	Makban 3	63	12/03/2019 11:32	12/03/2019 18:23	0.29	Forced Outage	Contingency measure for the passage of Typhoon TISOY. On House-Load Operation	Apr 1979
LUZON	GEO	Makban 2	63	12/03/2019 11:47	12/04/2019 19:33	1.32	Forced Outage	On house load as precautionary measures for the passage of Typhoon Tisoy	Apr 1979
LUZON	NATG	Ilijan B3	220	12/03/2019 14:35	12/05/2019 10:01	1.81	Forced Outage	Ilijan NGPP precautionary measure due to passage of Typhoon TISOY.	Jun 2002
LUZON	NATG	Ilijan B1	190	12/03/2019 14:47	12/05/2019 12:26	1.90	Forced Outage	Ilijan NGPP precautionary measure due to passage of Typhoon TISOY.	Jun 2002
LUZON	NATG	Ilijan A3	220	12/03/2019 14:58	12/05/2019 1:27	1.44	Forced Outage	Ilijan NGPP precautionary measure due to passage of Typhoon TISOY.	Jun 2002
LUZON	NATG	Ilijan A2	190	12/03/2019 15:10	12/04/2019 23:46	1.36	Forced Outage	Ilijan NGPP precautionary measure due to passage of Typhoon TISOY.(RECLASSIFIED	Jun 2002
LUZON	COAL	SBPL	455	12/03/2019 16:42	12/03/2019 21:07	0.18	Forced Outage	Due to arching at 230kV Breaker affected by the passage of Typhoon Tisoy	Apr 2019
LUZON	NATG	Sta. Rita 1	257.3	12/03/2019 21:25	12/04/2019 0:38	0.13	Forced Outage	Tripped at 180MW load while on change-over from oil to gas	Jun 2000
VISAYAS	GEO	PGPP2 Unit 3	20	12/04/2019 19:33	12/05/2019 18:46	0.97	Forced Outage	Affected by tripping of 138kv Amlan - Samboan Line	Aug 1983
VISAYAS	GEO	Upper Mahiao 3	32	12/05/2019 0:07			Forced Outage	Emergency shutdown requested by customer to facilitate rotor transfer to Unit 2	Jul 1997
VISAYAS	GEO	Upper Mahiao 4	32	12/05/2019 3:45			Forced Outage	Loss of 125 DC supply in the control valve	Jul 1997
LUZON	NATG	Ilijan B2	190	12/05/2019 14:48	12/06/2019 18:25	1.15	Forced Outage	Lube oil high temperature	Jun 2002
LUZON	COAL	SMC 2	150	12/06/2019 2:15			Planned Outage	Planned Outage until 20 December 2019, (GOP)	Mar 2017
LUZON	COAL	Calaca 1	300	12/06/2019 17:01	12/22/2019 22:07	16.21	Forced Outage	Emergency shutdown due to boiler tube leak	Sep 1984
LUZON	NATG	Ilijan B2	190	12/06/2019 18:38	12/06/2019 20:23	0.07	Forced Outage	Combustor cooling low differential pressure	Jun 2002
LUZON	COAL	Masinloc 3	335	12/07/2019 2:31	12/09/2019 7:20	2.20	Planned Outage	On Commissioning Test	Mar 2019
LUZON	COAL	ANDA 1	72	12/09/2019 5:30	12/09/2019 6:34	0.04	Forced Outage	Tripped	Apr 2015
LUZON	COAL	Masinloc 2	344	12/09/2019 23:43	12/12/2019 18:11	2.77	Forced Outage	Boiler Tube Leak	Jun 1998
VISAYAS	GEO	Leyte 1	41	12/10/2019 0:29	12/11/2019 9:16	1.37	Forced Outage	VSO-PUSR-2019-116. ETC 12-11-2019 at 1200H	Jun 1983
VISAYAS	GEO	Leyte 3	40.2	12/10/2019 0:48	12/11/2019 11:55	1.46	Forced Outage	VSO-PUSR-2019-116. ETC 12-11-2019 at 1200H	Jun 1983
VISAYAS	GEO	Leyte 2	39.3	12/10/2019 0:57	12/11/2019 17:00	1.67	Forced Outage	VSO-PUSR-2019-116. ETC 12-11-2019 at 1200H	Jun 1983
LUZON	HYD	Cascanan 2	82.5	12/11/2019 18:02			Forced Outage	Transformer differential indication.	Apr 2002
LUZON	OIL	SLPGC 3	25	12/11/2019 23:00			Maintenance Outage	Maintenance outage until December 27 2019	Mar 2017
LUZON	OIL	SLPGC 4	25	12/11/2019 23:53			Maintenance Outage	Maintenance outage until December 27 2019	Mar 2017
VISAYAS	OIL	CENPRI 5	6.4	12/12/2019 17:55			Forced Outage	Emergency cut-out due to fuel leak.	Mar 2016
LUZON	COAL	Masinloc 3	335	12/12/2019 20:46	12/16/2019 9:11	3.52	Forced Outage	Steam leak at main steam header line.	Mar 2019
LUZON	COAL	SLPGC 1	150	12/13/2019 0:04			Planned Outage	Maintenance Outage	Jan 2015
LUZON	NATG	San Lorenzo 2	261.8	12/14/2019 4:34	12/16/2019 10:40	2.25	Planned Outage	Maintenance Outage	Sep 2002
LUZON	COAL	Sual 2	647	12/15/2019 8:57	12/19/2019 20:25	4.48	Forced Outage	Boiler Tube Leak.	Oct 1999
VISAYAS	COAL	TPC Sangi 1	60	12/17/2019 6:05			Forced Outage	Generator differential trip	Dec 2013
LUZON	HYD	Caliraya 1	14	12/17/2019 15:30	12/17/2019 20:07	0.19	Forced Outage	Emergency shutdown due to accident on Caliraya Spillway	Oct 2002
LUZON	HYD	Caliraya 2	14	12/17/2019 15:30	12/17/2019 22:29	0.29	Forced Outage	Emergency shutdown due to accident on Caliraya Spillway	Oct 2002
LUZON	COAL	Sual 1	647	12/17/2019 19:40	12/22/2019 15:49	4.84	Forced Outage	Tripped due to turbine shaft axial displacement problem	Oct 1999
LUZON	GEO	Tiwi 5	57	12/18/2019 15:17	12/19/2019 6:57	0.65	Forced Outage	Condensate system trouble	Jan 1979
LUZON	GEO	Tiwi 6	57	12/18/2019 15:25	12/19/2019 7:00	0.65	Forced Outage	Condensate system trouble	Jan 1979
LUZON	GEO	Tiwi 2	59	12/18/2019 17:12	12/19/2019 7:02	0.58	Forced Outage	Condensate system trouble	Jan 1979
LUZON	COAL	Masinloc 1	315	12/19/2019 23:53			Maintenance Outage	Maintenance outage until December 24 2019	Jun 1998
LUZON	NATG	Sta. Rita 2	255.7	12/20/2019 0:29	12/22/2019 21:02	2.86	Maintenance Outage	Maintenance outage until December 22 2019	Jun 2000
LUZON	OIL	Limay 1	60	12/20/2019 2:14			Forced Outage	Tripped at 51 MW load. High temperature thrust bearing	May 1993
LUZON	COAL	GN Power 1	316	12/20/2019 10:53	12/23/2019 18:52	3.33	Forced Outage	Condenser tube leak	May 2013
LUZON	NATG	San Lorenzo 1	264.8	12/21/2019 0:37	12/24/2019 8:45	3.34	Planned Outage	Planned outage	Sep 2002
LUZON	COAL	ANDA 1	72	12/21/2019 7:23					