



# 2017 POWER DEMAND AND SUPPLY HIGHLIGHTS



**Peak Demand**  
**13,789 MW**



**Capacity**  
Installed - 22,730 MW  
Dependable - 20,515 MW  
Available - 14,458 MW

**Electricity Sales and Consumption**  
94,370 GWh



**Newly Operational Installed Capacity**  
835 MW



**Gross Generation**  
94,370 GWh

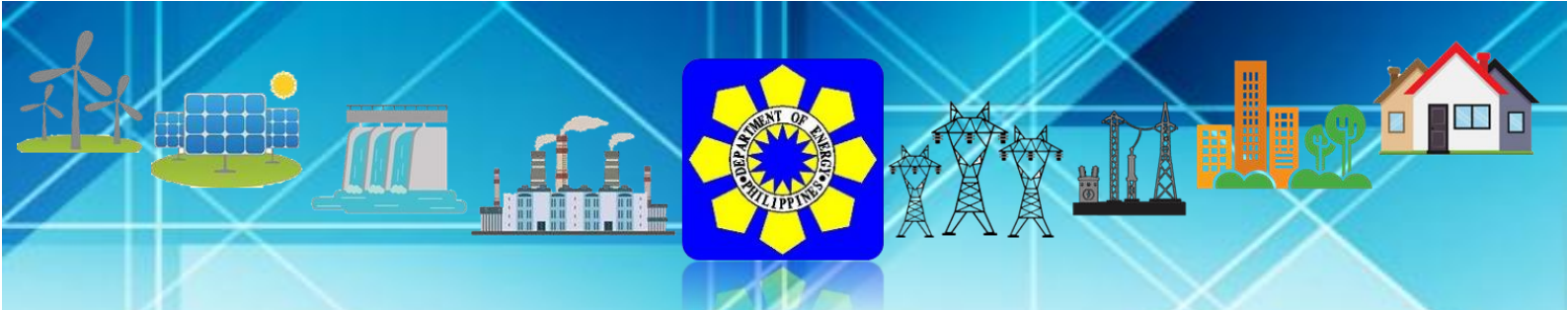


**Power Project Capacity**  
Committed - 6,511 MW  
Indicative - 17,444 MW

The country's total peak demand in 2017 was recorded at 13,789 MW, which is 517 MW or 3.9% higher than the 13,272 MW in 2016. On the other hand, the total power supply, in terms of installed capacity, grew by 6.1% from 21,425 MW in 2016 to 22,730 MW in 2017. A total of 835 MW new capacities were added to the country's supply base in 2017 which include coal-fired (630 MW), solar (127 MW), oil-based (77 MW), and hydropower (1 MW). In terms of share by grid, Luzon contributed 392 MW or 47%, Mindanao at 337 MW or 40% and Visayas at 106 MW or 3%. The year also saw the end of the constrained demand in Mindanao which grew by 6.5% or 107 MW from 1,653 MW in 2016 to 1,760 MW in 2017.

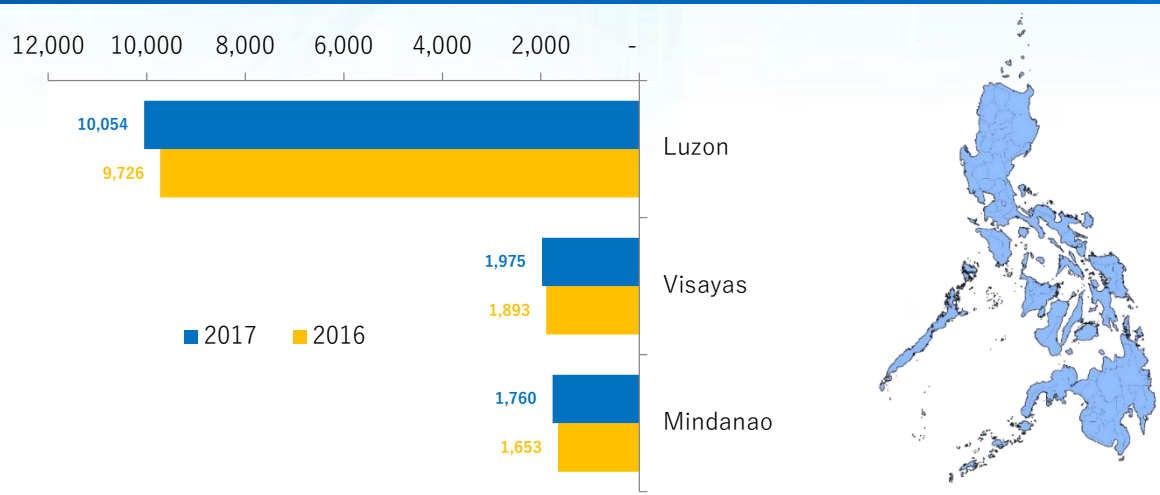
Philippine Power System continued to exhibit its resiliency and stakeholders' unified actions in the onslaught of challenges in 2017. Natural and man-made disasters hit some parts of the country, coupled with the continued concerns on forced outages of large power generation plants, as well as the transmission and distribution system. The most notable of these is the 6.5 magnitude earthquake in the Visayas (Jaro, Leyte) which occurred in the second half of 2017, damaging geothermal power generation, transmission and distribution facilities, and resulted to the total loss of power in the provinces of Samar, Leyte, and Bohol. In Mindanao, the Marawi Siege led to the multiple partial blackout in the franchise area of the Lanao Del Sur Electric Cooperative (LASURECO) and total blackout in Marawi City. In view of these incidents, the DOE initiatives to integrate in its plans, policies, and programs the energy resiliency, performance assessment of the power industry participants to improve energy security and reliability were very timely.

The DOE published power-related development plans (Power Development Plan 2016-2040; Distribution Development Plan 2016-2025; and Missionary Electrification Development Plan 2016-2020) which laid down the basic data and information of the Philippine Power System; power supply and demand outlook in grid and off-grid areas; and power sector roadmaps, policies, and programs for the short-, medium- and long-term horizon. These serve as investors' references in business development in the country.



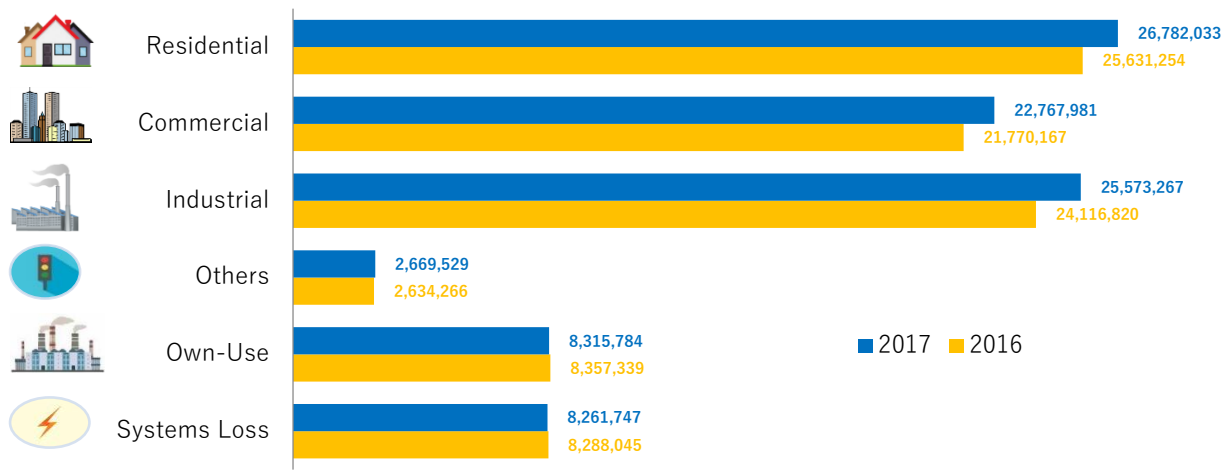
# 2017 POWER DEMAND AND SUPPLY HIGHLIGHTS

## 2016 vs. 2017 Peak Demand (in MW)



The country's total peak demand in 2017 grew steadily by 3.9% or 517 MW from 13, 272 MW in 2016 to 13,789 MW in 2017. Mindanao's peak demand growth rate at 6.5% or 107 MW was the highest among the three grids. Total electricity consumption likewise grew by 3.9% or 3,572,450 MWh, from 90,797,891 MWh in 2016 to 94,370,341 MWh in 2017. This increase is largely attributed to the growth of the residential and industrial sectors which contributed 1.1 percentage points to the overall growth rate. Expansion in the residential sector is associated with the increasing household electricity consumption, rising income per capita, and intensification of household electrification, among others. Meanwhile, the high industrialization target of the government boosted the performance of the industrial sector. Based on the 2017 National Accounts, the industry sector grew by 7.2% fueled by the expansion in the manufacturing, and public construction subsectors.<sup>1</sup>

## 2016 vs. 2017 Electricity Sales and Consumption (in MWh)



<sup>1</sup>2017 Full-year Economic Report Building on Resilience, Senate of the Philippines' Economic Planning Office

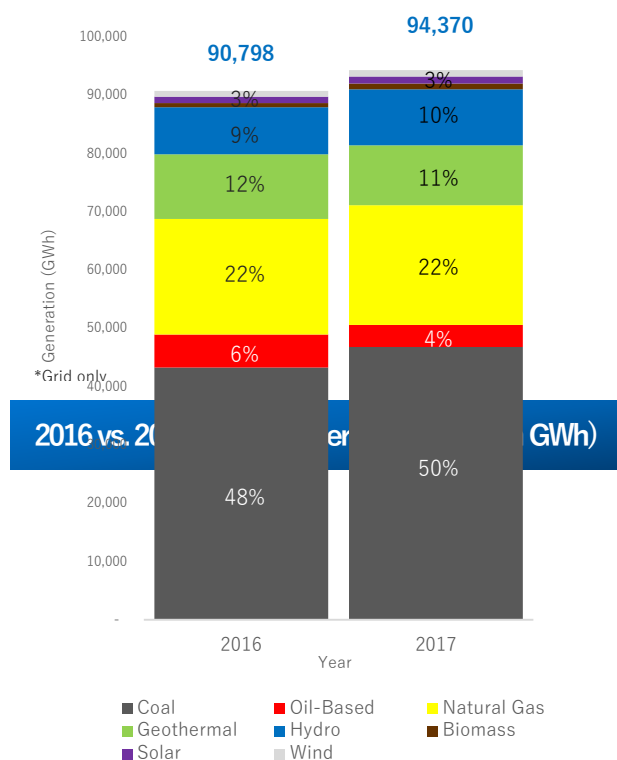


# 2017 POWER DEMAND AND SUPPLY HIGHLIGHTS

## 2016 vs. 2017 Existing Installed, Dependable and Available Capacity (in MW)

Fuel Type	Installed		Dependable		Available	
	2016*	2017	2016*	2017	2016*	2017
<b>Coal</b>	<b>7,419</b>	<b>8,049</b>	<b>6,979</b>	<b>7,674</b>	<b>5,391</b>	<b>6,773</b>
<b>Oil Based</b>	<b>3,616</b>	<b>4,154</b>	<b>2,821</b>	<b>3,287</b>	<b>2,041</b>	<b>2,282</b>
<b>Natural Gas</b>	<b>3,431</b>	<b>3,447</b>	<b>3,291</b>	<b>3,291</b>	<b>2,729</b>	<b>2,859</b>
<b>Renewable Energy</b>	<b>6,959</b>	<b>7,080</b>	<b>6,004</b>	<b>6,263</b>	<b>4,297</b>	<b>4,314</b>
<i>Geothermal</i>	1,916	1,916	1,689	1,752	1,300	1,339
<i>Hydro</i>	3,618	3,627	3,181	3,268	2,314	2,287
<i>Biomass</i>	233	224	157	160	112	101
<i>Solar</i>	765	886	594	700	431	513
<i>Wind</i>	427	427	383	383	140	74
<b>TOTAL</b>	<b>21,425</b>	<b>22,730</b>	<b>19,095</b>	<b>20,515</b>	<b>14,458</b>	<b>16,228</b>

\*Grid only



Note: Some values may not correspond to the 2017 Power Statistics and/or previous issuances due to rounding

- The country's total installed capacity grew by 6.1% from 21,425 MW in 2016 to 22,730 MW in 2017. This increase in capacity is brought about by the commercial operation of large coal-fired power plants (630 MW) in Luzon and Mindanao, a number of solar farms in Luzon and Visayas (127 MW), and the entry of additional capacities from oil and hydro power plants (78 MW).
- The inclusion of off-grid power plants, primarily oil-based, solar, and hydro, also contributed to the increase in the total installed capacity for 2017. Off-grid capacities constitute to about 2% or 465 MW of the total installed capacity in 2017.
- On a per fuel-type basis, the share of coal to the total installed capacity remains the largest at 36% (8,049 MW), followed by renewable energy at 31% (7,079 MW), oil-based at 18% (4,153 MW), and natural gas at 15% (3,447 MW).
- Meanwhile, power generation grew at a much lower pace at 3.9% from 90,798 GWh in 2016 to 94,370 GWh in 2017. Coal also remains the major source of electricity generation for Luzon, Visayas, and Mindanao with a combined share of 50% (46,847,274 MWh).
- Committed capacities that will be coming in the pipeline are largely coal power projects at 80% (5,190 MW), while the indicative capacities are mainly renewables at 43% (7,518 MW).



## 2017 POWER DEMAND AND SUPPLY HIGHLIGHTS

### 2016 vs. 2017 Summary of Newly Operational Capacities (in MW)\*

Power Plant Facility Name	Installed		Dependable	
	2016	2017	2016	2017
<b>Coal</b>	<b>1,492</b>	<b>630</b>	<b>1,369</b>	<b>594</b>
<b>Oil-Based</b>	<b>36</b>	<b>77</b>	<b>34</b>	<b>67</b>
<b>Natural Gas</b>	<b>550</b>	<b>0</b>	<b>511</b>	<b>0</b>
<b>Renewable Energy</b>	<b>613</b>	<b>128</b>	<b>475</b>	<b>104</b>
<i>Geothermal</i>	0	0	0	0
<i>Hydro</i>	1	1	1	1
<i>Biomass</i>	12	0	11	0
<i>Solar</i>	600	127	463	103
<i>Wind</i>	0	0	0	0
<b>TOTAL</b>	<b>2,691</b>	<b>835</b>	<b>2,389</b>	<b>765</b>

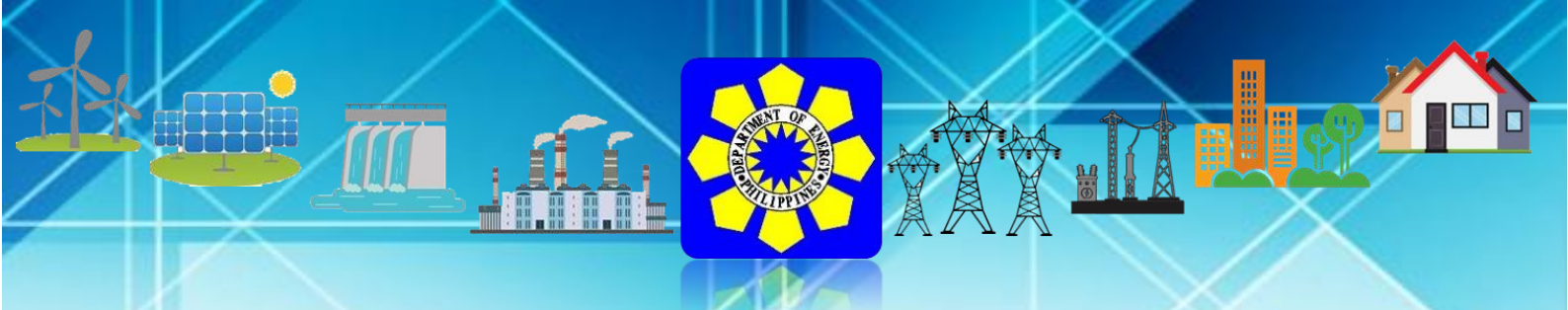
### 2016 vs. 2017 Summary of Committed and Indicative Power Projects (in MW)\*

Type of Power Plant	Committed Capacity		Indicative Capacity	
	2016	2017	2016	2017
<b>Coal</b>	<b>2,720</b>	<b>5,190</b>	<b>6,570</b>	<b>6,660</b>
<b>Oil-Based</b>	<b>0</b>	<b>46</b>	<b>196</b>	<b>450</b>
<b>Natural Gas</b>	<b>650</b>	<b>650</b>	<b>2,050</b>	<b>2,816</b>
<b>Renewable Energy</b>	<b>158</b>	<b>625</b>	<b>3,260</b>	<b>7,518</b>
<i>Geothermal</i>	43	43	80	130
<i>Hydro</i>	63	439	1,071	2,738
<i>Biomass</i>	23	50	58	114
<i>Solar</i>	29	93	1,054	3,260
<i>Wind</i>	0	0	997	1,275
<b>TOTAL</b>	<b>3,528</b>	<b>6,511</b>	<b>12,076</b>	<b>17,444</b>
Battery Storage**	10	10	230	230

\* Grid only

\*\* for accounting purposes; declared capacity for Ancillary Services (AS) to the system

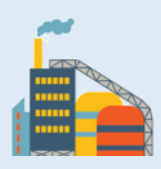




# 2017 POWER DEMAND AND SUPPLY HIGHLIGHTS

## Significant Incidents

Following are the significant incidents that affected the Philippine Power System in 2017. These occurrences resulted to tight supply conditions, several automatic load dropping incidents, issuance of yellow and red alert grid status, and power interruptions, among others. A total of 429<sup>2</sup> significant forced outages of power generation plants were recorded in 2017. Meanwhile, 3 major earthquakes and 7 typhoons<sup>3</sup> hit the country this year that caused significant damages to power generation, transmission, and distribution facilities and infrastructure.



Forced Outages of Power Generation Plants



Transmission and Distribution System Interruptions



Fuel Restrictions



Earthquakes



Typhoons



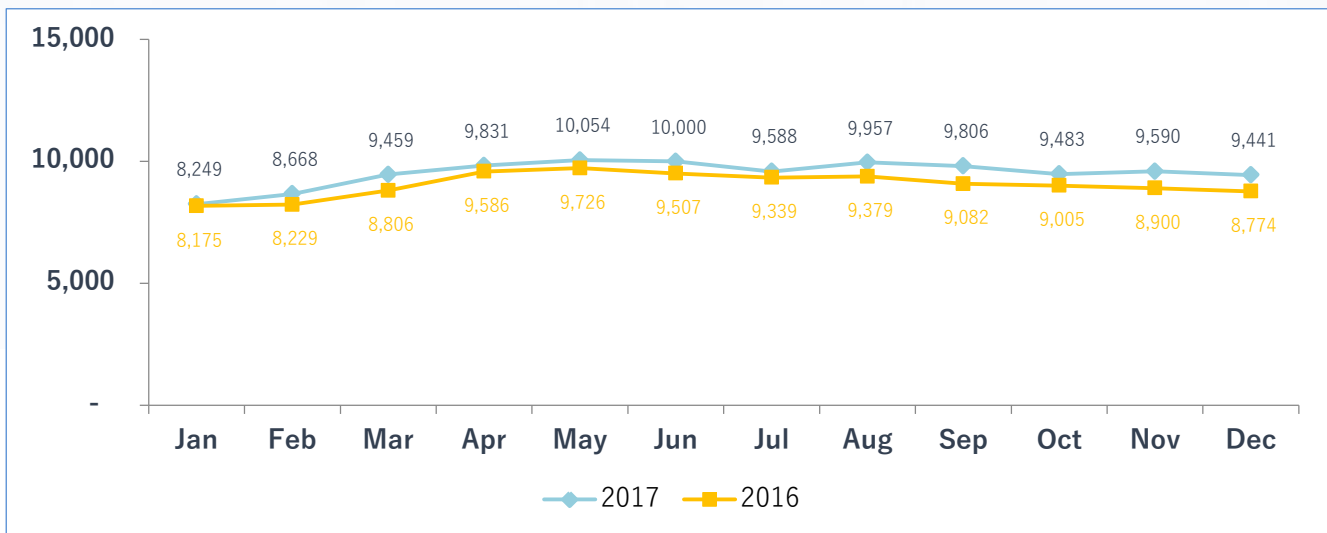
Marawi Siege (Mindanao)

<sup>2</sup>Based on NGCP's 2017 Grid Operating and Maintenance Program (GOMP)

<sup>3</sup>Only includes natural disasters that significantly affected the power system in 2017

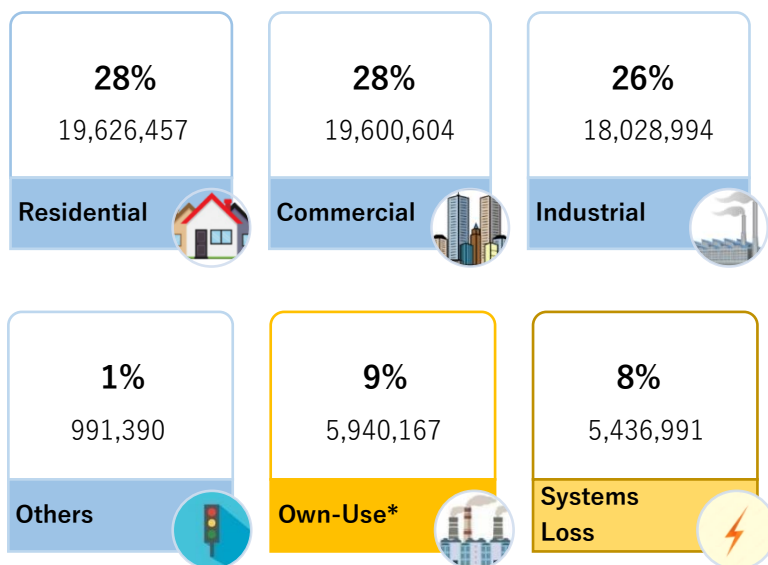
# LUZON

## Monthly Peak Demand (in MW)



Source: NGCP

## Electricity Sales and Consumption (in MWh)



- Electricity sales and consumption in Luzon for 2017 reached a total of 69,624,603 MWh. This is 3.6% higher than in 2016 at 67,220,596 MWh.
- The residential and commercial sector contributed the most to Luzon's overall growth rate at 1.0 percentage points each.
- Economic activities related to financial intermediation; real estate, renting and business; trade and repair of motor vehicles; other services, transportation, storage, and communication are the major growth drivers of the commercial/service sector in Luzon, particularly in the NCR, Ilocos, Cagayan Valley, and MIMAROPA regions.<sup>4</sup>
- Luzon's share to the country's total electricity sales and consumption remained the largest at 74%.

<sup>4</sup>Gross Domestic Product of the Philippines Highlights for 2017, Philippine Statistics Authority (PSA)

# LUZON

## Existing Installed, Dependable and Available Capacity, January-December 2017 (in MW)

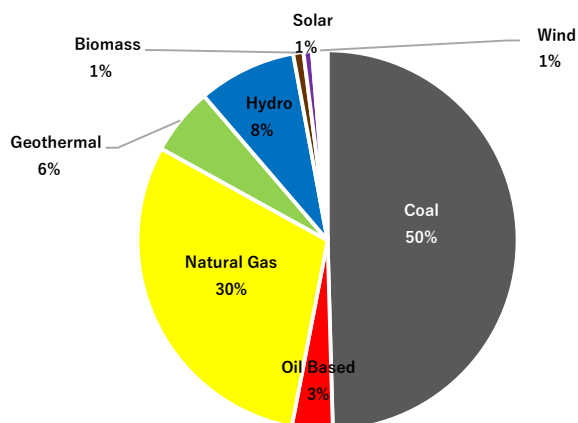
Fuel Type	Installed		Dependable		Available*	
	MW	Percent Share (%)	MW	Percent Share (%)	MW	Percent Share (%)
Coal	5,625	35.73	5,404	37.45	4,775	41.72
Oil Based	2,518	15.99	1,977	13.70	1,415	12.36
Natural Gas	3,446	21.89	3,291	22.81	2,859	24.98
Renewable Energy	4,156	26.40	3,757	26.05	2,395	20.93
<i>Geothermal</i>	<i>843</i>	<i>5.35</i>	<i>782</i>	<i>5.42</i>	<i>558</i>	<i>4.88</i>
<i>Hydro</i>	<i>2,527</i>	<i>16.05</i>	<i>2,351</i>	<i>16.29</i>	<i>1,585</i>	<i>13.85</i>
<i>Biomass</i>	<i>87</i>	<i>0.55</i>	<i>66</i>	<i>0.46</i>	<i>49</i>	<i>0.43</i>
<i>Solar</i>	<i>362</i>	<i>2.30</i>	<i>265</i>	<i>1.84</i>	<i>161</i>	<i>1.41</i>
<i>Wind</i>	<i>337</i>	<i>2.14</i>	<i>293</i>	<i>2.03</i>	<i>42</i>	<i>0.37</i>
<b>2017 TOTAL</b>	<b>15,743</b>	<b>100.00</b>	<b>14,429</b>	<b>100.00</b>	<b>11,444</b>	<b>100.00</b>
<b>2016 TOTAL**</b>	<b>14,977</b>		<b>13,600</b>		<b>10,508</b>	

\*Coincidental to the Peak Demand, grid only

\*\*Grid only

## Gross Power Generation, January-December 2017

68,512,419 MWh



**392  
MW**

• Newly  
Operational  
Plants

**6,511  
MW**

• Committed  
Projects

**17,444  
MW**

• Indicative  
Projects

# LUZON

## Newly Operational Capacities, January-December 2017 (in MW)

Power Plant Facility Name	Capacity (MW)		Owner/ Operator
	Installed	Dependable	
<b>Coal</b>	<b>330</b>	<b>324</b>	
SCPC U1	150	150	SMC Consolidated Power Corporation
SCPC U2	150	150	
UPPC	30	24	United Pulp & Paper Co., Inc (former own-used plant)
<b>Hydro</b>	<b>1</b>	<b>1</b>	
San Luis	1	1	EPower Technologies Corp.
<b>Solar</b>	<b>61</b>	<b>49</b>	
Mariveles Solar	18	12	Next Generation Power Technology Corporation
Sta. Rita Phase	32	29	Jobin-Sqm Inc. (JOBIN)
CW Home Depot Solar	2	1	CW Marketing & Development Corporation (CW)
Morong Solar	5	3	SPARC Solar Powered Agri-Rural Communities Corporation
San Rafael Solar	4	3	SPARC Solar Powered Agri-Rural Communities Corporation
Sarrat Solar	1	1	Bosung Solartec, Inc. (BOSUNG)
<b>2017 TOTAL</b>	<b>392</b>	<b>374</b>	
<b>2016 TOTAL</b>	<b>1,319</b>	<b>1,163</b>	

## Luzon Summary of Committed and Indicative Power Projects, as of 31 December 2017

Type of Power Plant	Committed			Indicative		
	No. of Proponents	Capacity (MW)	% Share	No. of Proponents	Capacity (MW)	% Share
<b>Coal</b>	<b>8</b>	<b>5,190</b>	<b>79.70</b>	<b>9</b>	<b>6,660</b>	<b>38.20</b>
<b>Oil-Based</b>	<b>1</b>	<b>46</b>	<b>0.70</b>	<b>2</b>	<b>450</b>	<b>2.60</b>
<b>Natural Gas</b>	<b>1</b>	<b>650</b>	<b>10.00</b>	<b>4</b>	<b>2,816</b>	<b>16.10</b>
<b>Renewable Energy</b>	<b>36</b>	<b>625</b>	<b>9.60</b>	<b>57</b>	<b>7,518</b>	<b>43.10</b>
<i>Geothermal</i>	<i>2</i>	<i>43</i>	<i>0.70</i>	<i>1</i>	<i>130</i>	<i>0.70</i>
<i>Hydro</i>	<i>29</i>	<i>439</i>	<i>6.70</i>	<i>15</i>	<i>2,738</i>	<i>15.70</i>
<i>Biomass</i>	<i>4</i>	<i>50</i>	<i>0.80</i>	<i>10</i>	<i>114</i>	<i>0.70</i>
<i>Solar</i>	<i>1</i>	<i>93</i>	<i>1.40</i>	<i>25</i>	<i>3,260</i>	<i>18.70</i>
<i>Wind</i>	<i>0</i>	<i>0</i>	<i>0.00</i>	<i>6</i>	<i>1,276</i>	<i>7.30</i>
<b>2017 TOTAL</b>	<b>46</b>	<b>6,511</b>	<b>100.00</b>	<b>72</b>	<b>17,444</b>	<b>100.00</b>
<b>2016 TOTAL</b>	<b>19</b>	<b>3,528</b>	<b>100.00</b>	<b>72</b>	<b>12,076</b>	<b>100.0</b>
Battery Storage*	1	10		2	230	

\* for accounting purposes; declared capacity for Ancillary Services (AS) to the system

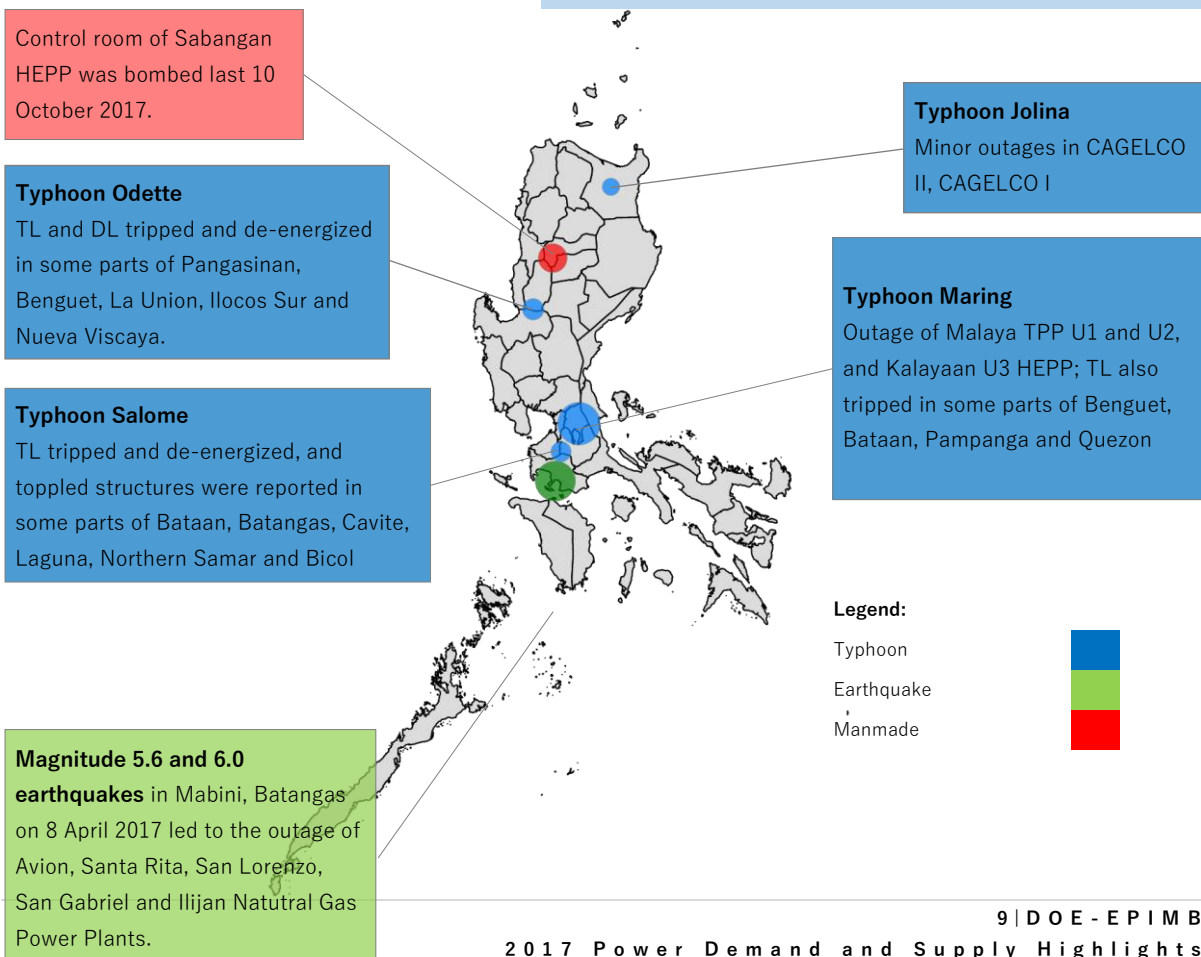


# LUZON

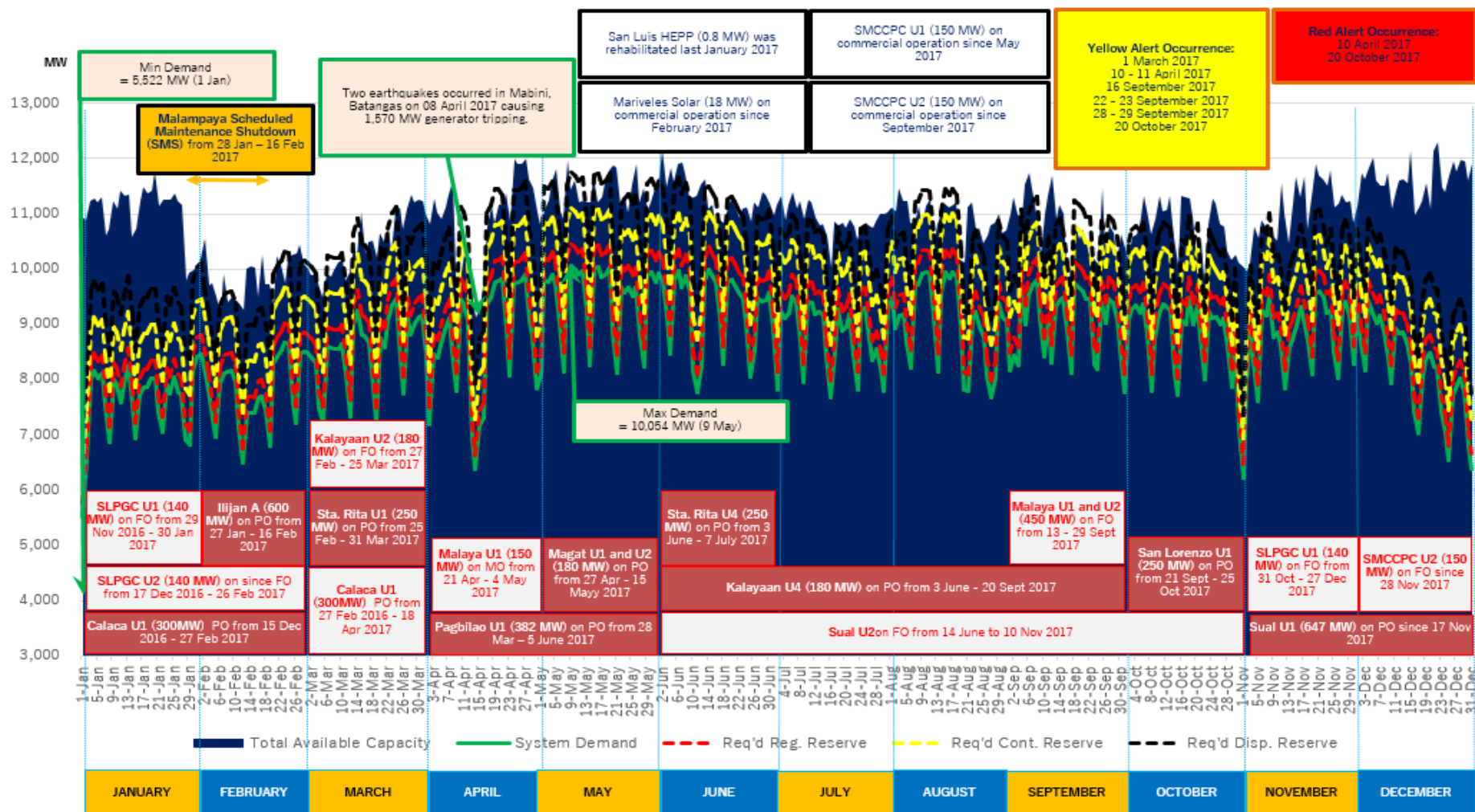
## Significant Grid Incidents

- Shell Philippines Exploration B.V. (SPEX) conducted the Malampaya Gas Facility Scheduled Maintenance Shutdown (SMS) on 28 January to 16 February 2017 which was safely completed ahead of the planned schedule. Despite this SMS and the occurrence of forced outages of some major power plants, Luzon grid remained stable due to the low demand during the period. During the SMS, Santa Rita, San Lorenzo and Avion Natural Gas-Fired Power Plants run on liquid fuel while Ilijan Natural Gas-Fired Power Plant run on bio-diesel.
- The 647 MW Sual Coal-Fired Power Plant (CFPP) Unit 2 went on forced outage on 14 June 2017 triggering an Automatic Load Dropping (ALD) incident with recorded system frequency drop at 58.908 Hz. It was reported that the primary cause of transformer failure was internal flash over on the high voltage (HV) winding which resulted to the explosion of HV bushing. On-site repair was not recommended due to carbon deposits contamination all over the internals. Sual CFPP Unit 2 went online on 10 November 2017.
- Luzon grid experienced 11 yellow alerts and 2 red alerts brought about by forced outages of power plants, natural disasters, and natural gas fuel restriction.
- Luzon grid experienced 24 ALD for 2017. Most of ALDs occurred in the month of June with six (6) ALDs due to the tripping of power plants with large capacities. On the average, most of the outages caused by the load dropping were not sustained for more than 17 minutes.
- Luzon grid experienced 7 major transmission system interruptions for 2017 brought about by system fault, disasters, and line tripping. Some of the transmission system interruptions caused isolation and tripping of power plants.

## Natural and Man-made Disasters

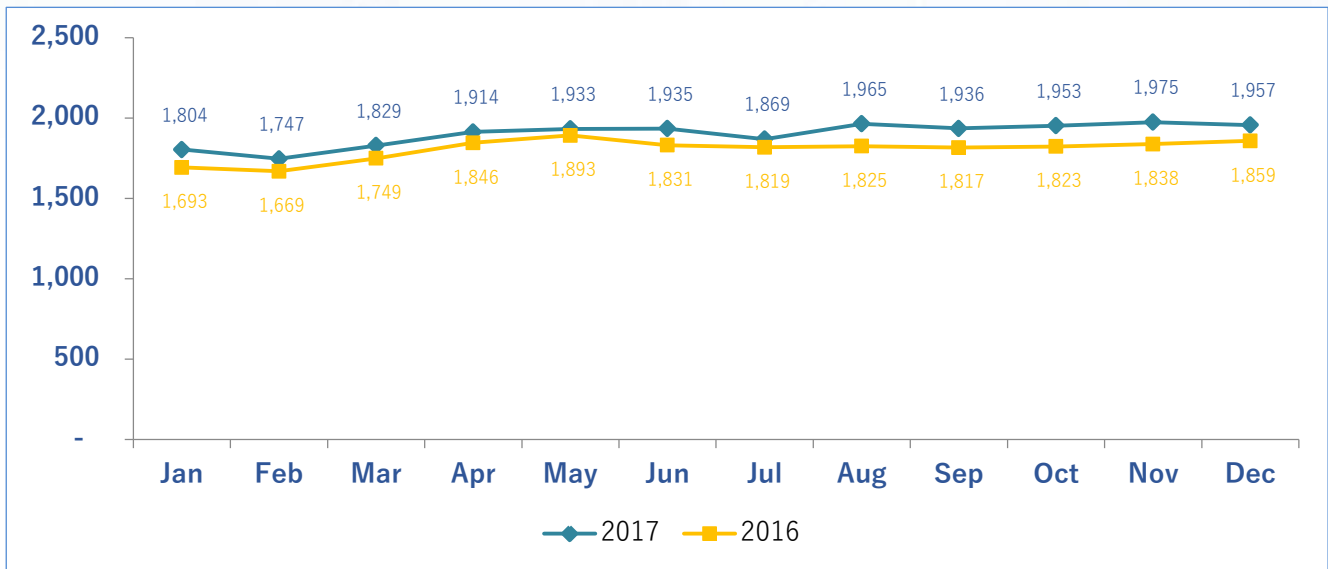


# 2017 LUZON POWER DEMAND-SUPPLY SITUATION



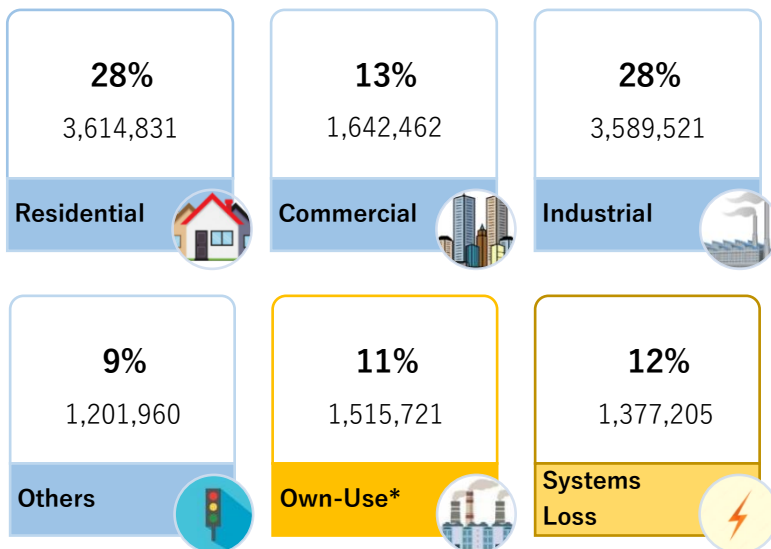
# VISAYAS

## Monthly Peak Demand (in MW)



Source: NGCP

## Electricity Sales and Consumption (in MWh)



- Among the three grids, the growth of electricity sales and consumption in Visayas was the highest at 5.8% from 12,231,839 MWh in 2016 to 12,941,701 MWh in 2017.
- This expansion is fueled by the growth of the residential and commercial sector which contributed 1.6 percentage points each to Visayas' overall growth rate.<sup>5</sup>
- Despite its small share (9%) to the total electricity consumption in the Visayas, the others sector posted the highest growth in 2017 at 12.8%. This acceleration is due to the improved economic performance of the Agriculture, Hunting, Forestry and Fishing (AHFF) sector in the region, particularly in the Western and Central Visayas.<sup>5</sup>

<sup>5</sup>Gross Domestic Product of the Philippines Highlights for 2017, Philippine Statistics Authority (PSA)

# VISAYAS

## Existing Installed, Dependable and Available Capacity, January-December 2017 (in MW)

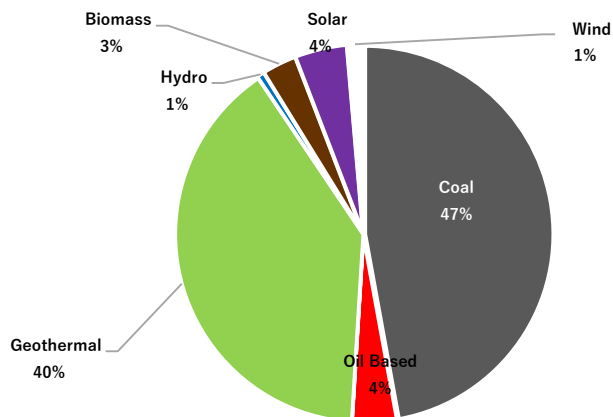
Fuel Type	Installed		Dependable		Available*	
	MW	Percent Share (%)	MW	Percent Share (%)	MW	Percent Share (%)
Coal	1,054	30.78	1,050	34.98	910	37.74
Oil Based	730	21.30	499	16.60	373	15.47
Natural Gas	1	0.03	0	0.00	0	0.00
Renewable Energy	1,641	47.88	1,454	48.42	1,128	46.79
<i>Geothermal</i>	965	28.16	870	28.96	682	28.29
<i>Hydro</i>	20	0.57	18	0.61	10	0.41
<i>Biomass</i>	101	2.96	84	2.78	52	2.16
<i>Solar</i>	465	13.57	392	13.07	352	14.60
<i>Wind</i>	90	2.63	90	3.00	32	1.33
<b>2017 TOTAL</b>	<b>3,426</b>	<b>100.00</b>	<b>3,002</b>	<b>100.00</b>	<b>2,411</b>	<b>100</b>
<b>2016 TOTAL **</b>	<b>3,284</b>		<b>2,813</b>		<b>2,288</b>	

\*Coincidental to the Peak Demand, grid only

\*\* Grid Only

## Gross Power Generation, January-December 2017

14,053,885 MWh



**106  
MW**

- Newly Operational Plants

**775  
MW**

- Committed Projects

**3,399  
MW**

- Indicative Projects



# VISAYAS

## Newly Operational Capacities, January-December 2017

Power Plant Facility Name	Capacity (MW)		Owner/ Operator
	Installed	Dependable	
<b>Diesel</b>	<b>40</b>	<b>32</b>	
Calumangan DPP U5	8	6	Central Negros Power Reliability, Inc. (CENPRI)
PB 104	32	26	SPC Power Corp. (Privatized from NPC/PSALM; transferred from Mindanao)
<b>Solar</b>	<b>66</b>	<b>54</b>	
Cosmo Solar	6	5	Cosmo Solar Energy, Inc.
First Toledo Solar	60	49	First Toledo Solar Energy Corporation (FTSEC)
<b>TOTAL</b>	<b>106</b>	<b>86</b>	

## Summary of Committed and Indicative Power Projects, as of 31 December 2017

Type of Power Plant	Committed			Indicative		
	No. of Proponents	Capacity (MW)	% Share	No. of Proponents	Capacity (MW)	% Share
<b>Coal</b>	<b>2</b>	<b>435</b>	<b>56.10</b>	<b>1</b>	<b>300</b>	<b>8.80</b>
<b>Oil-Based</b>	<b>1</b>	<b>8</b>	<b>1.00</b>	<b>4</b>	<b>96</b>	<b>2.80</b>
<b>Natural Gas</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>1</b>	<b>138</b>	<b>4.10</b>
<b>Renewable Energy</b>	<b>15</b>	<b>332</b>	<b>42.80</b>	<b>21</b>	<b>2,866</b>	<b>84.30</b>
<i>Geothermal</i>	<i>1</i>	<i>50</i>	<i>6.50</i>	<i>1</i>	<i>40</i>	<i>1.20</i>
<i>Hydro</i>	<i>3</i>	<i>103</i>	<i>13.30</i>	<i>3</i>	<i>622</i>	<i>18.30</i>
<i>Biomass</i>	<i>11</i>	<i>179</i>	<i>23.00</i>	<i>2</i>	<i>15</i>	<i>0.40</i>
<i>Solar</i>	<i>0</i>	<i>0</i>	<i>0.00</i>	<i>11</i>	<i>792</i>	<i>23.30</i>
<i>Wind</i>	<i>0</i>	<i>0</i>	<i>0.00</i>	<i>4</i>	<i>1,398</i>	<i>41.10</i>
<b>TOTAL</b>	<b>18</b>	<b>775</b>	<b>100.00</b>	<b>27</b>	<b>3,399</b>	<b>100.00</b>
Battery Storage*	0	0		3	130	

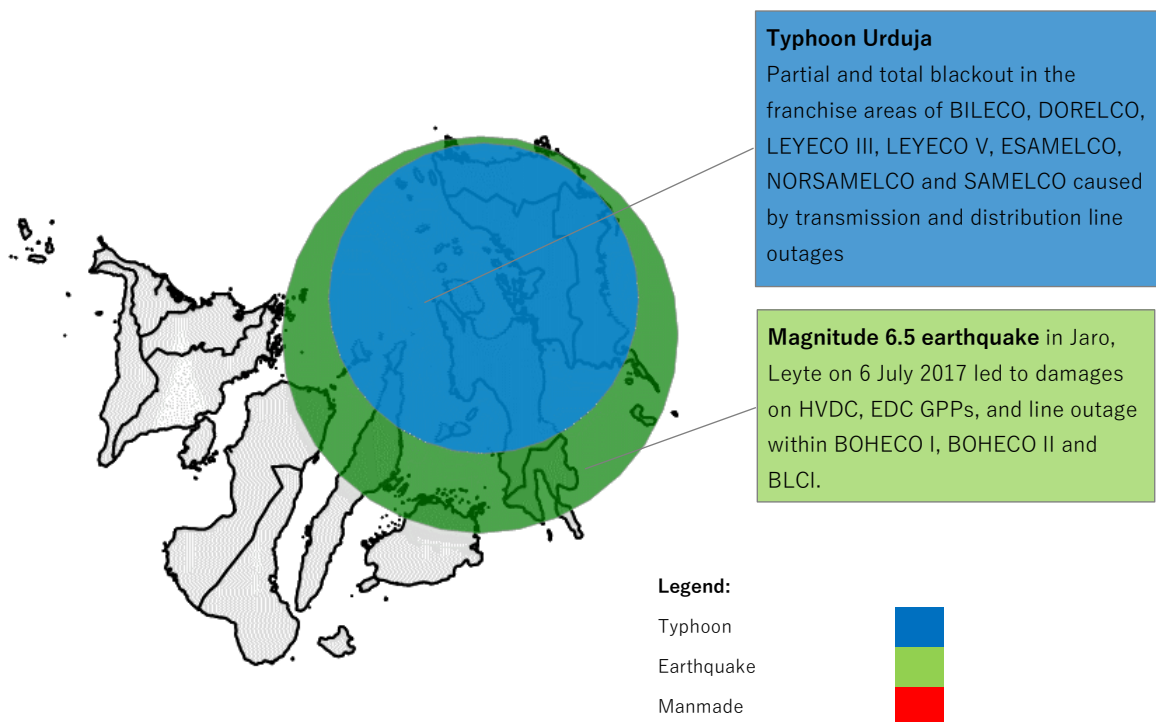
\* for accounting purposes; declared capacity for Ancillary Services (AS) to the system

# VISAYAS

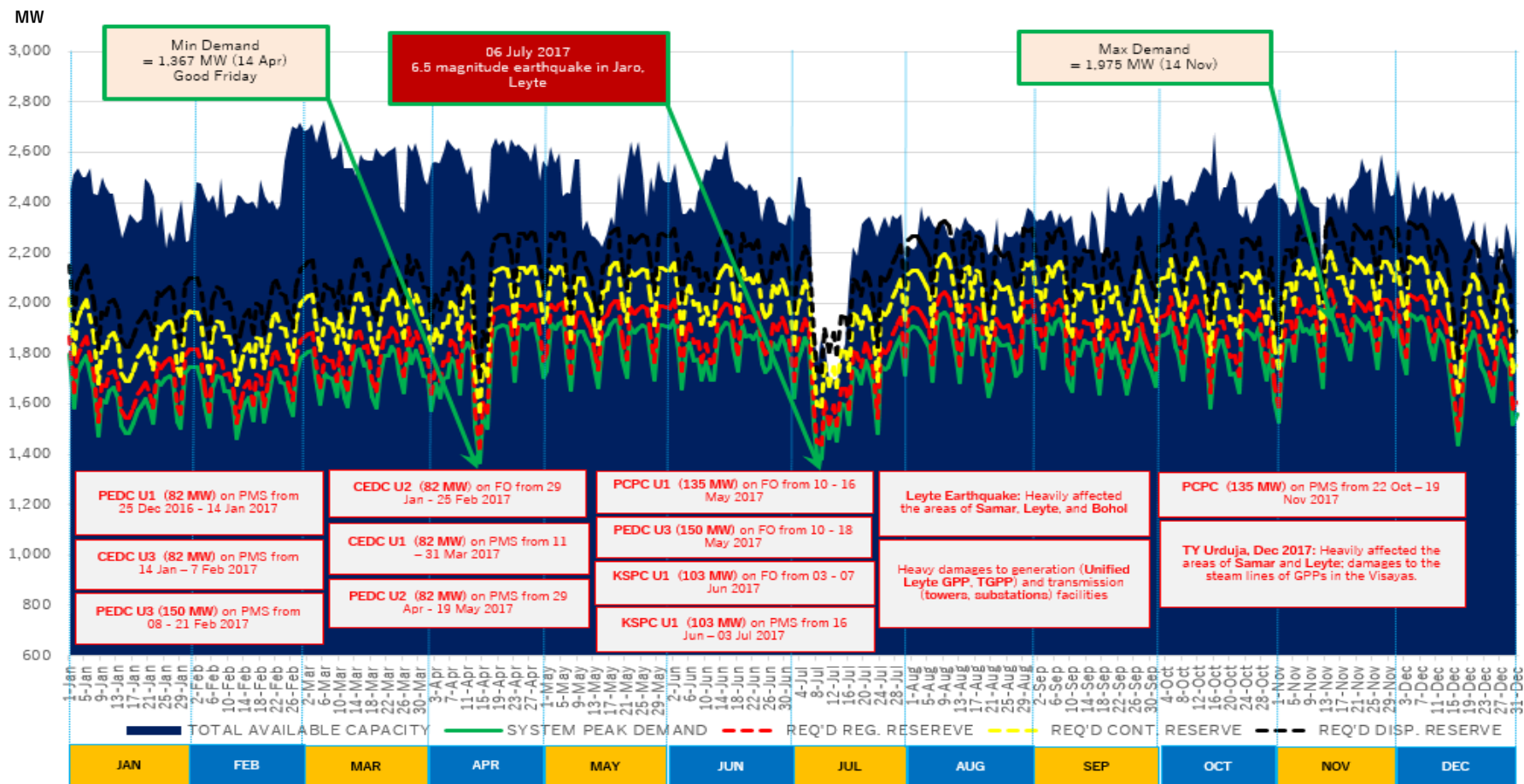
## Significant Grid Incidents

- For the first half of 2017, the power situation in the Visayas has been generally stable due to the additional capacities that went on commercial operation. There are some instances where the Visayas grid experienced tight supply conditions especially during the occurrence of simultaneous outages of large coal-fired and geothermal power plants.
- However, during the second half of the year, natural disasters struck the Visayas region that damaged critical power generation facilities, power lines and equipment especially in the areas of Samar-Leyte, Bohol, and Cebu.
  - The occurrence of the 6.5 magnitude earthquake in Jaro, Leyte affected and damaged geothermal power generation and transmission (HVDC, substations, towers, power lines) facilities that resulted to the total loss of power in the Provinces of Samar, Leyte, and Bohol.
  - Power was restored within the month of July in the affected areas but the various restoration activities of the damaged facilities were carried out for the remainder of the year.
  - Within the month of December, Typhoon Urduja heavily affected the Provinces of Samar and Leyte that caused damages to power lines and steam lines of geothermal power plants.
  - Restoration activities were carried out after the typhoon in order to repair the damages and restore the output of the geothermal power plants.

## Natural and Manmade Disasters

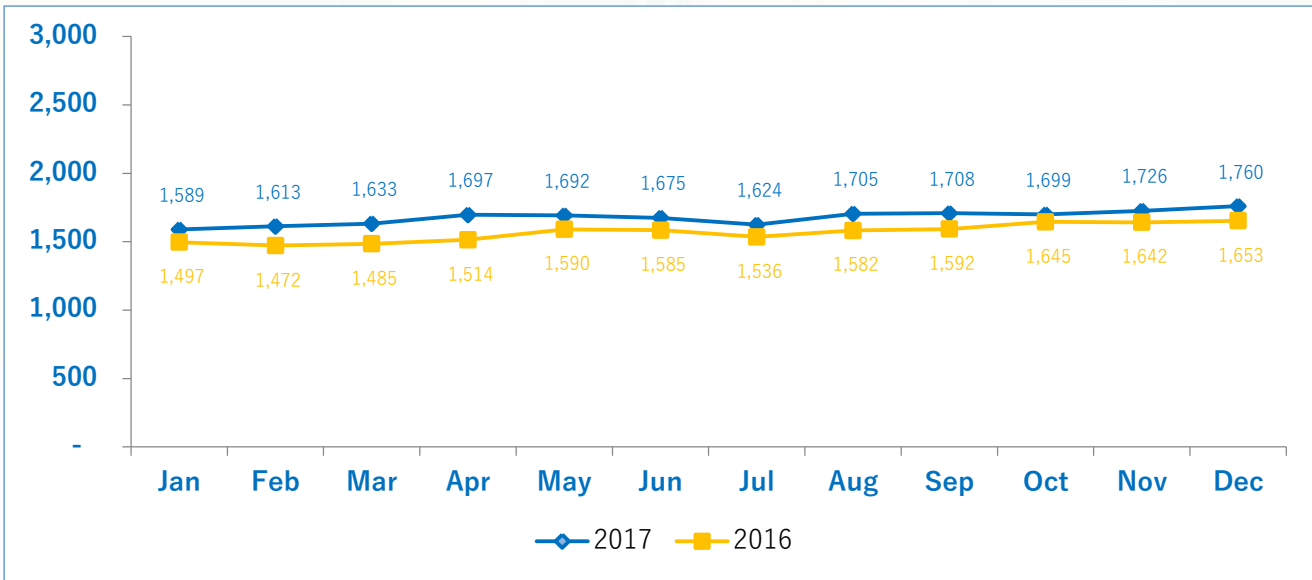


# 2017 VISAYAS POWER DEMAND-SUPPLY SITUATION



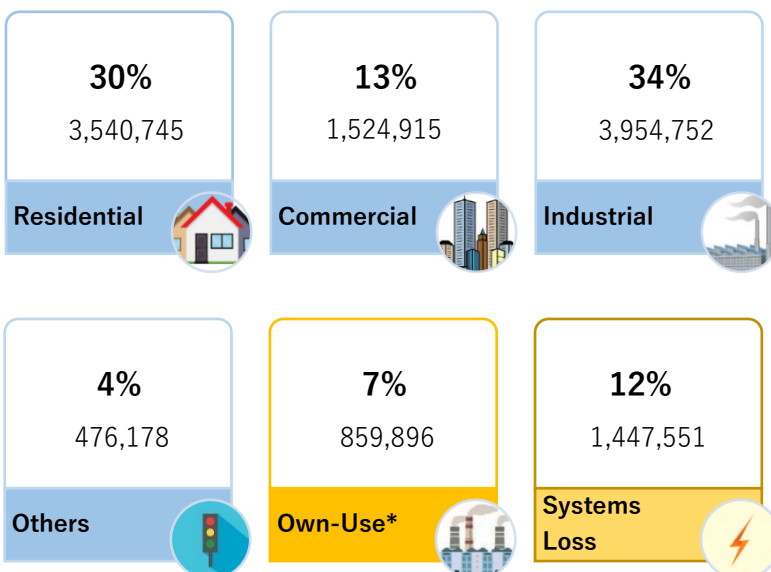
# MINDANAO

## Monthly Peak Demand (in MW)



Source: NGCP

## Electricity Sales and Consumption (in MWh)



- Electricity sales and consumption grew by 4.0% from 11,345,457 MWh in 2016 to 11,804,037 MWh in 2017.
- This growth is fueled by the substantial increase of industrial electricity consumption in Mindanao, specifically in Northern Mindanao, Davao, and SOCCSKSARGEN regions.<sup>6</sup>
- The industrial sector contributed 1.4% of the 4.0% overall growth rate of electricity consumption in Mindanao in 2017.

<sup>6</sup>Gross Domestic Product of the Philippines Highlights for 2017, Philippine Statistics Authority (PSA)



# MINDANAO

## Existing Installed, Dependable and Available Capacity, January-December 2017 (in MW)

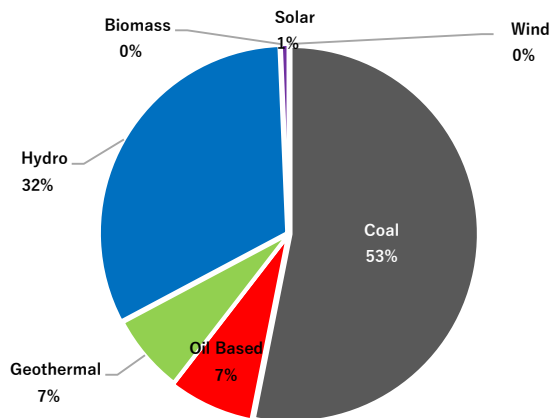
Fuel Type	Installed		Dependable		Available*	
	MW	Percent Share (%)	MW	Percent Share (%)	MW	Percent Share (%)
Coal	1,370	38.49	1,220	39.58	1,088	45.84
Oil Based	906	25.45	811	26.30	494	20.82
Natural Gas	0	0.00	0	0.00	0	0.00
Renewable Energy	1,283	36.06	1,052	34.12	791	33.34
<i>Geothermal</i>	108	3.05	100	3.24	99	4.17
<i>Hydro</i>	1,080	30.35	899	29.17	692	29.15
<i>Biomass</i>	36	1.01	10	0.32	0	0.00
<i>Solar</i>	59	1.65	43	1.38	0	0.01
<i>Wind</i>	0	0.00	0	0.00	0	0.00
<b>2017 TOTAL</b>	<b>3,559</b>	<b>100.00</b>	<b>3,083</b>	<b>100.00</b>	<b>2,373</b>	<b>100.00</b>
<b>2016 TOTAL**</b>	<b>3,162</b>		<b>2,684</b>		<b>1,642</b>	

\*Coincidental to the Peak Demand, grid only

\*\*Grid only

## Gross Power Generation, January-December 2017

11,804,037 MWh



**337  
MW**

- Newly Operational Plants

**1,332  
MW**

- Committed Projects

**1,981  
MW**

- Indicative Projects

# MINDANAO

## Newly Operational Capacities, January-December 2017

Power Plant Facility Name	Capacity (MW)		Owner/ Operator
	Installed	Dependable	
<b>Coal</b>	<b>300</b>	<b>270</b>	
FDC Misamis U3	135	120	FDC Utilities, Inc.
MPC Balingasag U1	55	50	Minergy Power Corporation
MPC Balingasag U2	55	50	
MPC Balingasag U3	55	50	
<b>Diesel</b>	<b>37</b>	<b>35</b>	
NAC DPP	11	8	Nickel Asia Corporation (NAC)
PACERM-1	11	11	PACERM-1 Energy Corporation
ZAMCELCO DPP	16	16	ZAMCELCO
<b>TOTAL</b>	<b>337</b>	<b>305</b>	

## Summary of Committed and Indicative Power Projects, as of 31 December 2017

Type of Power Plant	Committed			Indicative		
	No. of Proponents	Capacity (MW)	% Share	No. of Proponents	Capacity (MW)	% Share
<b>Coal</b>	<b>2</b>	<b>700</b>	<b>52.50</b>	<b>4</b>	<b>1,138</b>	<b>57.50</b>
<b>Oil-Based</b>	<b>4</b>	<b>30</b>	<b>2.20</b>	<b>4</b>	<b>45</b>	<b>2.30</b>
<b>Natural Gas</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0.00</b>
<b>Renewable Energy</b>	<b>22</b>	<b>603</b>	<b>45.20</b>	<b>21</b>	<b>797</b>	<b>40.30</b>
<i>Geothermal</i>	<i>0</i>	<i>0</i>	<i>0.00</i>	<i>1</i>	<i>30</i>	<i>1.50</i>
<i>Hydro</i>	<i>19</i>	<i>591</i>	<i>44.30</i>	<i>5</i>	<i>268</i>	<i>13.50</i>
<i>Biomass</i>	<i>3</i>	<i>12</i>	<i>0.90</i>	<i>6</i>	<i>89</i>	<i>4.50</i>
<i>Solar</i>	<i>0</i>	<i>0</i>	<i>0.00</i>	<i>9</i>	<i>410</i>	<i>20.70</i>
<i>Wind</i>	<i>0</i>	<i>0</i>	<i>0.00</i>	<i>0</i>	<i>0</i>	<i>0.00</i>
<b>TOTAL</b>	<b>28</b>	<b>1,332</b>	<b>100.00</b>	<b>29</b>	<b>1,981</b>	<b>100.00</b>

# MINDANAO

## Significant Grid Incidents

- On 04 May 2017 (1250H), Zamboanga Peninsula was on total blackout due to the tripping of the Baloi-Aurora 138 kV Line. Agus 5 – Aurora 138 kV line which also serves the Zamboanga Peninsula was also on outage due to a line to line fault. System was restored on the same day at 1700H.
- On 14 May 2017 (2122H), Zamboanga Peninsula was on partial blackout due to the tripping of Agus 5 – Aurora 138 kV Line and Baloi – Aurora 138 kV Line.
- On 25 May 2017 (1750H), Agus 2 – Agus 1 138 kV Tie Line tripped which resulted to the isolation of both Agus 1 HEP and Agus 1 Substation rendering Marawi City without power.
- On 1 October 2017, South Eastern Mindanao Area (SEMA) was on partial system blackout due to the tripping of Davao – Toril 138 kV Lines 1 and 2 and Kibawe – Tacurong line at 2204H. At 2230H, Red Alert Status was declared for the Mindanao Grid.
- On 23 May 2017, the Marawi Siege started which resulted to the multiple and partial blackout of the franchise area of LASURECO.

## Natural and Manmade Disasters

### Typhoon Vinta

Partial and total blackout in the franchise areas of LASURECO, SURSECO II, DANECO, LANECO ZAMCELCO, ZAMSURECO II, ASELCO, MORESCO I and PALECO caused by transmission and distribution line outages, and toppled structures

The **6.7 magnitude earthquake** which occurred on 10 February and its 5.9 magnitude aftershock which occurred on 05 March 2017 caused minimal damages to the distribution lines and facilities in the SURNECO

### Typhoon Auring

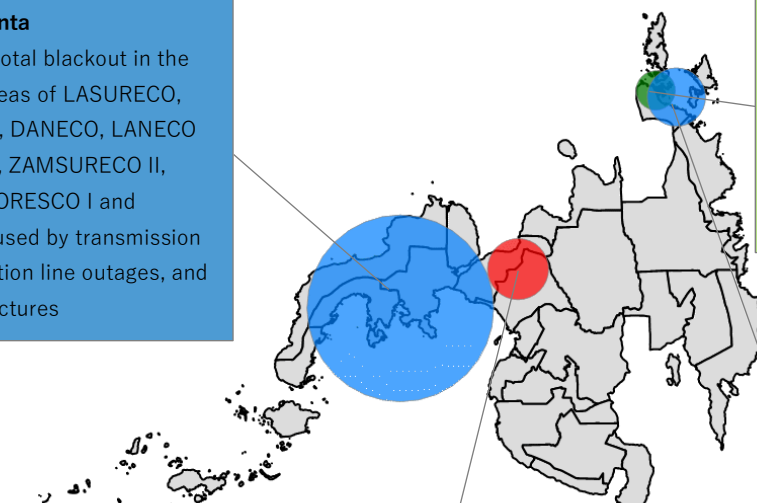
Partial and total blackout in the franchise areas of SURNECO, SIARELCO, SURSECO II, DIELECO, SOLECO caused by DL outages and toppled structures

### Marawi Siege (23 May 2017)

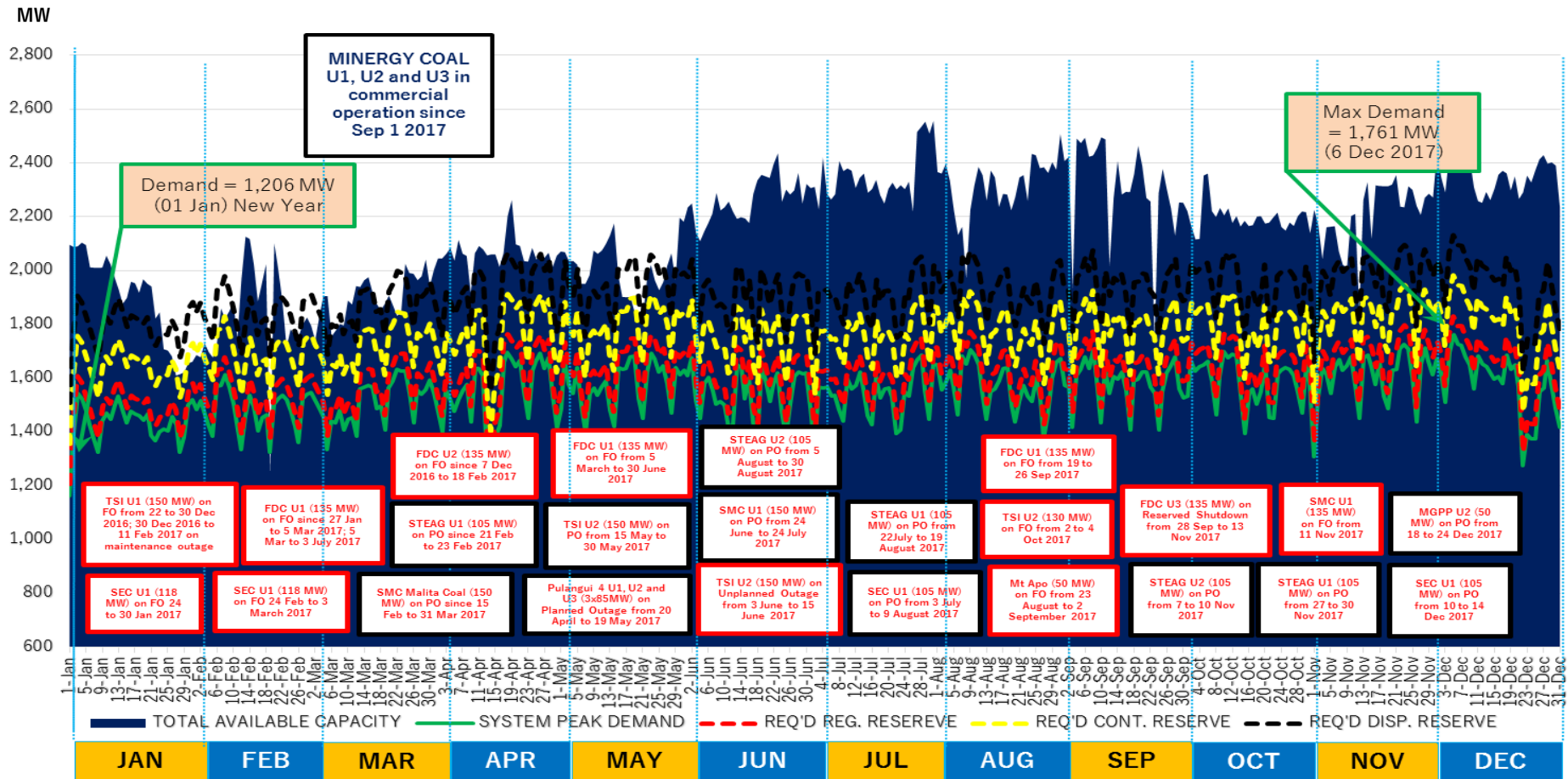
Multiple partial and total blackout in the franchise area of LASURECO and tripping of transmission lines within Marawi City

#### Legend:

Typhoon  
Earthquake  
Manmade



# 2017 MINDANAO POWER DEMAND-SUPPLY SITUATION





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## **Annexes**

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### Annex 1. Philippine Historical Electricity Consumption and Peak Demand to GDP Elasticity, 2004-2017

YEAR	Electricity Sales (MWh)	Electricity Sales Growth Rate (%)	Electricity Consumption (MWh)	Electricity Consumption Growth Rate (%)	Peak Demand (MW)	Peak Demand Growth Rate (%)	GDP (2000=100) Million Pesos	GDP Growth Rate (%)	Electricity Sales to GDP Elasticity	Electricity Consumption to GDP Elasticity	Peak Demand to GDP Elasticity
2004	44,075,958		55,957,430		8,525		4,276,941				
2005	45,159,402	2.46	56,567,741	1.1	8,629	1.2	4,481,279	4.8	0.5	0.2	0.3
2006	45,672,173	1.14	56,784,130	0.4	8,760	1.5	4,716,231	5.2	0.2	0.1	0.3
2007	48,009,038	5.12	59,611,788	5.0	8,987	2.6	5,028,288	6.6	0.8	0.8	0.4
2008	49,206,114	2.49	60,820,985	2.0	9,054	0.7	5,237,099	4.2	0.6	0.5	0.2
2009	50,867,842	3.38	61,934,432	1.8	9,472	4.6	5,297,240	1.1	2.9	1.6	4.0
2010	55,265,769	8.65	67,742,759	9.4	10,375	9.5	5,701,539	7.6	1.1	1.2	1.2
2011	56,097,592	1.51	69,175,650	2.1	10,379	0.0	5,910,201	3.7	0.4	0.6	0.0
2012	59,210,619	5.55	72,922,011	5.4	10,761	3.7	6,305,229	6.7	0.8	0.8	0.6
2013	61,565,612	3.98	75,265,842	3.2	11,305	5.1	6,750,631	7.1	0.6	0.5	0.7
2014	63,344,784	2.89	77,260,997	2.7	11,822	4.6	7,170,414	6.2	0.5	0.4	0.7
2015	67,807,747	7.05	82,413,213	6.7	12,213	3.3	7,600,175	6.0	1.2	1.1	0.6
2016	74,154,224	9.36	90,797,891	10.2	13,272	8.7	8,122,741	6.9	1.4	1.5	1.3
2017	77,792,810	4.91	94,370,341	3.9	13,789	3.9	8,665,708	6.7	0.7	0.6	0.6

## Annex 2. Luzon Historical Electricity Consumption and Peak Demand to GRDP Elasticity, 2004-2017

YEAR	Electricity Sales (MWh)	Electricity Sales Growth Rate (%)	Electricity Consumption (MWh)	Electricity Consumption Growth Rate (%)	Peak Demand (MW)	Peak Demand Growth Rate (%)	GDP (2000=100) Million Pesos	GDP Growth Rate (%)	Electricity Sales to GDP Elasticity	Electricity Consumption to GDP Elasticity	Peak Demand to GDP Elasticity
2004	33,024,680		42,389,644		6,323	2.8	3,110,292				
2005	33,791,038	2.3	42,562,730	0.4	6,443	1.9	3,265,801	5.0	0.5	0.1	0.4
2006	33,941,398	0.4	42,424,421	(0.3)	6,466	0.4	3,435,661	5.2	0.1	(0.1)	0.1
2007	35,434,885	4.4	44,339,741	4.5	6,643	2.7	3,663,711	6.6	0.7	0.7	0.4
2008	36,615,419	3.3	45,316,792	2.2	6,674	0.5	3,814,637	4.1	0.8	0.5	0.1
2009	37,859,434	3.4	45,635,225	0.7	6,928	3.8	3,861,247	1.2	2.8	0.6	3.1
2010	41,388,794	9.3	50,322,077	10.3	7,656	10.5	4,174,036	8.1	1.2	1.3	1.3
2011	41,706,246	0.8	50,964,688	1.3	7,552	(1.4)	4,308,393	3.2	0.2	0.4	(0.4)
2012	44,063,677	5.7	53,723,136	5.4	7,889	4.5	4,598,670	6.7	0.8	0.8	0.7
2013	45,803,175	3.9	55,735,785	3.7	8,305	5.3	4,942,077	7.5	0.5	0.5	0.7
2014	47,240,505	3.1	57,488,739	3.1	8,717	5.0	5,246,187	6.2	0.5	0.5	0.8
2015	50,589,323	7.1	61,099,345	6.3	8,928	2.4	5,562,372	6.0	1.2	1.0	0.4
2016	55,413,149	9.5	67,220,596	10.0	9,726	8.9	5,937,278	6.7	1.4	1.5	1.3
2017	58,247,445	5.1	69,624,603	3.6	10,054	3.4	6,339,714	6.8	0.8	0.5	0.5

### Annex 3. Visayas Historical Electricity Consumption and Peak Demand to GRDP Elasticity, 2004-2017

YEAR	Electricity Sales (MWh)	Electricity Sales Growth Rate (%)	Electricity Consumption (MWh)	Electricity Consumption Growth Rate (%)	Peak Demand (MW)	Peak Demand Growth Rate (%)	GDP (2000=100) Million Pesos	GDP Growth Rate (%)	Electricity Sales to GDP Elasticity	Electricity Consumption to GDP Elasticity	Peak Demand to GDP Elasticity
2004	5,031,776		6,480,696		1,025		549,003				
2005	5,284,359	5.02	6,762,352	4.3	1,037	1.2	574,164	4.6	1.1	0.9	0.3
2006	5,551,408	5.05	6,945,759	2.7	1,066	2.8	602,538	4.9	1.0	0.5	0.6
2007	6,017,151	8.39	7,381,763	6.3	1,102	3.4	639,203	6.1	1.4	1.0	0.6
2008	5,961,193	(0.93)	7,532,437	2.0	1,176	6.7	666,315	4.2	(0.2)	0.5	1.6
2009	6,309,113	5.84	8,063,929	7.1	1,241	5.5	665,784	(0.1)	(73.2)	(88.6)	(69.3)
2010	7,036,059	11.52	9,017,913	11.8	1,431	15.3	718,742	8.0	1.4	1.5	1.9
2011	7,224,369	2.68	9,508,314	5.4	1,481	3.5	759,128	5.6	0.5	1.0	0.6
2012	7,646,701	5.85	10,072,003	5.9	1,551	4.7	799,533	5.3	1.1	1.1	0.9
2013	7,867,617	2.89	10,183,326	1.1	1,572	1.4	844,313	5.6	0.5	0.2	0.2
2014	8,039,020	2.18	10,291,667	1.1	1,636	4.0	888,023	5.2	0.4	0.2	0.8
2015	8,765,247	9.03	11,184,002	8.7	1,768	8.1	941,627	6.0	1.5	1.4	1.3
2016	9,598,851	9.51	12,231,839	9.4	1,893	7.1	1,019,743	8.3	1.1	1.1	0.9
2017	10,048,775	4.69	12,941,701	5.8	1,975	4.3	1,076,671	5.6	0.8	1.0	0.8



#### Annex 4. Mindanao Historical Electricity Consumption and Peak Demand to GRDP Elasticity, 2004-2017

YEAR	Electricity Sales (MWh)	Electricity Sales Growth Rate (%)	Electricity Consumption (MWh)	Electricity Consumption Growth Rate (%)	Peak Demand (MW)	Peak Demand Growth Rate (%)	GDP (2000=100) Million Pesos	GDP Growth Rate (%)	Electricity Sales to GDP Elasticity	Electricity Consumption to GDP Elasticity	Peak Demand to GDP Elasticity
2004	6,019,502		7,087,090		1,177		617,646				
2005	6,084,005	1.07	7,242,659	2.2	1,149	(2.4)	641,314	3.8	0.3	0.6	(0.6)
2006	6,179,367	1.57	7,413,949	2.4	1,228	6.9	678,031	5.7	0.3	0.4	1.2
2007	6,557,002	6.11	7,890,283	6.4	1,241	1.1	725,374	7.0	0.9	0.9	0.2
2008	6,629,502	1.11	7,971,756	1.0	1,204	(3.0)	756,147	4.2	0.3	0.2	(0.7)
2009	6,699,295	1.05	8,235,278	3.3	1,303	8.3	770,209	1.9	0.6	1.8	4.4
2010	6,840,916	2.11	8,402,769	2.0	1,288	(1.2)	808,762	5.0	0.4	0.4	(0.2)
2011	7,166,977	4.77	8,702,648	3.6	1,346	4.5	842,680	4.2	1.1	0.9	1.1
2012	7,500,241	4.65	9,126,871	4.9	1,321	(1.9)	907,026	7.6	0.6	0.6	(0.2)
2013	7,894,820	5.26	9,346,731	2.4	1,428	8.1	964,241	6.3	0.8	0.4	1.3
2014	8,065,259	2.16	9,480,592	1.4	1,469	2.9	1,036,204	7.5	0.3	0.2	0.4
2015	8,453,177	4.81	10,129,866	6.8	1,517	3.3	1,096,176	5.8	0.8	1.2	0.6
2016	9,142,225	8.15	11,345,457	12.0	1,653	9.0	1,165,721	6.3	1.3	1.9	1.4
2017	9,496,590	3.88	11,804,037	4.0	1,760	6.5	1,249,323	7.2	0.5	0.6	0.9

**Annex 5. Electricity Sales and Consumption by Sector, 2004-2017 (in GWh)**

<b>Philippines</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<i>Residential</i>	15,920	16,031	15,830	16,376	16,644	17,504	18,833	18,694	19,695	20,614	20,969	22,747	25,631	26,782
<i>Commercial</i>	11,785	12,245	12,679	13,470	14,136	14,756	16,261	16,624	17,777	18,304	18,761	20,085	21,770	22,768
<i>Industrial</i>	15,012	15,705	15,888	16,522	17,031	17,084	18,576	19,334	20,071	20,677	21,429	22,514	24,117	25,573
<i>Others</i>	1,359	1,177	1,275	1,641	1,395	1,523	1,596	1,446	1,668	1,971	2,186	2,462	2,634	2,670
Total Sales	44,076	45,159	45,672	48,009	49,206	50,868	55,266	56,098	59,211	61,566	63,345	67,808	74,153	77,793
Own-Use	4,654	4,591	4,227	3,994	3,935	3,524	4,677	5,398	5,351	5,959	6,461	7,124	8,357	8,316
System Loss	7,228	6,817	6,885	7,608	7,680	7,542	7,800	7,680	8,360	7,741	7,455	7,481	8,288	8,262
<b>Total Consumption</b>	<b>55,957</b>	<b>56,568</b>	<b>56,784</b>	<b>59,612</b>	<b>60,821</b>	<b>61,934</b>	<b>67,743</b>	<b>69,176</b>	<b>72,922</b>	<b>75,266</b>	<b>77,261</b>	<b>82,413</b>	<b>90,798</b>	<b>94,370</b>

## Annex 6. Electricity Sales and Consumption by Sector, per Grid, 2004-2017 (in GWh)

<b>Luzon</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<i>Residential</i>	12,115	12,038	11,802	12,129	12,236	12,801	13,865	13,558	14,262	15,056	15,304	16,528	18,650	19,626
<i>Commercial</i>	10,138	10,495	10,865	11,503	12,066	12,519	13,684	13,975	14,905	15,510	16,103	17,272	18,727	19,601
<i>Industrial</i>	10,149	10,670	10,563	11,034	11,522	11,745	13,030	13,394	14,086	14,379	14,939	15,876	17,094	18,029
<i>Others</i>	623	589	712	768	792	794	809	779	810	859	895	913	942	991
Total Sales	33,025	33,791	33,941	35,435	36,615	37,859	41,389	41,706	44,064	45,803	47,241	50,589	55,413	58,247
Own-Use	3,856	3,738	3,444	3,141	3,069	2,666	3,729	4,114	3,952	4,550	5,040	5,598	6,518	5,940
System Loss	5,509	5,033	5,039	5,764	5,632	5,110	5,204	5,145	5,707	5,383	5,208	4,912	5,290	5,437
<b>Total Consumption</b>	<b>42,390</b>	<b>42,563</b>	<b>42,424</b>	<b>44,340</b>	<b>45,317</b>	<b>45,635</b>	<b>50,322</b>	<b>50,965</b>	<b>53,723</b>	<b>55,736</b>	<b>57,489</b>	<b>61,099</b>	<b>67,221</b>	<b>69,625</b>
<b>Visayas</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<i>Residential</i>	1,873	1,999	2,036	2,157	2,208	2,341	2,523	2,527	2,668	2,735	2,770	3,068	3,508	3,615
<i>Commercial</i>	783	861	910	1,003	1,044	1,094	1,312	1,324	1,426	1,446	1,302	1,418	1,555	1,642
<i>Industrial</i>	1,999	2,104	2,340	2,402	2,416	2,562	2,770	3,038	3,032	3,137	3,214	3,268	3,470	3,590
<i>Others</i>	377	320	265	455	293	313	431	336	521	550	753	1,011	1,065	1,202
Total Sales	5,032	5,284	5,551	6,017	5,961	6,309	7,036	7,224	7,647	7,868	8,039	8,765	9,599	10,049
Own-Use	661	679	606	574	589	565	665	996	1,092	1,055	1,049	1,131	1,189	1,516
System Loss	788	799	788	790	982	1,190	1,317	1,288	1,333	1,260	1,204	1,288	1,444	1,377
<b>Total Consumption</b>	<b>6,481</b>	<b>6,762</b>	<b>6,946</b>	<b>7,382</b>	<b>7,532</b>	<b>8,064</b>	<b>9,018</b>	<b>9,508</b>	<b>10,072</b>	<b>10,183</b>	<b>10,292</b>	<b>11,184</b>	<b>12,232</b>	<b>12,942</b>
<b>Mindanao</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<i>Residential</i>	1,933	1,995	1,992	2,089	2,200	2,362	2,445	2,609	2,765	2,823	2,895	3,151	3,473	3,541
<i>Commercial</i>	864	889	904	964	1,026	1,143	1,265	1,324	1,446	1,348	1,357	1,394	1,488	1,525
<i>Industrial</i>	2,864	2,931	2,985	3,086	3,092	2,778	2,776	2,902	2,954	3,161	3,275	3,370	3,552	3,955
<i>Others</i>	359	269	298	418	311	417	356	332	336	563	538	538	627	476
Total Sales	6,020	6,084	6,179	6,557	6,630	6,699	6,841	7,167	7,500	7,895	8,065	8,453	9,141	9,497
Own-Use	137	173	178	279	277	293	282	289	306	355	372	395	651	860
System Loss	931	985	1,057	1,054	1,065	1,243	1,280	1,247	1,320	1,097	1,044	1,281	1,554	1,448
<b>Total Consumption</b>	<b>7,087</b>	<b>7,243</b>	<b>7,414</b>	<b>7,890</b>	<b>7,972</b>	<b>8,235</b>	<b>8,403</b>	<b>8,703</b>	<b>9,127</b>	<b>9,347</b>	<b>9,481</b>	<b>10,130</b>	<b>11,345</b>	<b>11,804</b>

### Annex 7. Annual System Peak Demand per Grid, 1985-2017 (in MW)

Year	Luzon	% AAGR	Visayas	% AAGR	Mindanao	% AAGR	Total Non-Coincident Peak (Max)	% AAGR
1985	2,311		256		470		3,037	
1986	2,435	5.4	284	10.9	484	3.0	3,203	5.5
1987	2,592	6.4	307	8.1	533	10.1	3,432	7.1
1988	2,780	7.3	333	8.5	571	7.1	3,684	7.3
1989	2,938	5.7	354	6.3	617	8.1	3,909	6.1
1990	2,973	1.2	380	7.3	621	0.6	3,974	1.7
1991	3,045	2.4	410	7.9	626	0.8	4,081	2.7
1992	3,250	6.7	472	15.1	573	(8.5)	4,295	5.2
1993	3,473	6.9	512	8.5	691	20.6	4,676	8.9
1994	3,561	2.5	557	8.8	696	0.7	4,814	3.0
1995	3,920	10.1	628	12.7	780	12.1	5,328	10.7
1996	4,306	9.8	647	3.0	828	6.2	5,781	8.5
1997	4,773	10.8	725	12.1	852	2.9	6,350	9.8
1998	4,863	1.9	707	(2.5)	868	1.9	6,438	1.4
1999	4,986	2.5	729	3.1	892	2.8	6,607	2.6
2000	5,450	9.3	749	2.7	939	5.3	7,138	8.0
2001	5,646	3.6	898	19.9	953	1.5	7,497	5.0
2002	5,823	3.1	903	0.6	995	4.4	7,721	3.0
2003	6,149	5.6	995	10.2	1,131	13.7	8,275	7.2
2004	6,323	2.8	1,025	3.0	1,177	4.1	8,525	3.0
2005	6,443	1.9	1,037	1.2	1,149	(2.4)	8,629	1.2
2006	6,466	0.4	1,066	2.8	1,228	6.9	8,760	1.5
2007	6,643	2.7	1,102	3.4	1,241	1.1	8,987	2.6
2008	6,674	0.5	1,176	6.7	1,204	(3.0)	9,054	0.7
2009	6,928	3.8	1,241	5.5	1,303	8.3	9,472	4.6
2010	7,656	10.5	1,431	15.3	1,288	(1.2)	10,375	9.5
2011	7,552	(1.4)	1,481	3.5	1,346	4.5	10,379	0.0
2012	7,889	4.5	1,551	4.7	1,321	(1.9)	10,761	3.7
2013	8,305	5.3	1,572	1.4	1,428	8.1	11,305	5.1
2014	8,717	5.0	1,636	4.1	1,469	2.9	11,822	4.6
2015	8,928	2.4	1,768	8.1	1,517	3.3	12,213	3.3
2016	9,726	8.9	1,893	7.1	1,653	9.0	13,272	8.7
2017	10,054	3.4	1,975	4.3	1,760	6.5	13,789	3.9

### Annex 8. Visayas Annual System Peak Demand per Sub-Grid, 1995-2017 (in MW)

Year	CEBU	% AAGR	NEGROS	% AAGR	PANAY	% AAGR	LEYTE-SAMAR	% AAGR	BOHOL	% AAGR	TOTAL VISAYAS	% AAGR
1995	248		113		88		116		21		586	
1996	272	9.73	127	12.61	95	7.03	116	0.30	22	5.69	632	7.87
1997	291	7.10	141	10.66	114	20.76	152	30.41	24	7.17	722	14.15
1998	297	2.06	136	(3.70)	114	(0.47)	127	(15.96)	28	15.90	702	(2.79)
1999	333	12.16	152	12.03	81	(28.65)	126	(1.10)	30	8.66	722	2.97
2000	353	6.04	156	2.45	84	3.45	122	(3.25)	32	4.98	746	3.33
2001	377	6.65	151	(2.78)	146	73.92	156	28.09	31	(3.39)	861	15.33
2002	349	(7.40)	178	17.45	113	(22.39)	162	3.91	40	30.88	842	(2.16)
2003	422	20.97	179	0.94	105	(7.61)	175	7.93	41	3.28	923	9.54
2004	417	(1.14)	199	10.86	122	16.68	167	(4.52)	49	18.73	955	3.46
2005	438	4.94	195	(2.03)	120	(1.91)	168	0.65	46	(6.33)	967	1.28
2006	458	4.68	199	1.87	123	2.64	171	1.43	46	0.44	997	3.09
2007	477	4.12	209	5.11	182	48.20	186	8.76	49	5.42	1,102	10.61
2008	522	9.39	218	4.30	203	11.49	182	(2.21)	52	6.17	1,176	6.68
2009	559	7.07	215	(1.13)	223	9.91	188	3.49	56	7.77	1,241	5.52
2010	674	20.56	263	22.29	243	8.68	204	8.33	48	(14.21)	1,431	15.31
2011	704	4.44	245	(6.75)	260	7.25	209	2.81	62	30.83	1,481	3.50
2012	747	6.20	256	4.45	262	0.48	221	5.65	65	3.42	1,551	4.71
2013	780	4.41	253	(1.40)	272	3.82	199	(10.08)	63	(2.25)	1,567	1.01
2014	862	10.45	266	5.38	264	(2.72)	181	(8.74)	62	(2.23)	1,636	4.40
2015	850	(1.34)	309	15.92	309	16.84	230	26.54	70	14.18	1,768	8.09
2016	936	10.09	316	2.17	331	7.12	241	4.96	69	(1.69)	1,893	7.05
2017	976	4.29	331	5.05	385	16.25	270	12.08	84	21.94	2,047	8.15



### Annex 9. Luzon Monthly System Peak Demand, 2004-2017 (in MW)

MONTH	LUZON													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
JAN	5,511	5,471	5,619	5,819	5,972	6,118	6,407	6,594	7,027	7,079	7,121	7,315	8,175	8,249
FEB	5,701	5,853	5,776	6,115	6,094	6,452	6,878	6,877	7,162	7,214	7,545	7,610	8,229	8,668
MAR	6,065	6,210	6,186	6,157	6,211	6,642	7,057	7,006	7,503	7,720	7,655	7,878	8,806	9,459
APR	6,218	6,266	6,222	6,581	6,663	6,845	7,305	7,056	7,885	8,178	8,267	8,727	9,586	9,831
MAY	<b>6,323</b>	<b>6,443</b>	<b>6,466</b>	<b>6,643</b>	6,485	6,829	7,656	7,538	<b>7,889</b>	<b>8,305</b>	<b>8,717</b>	<b>8,928</b>	<b>9,726</b>	<b>10,054</b>
JUN	5,978	6,348	6,339	6,619	<b>6,674</b>	<b>6,928</b>	<b>7,646</b>	<b>7,552</b>	7,709	8,208	8,607	8,881	9,507	10,000
JUL	6,061	6,039	6,221	6,464	6,559	6,848	7,240	7,438	7,574	8,030	8,265	8,826	9,339	9,588
AUG	5,906	6,107	6,094	6,369	6,403	6,863	7,009	7,200	7,242	7,755	8,230	8,889	9,379	9,957
SEP	6,097	5,998	6,195	6,416	6,496	6,873	7,057	7,107	7,293	7,966	8,005	8,738	9,082	9,806
OCT	5,916	5,843	5,845	6,155	6,627	6,530	7,074	7,255	7,421	7,564	7,993	8,624	9,005	9,483
NOV	5,987	5,889	5,974	6,137	6,492	6,662	6,851	7,223	7,425	7,488	8,033	8,498	8,900	9,590
DEC	5,900	5,910	5,813	6,195	6,376	6,575	6,946	7,178	7,395	7,670	7,996	8,487	8,774	9,441
<b>MAX</b>	<b>6,323</b>	<b>6,443</b>	<b>6,466</b>	<b>6,643</b>	<b>6,674</b>	<b>6,928</b>	<b>7,656</b>	<b>7,552</b>	<b>7,889</b>	<b>8,305</b>	<b>8,717</b>	<b>8,928</b>	<b>9,726</b>	<b>10,054</b>

### Annex 10. Visayas Monthly System Peak Demand, 2004-2017 (in MW)

MONTH	VISAYAS													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
JAN	866	890	906	946	1,067	1,122	1,219	1,324	1,391	1,463	1,331	1,476	1,693	1,804
FEB	839	892	929	969	1,069	1,159	1,199	1,356	1,386	1,446	1,362	1,479	1,669	1,747
MAR	878	899	949	972	1,092	1,166	1,254	1,370	1,370	1,528	1,411	1,528	1,749	1,829
APR	889	916	964	1,007	1,112	1,193	1,308	1,431	1,447	1,548	1,499	1,630	1,846	1,914
MAY	896	928	968	1,015	1,090	1,204	1,364	1,405	1,464	<b>1,572</b>	1,606	1,618	<b>1,893</b>	1,933
JUN	857	926	961	1,078	1,089	1,204	1,344	1,399	1,449	1,555	<b>1,636</b>	1,562	1,831	1,935
JUL	880	931	977	1,090	1,105	1,201	1,323	1,398	1,440	1,543	1,511	1,584	1,819	1,869
AUG	889	919	951	1,100	1,127	1,214	1,310	1,415	1,480	1,207	1,579	1,596	1,825	1,965
SEP	894	911	976	1,094	1,128	1,206	1,341	1,414	1,456	1,547	1,528	1,625	1,817	1,936
OCT	904	917	967	1,088	1,174	1,215	1,333	1,435	1,489	1,520	1,517	1,705	1,823	1,953
NOV	952	943	984	1,101	<b>1,176</b>	<b>1,241</b>	1,402	1,462	1,502	1,518	1,610	<b>1,768</b>	1,838	<b>1,975</b>
DEC	<b>955</b>	<b>967</b>	<b>997</b>	<b>1,102</b>	1,165	1,231	<b>1,431</b>	<b>1,481</b>	<b>1,551</b>	1,350	1,526	1,727	1,859	1,957
<b>MAX</b>	<b>955</b>	<b>967</b>	<b>997</b>	<b>1,102</b>	<b>1,176</b>	<b>1,241</b>	<b>1,431</b>	<b>1,481</b>	<b>1,551</b>	<b>1,572</b>	<b>1,636</b>	<b>1,768</b>	<b>1,893</b>	<b>1,975</b>

### Annex 11. Mindanao Monthly System Peak Demand, 2004-2017 (in MW)

MONTH	MINDANAO													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
JAN	1,058	1,082	1,062	1,108	1,158	1,143	1,240	1,250	1,270	1,284	1,354	1,387	1,497	1,589
FEB	1,044	1,082	1,077	1,141	1,146	1,163	1,180	1,231	1,191	1,244	1,351	1,380	1,472	1,613
MAR	1,027	1,082	1,088	1,177	1,162	1,158	1,026	1,219	1,244	1,245	1,344	1,370	1,485	1,633
APR	1,051	1,087	1,090	1,167	1,190	1,186	1,009	1,253	1,232	1,226	1,310	1,406	1,514	1,697
MAY	1,099	1,055	1,118	1,109	1,159	1,194	1,211	1,253	1,301	1,366	1,339	1,438	1,590	1,692
JUN	1,035	1,072	1,100	1,145	1,188	1,220	1,238	1,264	1,309	1,364	1,416	1,435	1,585	1,675
JUL	1,025	1,045	1,093	1,141	1,163	1,198	1,214	1,298	1,289	1,384	1,390	1,397	1,536	1,624
AUG	1,086	1,061	1,119	1,141	1,147	1,208	1,221	1,290	1,306	1,326	1,386	1,446	1,582	1,705
SEP	1,102	1,078	1,090	1,203	1,163	1,217	1,235	1,288	1,268	1,256	1,391	1,453	1,592	1,708
OCT	1,134	1,122	1,130	1,193	1,156	1,292	1,263	1,290	1,319	1,219	1,441	1,507	1,645	1,699
NOV	1,155	<b>1,149</b>	1,147	1,158	<b>1,204</b>	<b>1,303</b>	1,286	1,326	1,321	1,397	<b>1,469</b>	<b>1,517</b>	1,642	1,726
DEC	<b>1,177</b>	1,105	<b>1,228</b>	<b>1,241</b>	1,175	1,282	<b>1,288</b>	<b>1,346</b>	<b>1,318</b>	<b>1,428</b>	1,453	1,510	<b>1,653</b>	<b>1,760</b>
<b>MAX</b>	<b>1,177</b>	<b>1,149</b>	<b>1,228</b>	<b>1,241</b>	<b>1,204</b>	<b>1,303</b>	<b>1,288</b>	<b>1,346</b>	<b>1,321</b>	<b>1,428</b>	<b>1,469</b>	<b>1,517</b>	<b>1,653</b>	<b>1,760</b>

## Annex 12. Philippine Installed and Dependable Capacity by Plant Type, 2004-2017

Plant Type	Installed Capacity													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Coal</b>	3,967	3,967	4,177	4,213	4,213	4,277	4,867	4,917	5,568	5,568	5,708	5,963	7,419	8,049
<b>Oil-Based</b>	3,669	3,663	3,602	3,616	3,353	3,193	3,193	2,994	3,074	3,353	3,476	3,610	3,616	4,153
<b>Natural Gas</b>	2,763	2,763	2,763	2,834	2,831	2,831	2,861	2,861	2,862	2,862	2,862	2,862	3,431	3,447
<b>Renewable Energy</b>	5,149	5,226	5,261	5,277	5,284	5,309	5,437	5,391	5,521	5,541	5,898	6,330	6,958	7,079
<i>Geothermal</i>	1,932	1,978	1,978	1,958	1,958	1,953	1,966	1,783	1,848	1,868	1,918	1,917	1,916	1,916
<i>Hydro</i>	3,217	3,222	3,257	3,293	3,291	3,291	3,400	3,491	3,521	3,521	3,543	3,600	3,618	3,627
<i>Biomass</i>	0	0	0	0	0	30	38	83	119	119	131	221	233	224
<i>Solar</i>	0	1	1	1	1	1	1	1	1	1	23	165	765	885
<i>Wind</i>	0	25	25	25	33	33	33	33	33	33	283	427	427	427
<b>Total Installed Capacity</b>	<b>15,548</b>	<b>15,619</b>	<b>15,803</b>	<b>15,941</b>	<b>15,681</b>	<b>15,610</b>	<b>16,358</b>	<b>16,162</b>	<b>17,025</b>	<b>17,325</b>	<b>17,944</b>	<b>18,765</b>	<b>21,423</b>	<b>22,728</b>
Plant Type	Dependable Capacity													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Coal</b>	3,696	3,432	3,638	3,467	3,412	3,813	4,245	4,651	5,206	5,206	5,378	5,613	6,979	7,674
<b>Oil-Based</b>	3,216	3,043	2,878	2,670	2,702	2,528	2,488	2,579	2,561	2,846	2,692	2,734	2,821	3,286
<b>Natural Gas</b>	2,703	2,703	2,703	2,703	2,562	2,700	2,756	2,770	2,760	2,760	2,760	2,759	3,291	3,291
<b>Renewable Energy</b>	4,178	4,417	4,419	4,639	4,372	4,278	4,413	4,477	4,539	4,559	4,789	5,325	6,005	6,264
<i>Geothermal</i>	1,568	1,683	1,683	1,667	1,388	1,321	1,351	1,434	1,462	1,482	1,607	1,601	1,689	1,752
<i>Hydro</i>	2,610	2,723	2,726	2,962	2,950	2,914	3,021	2,963	2,983	2,983	2,982	3,073	3,181	3,269
<i>Biomass</i>	0	0	0	0	0	10	20	46	76	76	81	146	157	160
<i>Solar</i>	0	1	1	1	1	1	1	1	0	0	17	125	594	700
<i>Wind</i>	0	9	9	9	33	33	20	33	17	17	103	379	383	383
<b>Total Dependable Capacity</b>	<b>13,792</b>	<b>13,595</b>	<b>13,638</b>	<b>13,479</b>	<b>13,049</b>	<b>13,319</b>	<b>13,902</b>	<b>14,477</b>	<b>15,066</b>	<b>15,371</b>	<b>15,620</b>	<b>16,432</b>	<b>19,097</b>	<b>20,515</b>

### Annex 13. Luzon Installed and Dependable Capacity by Plant Type, 2004-2017

Plant Type	Installed Capacity													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Coal</b>	3,769	3,769	3,769	3,783	3,783	3,849	3,849	3,879	4,531	4,531	4,671	4,812	5,294	5,625
<b>Oil-Based</b>	2,514	2,404	2,333	2,363	2,100	1,984	1,984	1,757	1,778	2,020	2,033	2,133	2,133	2,518
<b>Natural Gas</b>	2,763	2,763	2,763	2,834	2,831	2,831	2,861	2,861	2,861	2,861	2,861	2,861	3,430	3,446
<b>Renewable Energy</b>	3,115	3,192	3,226	3,194	3,199	3,199	3,287	3,242	3,358	3,378	3,649	3,863	4,120	4,156
<i>Geothermal</i>	907	954	954	886	886	886	899	751	824	844	844	844	843	843
<i>Hydro</i>	2,208	2,213	2,247	2,284	2,281	2,280	2,346	2,440	2,462	2,462	2,471	2,528	2,537	2,527
<i>Biomass</i>	0	0	0	0	0	1	9	17	38	38	50	83	95	87
<i>Solar</i>	0	0	0	0	0	0	0	0	0	0	0	70	307	362
<i>Wind</i>	0	25	25	25	33	33	33	33	33	33	283	337	337	337
<b>Total Installed Capacity</b>	12,162	12,128	12,092	12,174	11,913	11,863	11,981	11,739	12,528	12,790	13,213	13,668	14,977	15,743
Plant Type	Dependable Capacity													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Coal</b>	3,551	3,287	3,287	3,112	3,056	3,450	3,531	3,664	4,219	4,219	4,391	4,512	4,970	5,404
<b>Oil-Based</b>	2,236	2,059	1,928	1,713	1,742	1,617	1,586	1,633	1,586	1,736	1,507	1,585	1,655	1,977
<b>Natural Gas</b>	2,703	2,703	2,703	2,703	2,562	2,700	2,756	2,770	2,759	2,759	2,759	2,759	3,291	3,291
<b>Renewable Energy</b>	2,381	2,547	2,548	2,783	2,507	2,464	2,626	2,757	2,785	2,805	2,965	3,322	3,684	3,758
<i>Geothermal</i>	604	727	726	714	439	431	500	587	587	607	692	691	777	782
<i>Hydro</i>	1,778	1,811	1,813	2,059	2,035	1,999	2,101	2,124	2,147	2,147	2,131	2,224	2,323	2,351
<i>Biomass</i>	0	0	0	0	0	1	5	13	34	34	39	60	71	66
<i>Solar</i>	0	0	0	0	0	0	0	0	0	0	0	54	220	265
<i>Wind</i>	0	9	9	9	33	33	20	33	17	17	103	293	293	293
<b>Total Dependable Capacity</b>	10,871	10,596	10,466	10,311	9,868	10,230	10,498	10,824	11,349	11,519	11,622	12,179	13,600	14,430



## Annex 14. Visayas Installed and Dependable Capacity by Plant Type, 2004-2017

Plant Type	Installed Capacity													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Coal</b>	198	198	198	198	198	196	786	806	806	806	806	769	1,054	1,054
<b>Oil-Based</b>	596	668	678	659	659	615	615	615	670	670	670	670	655	730
<b>Natural Gas</b>	0	0	0	0	0	0	0	0	1	1	1	1	1	1
<b>Renewable Energy</b>	927	927	927	976	977	1,007	1,006	981	971	971	1,043	1,242	1,574	1,640
<i>Geothermal</i>	916	916	916	964	964	964	964	923	915	915	965	965	965	965
<i>Hydro</i>	12	12	12	12	13	13	13	13	11	11	11	11	20	20
<i>Biomass</i>	0	0	0	0	0	29	29	44	44	44	44	101	101	101
<i>Solar</i>	0	0	0	0	0	0	0	0	0	0	22	75	399	465
<i>Wind</i>	0	0	0	0	0	0	0	0	0	0	0	90	90	90
<b>Total Installed Capacity</b>	1,721	1,793	1,803	1,833	1,835	1,818	2,407	2,402	2,448	2,448	2,520	2,683	3,284	3,425
Plant Type	Dependable Capacity													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Coal</b>	145	145	140	155	155	153	501	777	777	777	777	761	1,050	1,050
<b>Oil-Based</b>	507	493	459	479	482	426	464	476	505	505	505	425	434	499
<b>Natural Gas</b>	0	0	0	0	0	0	0	0	1	1	1	0	0	0
<b>Renewable Energy</b>	868	868	868	865	862	813	779	784	820	820	877	1,042	1,329	1,454
<i>Geothermal</i>	856	856	856	853	849	792	751	745	777	777	817	813	813	870
<i>Hydro</i>	12	12	12	12	13	13	13	13	11	11	11	11	18	18
<i>Biomass</i>	0	0	0	0	0	9	15	26	32	32	32	77	77	84
<i>Solar</i>	0	0	0	0	0	0	0	0	0	0	17	56	331	392
<i>Wind</i>	0	0	0	0	0	0	0	0	0	0	0	86	90	90
<b>Total Dependable Capacity</b>	1,520	1,506	1,467	1,498	1,499	1,392	1,745	2,037	2,103	2,103	2,160	2,228	2,813	3,002

## Annex 15. Mindanao Installed and Dependable Capacity by Plant Type, 2004-2017

Plant Type	Installed Capacity													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Coal</b>	0	0	210	232	232	232	232	232	232	232	232	382	1,070	1,370
<b>Oil-Based</b>	559	591	591	594	594	594	594	622	625	663	773	807	828	906
<b>Natural Gas</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Renewable Energy</b>	1,106	1,107	1,107	1,107	1,107	1,103	1,145	1,168	1,192	1,192	1,206	1,225	1,264	1,284
<i>Geothermal</i>	108	108	108	108	108	103	103	108	108	108	108	108	108	108
<i>Hydro</i>	998	998	998	998	998	998	1,040	1,038	1,047	1,047	1,061	1,061	1,061	1,080
<i>Biomass</i>	0	0	0	0	0	0	0	21	36	36	36	36	36	36
<i>Solar</i>	0	1	1	1	1	1	1	1	1	1	1	20	59	59
<i>Wind</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Installed Capacity</b>	1,665	1,698	1,908	1,933	1,933	1,929	1,971	2,022	2,049	2,087	2,211	2,414	3,162	3,559
Plant Type	Dependable Capacity													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Coal</b>	0	0	210	200	201	210	212	210	210	210	210	340	959	1,220
<b>Oil-Based</b>	473	491	491	478	478	485	438	469	470	605	680	724	733	811
<b>Natural Gas</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Renewable Energy</b>	929	1,002	1,004	992	1,003	1,001	1,008	937	934	934	948	961	993	1,052
<i>Geothermal</i>	108	100	101	100	100	98	100	102	98	98	98	98	100	100
<i>Hydro</i>	821	901	902	891	902	902	907	827	826	826	840	837	840	899
<i>Biomass</i>	0	0	0	0	0	0	0	7	10	10	10	10	10	10
<i>Solar</i>	0	1	1	1	1	1	1	1	0	0	0	15	43	43
<i>Wind</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Dependable Capacity</b>	1,402	1,493	1,705	1,670	1,682	1,697	1,658	1,616	1,614	1,749	1,838	2,025	2,684	3,083

### Annex 16. Philippine Gross Generation by Plant Type, 2004-2017 (in GWh)

<b>PHILIPPINES by Plant Type</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>Coal</b>	<b>16,194</b>	<b>15,257</b>	<b>15,294</b>	<b>16,837</b>	<b>15,749</b>	<b>16,476</b>	<b>23,301</b>	<b>25,342</b>	<b>28,265</b>	<b>32,081</b>	<b>33,054</b>	<b>36,686</b>	<b>43,303</b>	<b>46,847</b>
<b>Oil-based</b>	<b>8,504</b>	<b>6,141</b>	<b>4,665</b>	<b>5,148</b>	<b>4,868</b>	<b>5,381</b>	<b>7,101</b>	<b>3,398</b>	<b>4,254</b>	<b>4,491</b>	<b>5,708</b>	<b>5,886</b>	<b>5,661</b>	<b>3,787</b>
<i>Combined Cycle</i>	<i>738</i>	<i>91</i>	<i>239</i>	<i>653</i>	<i>513</i>	<i>639</i>	<i>1,202</i>	<i>124</i>	<i>227</i>	<i>247</i>	<i>515</i>	<i>276</i>	<i>694</i>	<i>405</i>
<i>Diesel</i>	<i>6,253</i>	<i>5,717</i>	<i>4,152</i>	<i>4,162</i>	<i>3,660</i>	<i>3,771</i>	<i>4,532</i>	<i>2,762</i>	<i>3,332</i>	<i>3,805</i>	<i>4,730</i>	<i>5,521</i>	<i>4,722</i>	<i>3,100</i>
<i>Gas Turbine</i>	<i>82</i>	<i>25</i>	<i>0</i>	<i>9</i>	<i>36</i>	<i>62</i>	<i>3</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>10</i>	<i>0</i>	<i>0</i>
<i>Oil Thermal</i>	<i>1,431</i>	<i>309</i>	<i>274</i>	<i>324</i>	<i>658</i>	<i>909</i>	<i>1,364</i>	<i>512</i>	<i>695</i>	<i>438</i>	<i>463</i>	<i>80</i>	<i>245</i>	<i>282</i>
<b>Natural Gas</b>	<b>12,384</b>	<b>16,861</b>	<b>16,366</b>	<b>18,789</b>	<b>19,576</b>	<b>19,887</b>	<b>19,518</b>	<b>20,591</b>	<b>19,642</b>	<b>18,791</b>	<b>18,690</b>	<b>18,878</b>	<b>19,854</b>	<b>20,547</b>
<b>Renewable Energy</b>	<b>18,874</b>	<b>18,308</b>	<b>20,459</b>	<b>18,837</b>	<b>20,628</b>	<b>20,191</b>	<b>17,823</b>	<b>19,845</b>	<b>20,762</b>	<b>19,903</b>	<b>19,810</b>	<b>20,963</b>	<b>21,979</b>	<b>23,189</b>
<i>Geothermal</i>	<i>10,282</i>	<i>9,902</i>	<i>10,465</i>	<i>10,215</i>	<i>10,723</i>	<i>10,324</i>	<i>9,929</i>	<i>9,942</i>	<i>10,250</i>	<i>9,605</i>	<i>10,308</i>	<i>11,044</i>	<i>11,070</i>	<i>10,270</i>
<i>Hydro</i>	<i>8,593</i>	<i>8,387</i>	<i>9,939</i>	<i>8,563</i>	<i>9,843</i>	<i>9,788</i>	<i>7,803</i>	<i>9,698</i>	<i>10,252</i>	<i>10,019</i>	<i>9,137</i>	<i>8,665</i>	<i>8,111</i>	<i>9,611</i>
<i>Biomass</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>14</i>	<i>27</i>	<i>115</i>	<i>183</i>	<i>212</i>	<i>196</i>	<i>367</i>	<i>726</i>	<i>1,013</i>
<i>Solar</i>	<i>0</i>	<i>2</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>17</i>	<i>139</i>	<i>1,097</i>	<i>1,201</i>
<i>Wind</i>	<i>0</i>	<i>17</i>	<i>53</i>	<i>58</i>	<i>61</i>	<i>64</i>	<i>62</i>	<i>88</i>	<i>75</i>	<i>66</i>	<i>152</i>	<i>748</i>	<i>975</i>	<i>1,094</i>
<b>Total Generation</b>	<b>55,957</b>	<b>56,568</b>	<b>56,784</b>	<b>59,612</b>	<b>60,821</b>	<b>61,934</b>	<b>67,743</b>	<b>69,176</b>	<b>72,922</b>	<b>75,266</b>	<b>77,261</b>	<b>82,413</b>	<b>90,798</b>	<b>94,370</b>

### Annex 17. Luzon, Visayas and Mindanao Gross Generation by Plant Type, 2004-2017 (in GWh)

<b>LUZON</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>Coal</b>	<b>15,548</b>	<b>14,653</b>	<b>14,099</b>	<b>14,418</b>	<b>13,504</b>	<b>14,091</b>	<b>20,047</b>	<b>19,681</b>	<b>21,878</b>	<b>25,756</b>	<b>27,346</b>	<b>29,680</b>	<b>33,143</b>	<b>33,953</b>
<b>Oil-based</b>	<b>4,591</b>	<b>2,022</b>	<b>1,711</b>	<b>2,192</b>	<b>1,928</b>	<b>1,864</b>	<b>3,287</b>	<b>1,291</b>	<b>1,800</b>	<b>1,601</b>	<b>2,342</b>	<b>1,845</b>	<b>2,562</b>	<b>2,379</b>
<i>Combined Cycle</i>	<i>738</i>	<i>91</i>	<i>239</i>	<i>653</i>	<i>513</i>	<i>639</i>	<i>1,202</i>	<i>124</i>	<i>227</i>	<i>247</i>	<i>515</i>	<i>276</i>	<i>694</i>	<i>405</i>
<i>Diesel</i>	<i>2,688</i>	<i>1,911</i>	<i>1,315</i>	<i>1,348</i>	<i>953</i>	<i>595</i>	<i>1,003</i>	<i>890</i>	<i>1,099</i>	<i>1,183</i>	<i>1,521</i>	<i>1,483</i>	<i>1,623</i>	<i>1,692</i>
<i>Gas Turbine</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>10</i>	<i>0</i>	<i>0</i>
<i>Oil Thermal</i>	<i>1,164</i>	<i>19</i>	<i>157</i>	<i>191</i>	<i>462</i>	<i>631</i>	<i>1,082</i>	<i>277</i>	<i>474</i>	<i>170</i>	<i>307</i>	<i>75</i>	<i>245</i>	<i>282</i>
<b>Natural Gas</b>	<b>12,384</b>	<b>16,861</b>	<b>16,366</b>	<b>18,789</b>	<b>19,576</b>	<b>19,887</b>	<b>19,518</b>	<b>20,591</b>	<b>19,642</b>	<b>18,783</b>	<b>18,686</b>	<b>18,878</b>	<b>19,854</b>	<b>20,547</b>
<b>Renewable Energy</b>	<b>7,330</b>	<b>7,091</b>	<b>9,065</b>	<b>8,221</b>	<b>9,192</b>	<b>9,132</b>	<b>7,413</b>	<b>8,454</b>	<b>8,993</b>	<b>8,679</b>	<b>8,392</b>	<b>9,711</b>	<b>10,938</b>	<b>11,633</b>
<i>Geothermal</i>	<i>3,033</i>	<i>2,742</i>	<i>3,519</i>	<i>3,601</i>	<i>3,730</i>	<i>3,516</i>	<i>3,323</i>	<i>3,486</i>	<i>3,588</i>	<i>3,399</i>	<i>3,817</i>	<i>4,096</i>	<i>4,227</i>	<i>3,910</i>
<i>Hydro</i>	<i>4,297</i>	<i>4,331</i>	<i>5,492</i>	<i>4,562</i>	<i>5,400</i>	<i>5,549</i>	<i>4,014</i>	<i>4,836</i>	<i>5,292</i>	<i>5,156</i>	<i>4,357</i>	<i>4,769</i>	<i>5,011</i>	<i>5,730</i>
<i>Biomass</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>3</i>	<i>14</i>	<i>44</i>	<i>37</i>	<i>60</i>	<i>65</i>	<i>187</i>	<i>439</i>	<i>599</i>
<i>Solar</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>66</i>	<i>495</i>	<i>496</i>
<i>Wind</i>	<i>0</i>	<i>17</i>	<i>53</i>	<i>58</i>	<i>61</i>	<i>64</i>	<i>62</i>	<i>88</i>	<i>75</i>	<i>66</i>	<i>152</i>	<i>592</i>	<i>767</i>	<i>899</i>
<b>Total Generation</b>	<b>39,854</b>	<b>40,627</b>	<b>41,241</b>	<b>43,620</b>	<b>44,200</b>	<b>44,975</b>	<b>50,265</b>	<b>50,017</b>	<b>52,312</b>	<b>54,820</b>	<b>56,766</b>	<b>60,113</b>	<b>66,498</b>	<b>68,512</b>
<b>VISAYAS</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>Coal</b>	<b>646</b>	<b>604</b>	<b>719</b>	<b>848</b>	<b>746</b>	<b>822</b>	<b>1,529</b>	<b>4,032</b>	<b>4,701</b>	<b>4,690</b>	<b>4,449</b>	<b>4,968</b>	<b>5,270</b>	<b>6,624</b>
<b>Oil-based</b>	<b>1,998</b>	<b>1,800</b>	<b>1,282</b>	<b>1,477</b>	<b>1,665</b>	<b>1,864</b>	<b>1,727</b>	<b>683</b>	<b>734</b>	<b>796</b>	<b>766</b>	<b>672</b>	<b>637</b>	<b>541</b>
<i>Diesel</i>	<i>1,649</i>	<i>1,486</i>	<i>1,166</i>	<i>1,335</i>	<i>1,433</i>	<i>1,554</i>	<i>1,446</i>	<i>449</i>	<i>514</i>	<i>529</i>	<i>615</i>	<i>672</i>	<i>637</i>	<i>541</i>
<i>Gas Turbine</i>	<i>82</i>	<i>24</i>	<i>0</i>	<i>9</i>	<i>36</i>	<i>62</i>	<i>3</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>Oil Thermal</i>	<i>266</i>	<i>290</i>	<i>116</i>	<i>133</i>	<i>196</i>	<i>248</i>	<i>277</i>	<i>235</i>	<i>220</i>	<i>268</i>	<i>151</i>	<i>0</i>	<i>0</i>	<i>0</i>
<b>Natural Gas</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Renewable Energy</b>	<b>6,373</b>	<b>6,295</b>	<b>6,128</b>	<b>5,776</b>	<b>6,239</b>	<b>6,038</b>	<b>5,820</b>	<b>5,740</b>	<b>6,047</b>	<b>5,606</b>	<b>5,794</b>	<b>6,530</b>	<b>7,047</b>	<b>6,889</b>
<i>Geothermal</i>	<i>6,338</i>	<i>6,267</i>	<i>6,100</i>	<i>5,747</i>	<i>6,199</i>	<i>5,985</i>	<i>5,771</i>	<i>5,616</i>	<i>5,930</i>	<i>5,463</i>	<i>5,627</i>	<i>6,105</i>	<i>5,974</i>	<i>5,564</i>
<i>Hydro</i>	<i>34</i>	<i>27</i>	<i>28</i>	<i>29</i>	<i>40</i>	<i>42</i>	<i>36</i>	<i>53</i>	<i>46</i>	<i>37</i>	<i>35</i>	<i>38</i>	<i>64</i>	<i>90</i>
<i>Biomass</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>11</i>	<i>13</i>	<i>72</i>	<i>71</i>	<i>106</i>	<i>117</i>	<i>159</i>	<i>276</i>	<i>414</i>
<i>Solar</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>15</i>	<i>71</i>	<i>525</i>	<i>627</i>
<i>Wind</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>157</i>	<i>209</i>	<i>194</i>
<b>Total Generation</b>	<b>9,016</b>	<b>8,698</b>	<b>8,129</b>	<b>8,102</b>	<b>8,650</b>	<b>8,724</b>	<b>9,075</b>	<b>10,456</b>	<b>11,483</b>	<b>11,100</b>	<b>11,014</b>	<b>12,170</b>	<b>12,955</b>	<b>14,054</b>

### Annex 17. Luzon, Visayas and Mindanao Gross Generation by Plant Type, 2004-2017 (in GWh)

MINDANAO	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Coal</b>	0	0	476	1,571	1,499	1,563	1,726	1,629	1,686	1,635	1,258	2,038	4,890	6,271
<b>Oil-based</b>	1,916	2,320	1,672	1,479	1,275	1,652	2,087	1,424	1,720	2,094	2,599	3,369	2,462	867
<i>Diesel</i>	1,916	2,320	1,671	1,479	1,275	1,623	2,082	1,423	1,719	2,093	2,595	3,365	2,462	867
<i>Oil Thermal</i>	0	0	0	0	0	30	5	0	1	1	4	4	0	0
<b>Natural Gas</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Renewable Energy</b>	5,171	4,923	5,266	4,841	5,197	5,020	4,590	5,650	5,721	5,618	5,624	4,723	3,994	4,666
<i>Geothermal</i>	910	893	846	867	794	823	834	841	731	743	864	842	869	797
<i>Hydro</i>	4,262	4,028	4,419	3,972	4,402	4,196	3,754	4,808	4,913	4,827	4,745	3,858	3,036	3,791
<i>Biomass</i>	0	0	0	0	0	0	0	0	75	47	14	21	11	0
<i>Solar</i>	0	2	1	1	1	1	1	1	1	1	1	2	77	78
<i>Wind</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Generation</b>	<b>7,087</b>	<b>7,243</b>	<b>7,414</b>	<b>7,890</b>	<b>7,972</b>	<b>8,235</b>	<b>8,403</b>	<b>8,703</b>	<b>9,127</b>	<b>9,347</b>	<b>9,481</b>	<b>10,130</b>	<b>11,345</b>	<b>11,804</b>



### Annex 18. Visayas Subgrid Gross Generation by Plant Type, 2007-2017 (in GWh)

SUBGRID	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>CEBU</b>	<b>1,567</b>	<b>1,647</b>	<b>1,902</b>	<b>2,434</b>	<b>3,651</b>	<b>4,158</b>	<b>4,197</b>	<b>3,811</b>	<b>4,154</b>	<b>4,209</b>	<b>4,560</b>
Coal	848	746	822	1,499	3,249	3,674	3,652	3,354	3,868	3,915	4,192
Oil-based	714	895	1,074	930	395	477	532	448	282	253	286
<i>Diesel</i>	572	663	764	650	161	257	264	297	282	253	286
<i>Gas Turbine</i>	9	36	62	3	0	0	0	0	0	0	0
<i>Oil Thermal</i>	133	196	248	277	235	220	268	151	0	0	0
Natural Gas	0	0	0	0	0	0	8	4	0	0	0
Renewable Energy (RE)	5	6	6	5	6	7	5	4	4	41	83
<i>Geothermal</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hydro</i>	5	6	6	5	6	7	5	4	4	3	5
<i>Biomass</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Solar</i>	0	0	0	0	0	0	0	0	0	38	78
<i>Wind</i>	0	0	0	0	0	0	0	0	0	0	0
<b>NEGROS</b>	<b>1,460</b>	<b>1,344</b>	<b>1,356</b>	<b>1,425</b>	<b>1,452</b>	<b>1,600</b>	<b>1,552</b>	<b>1,743</b>	<b>1,940</b>	<b>2,437</b>	<b>2,446</b>
Coal	0	0	0	0	0	0	0	0	0	0	0
Oil-based	0	0	0	0	0	0	0	0	0	9	14
<i>Diesel</i>	0	0	0	0	0	0	0	0	0	9	14
<i>Gas Turbine</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Oil Thermal</i>	0	0	0	0	0	0	0	0	0	0	0
Natural Gas	0	0	0	0	0	0	0	0	0	0	0
Renewable Energy (RE)	1,460	1,344	1,356	1,425	1,452	1,600	1,552	1,743	1,940	2,428	2,432
<i>Geothermal</i>	1,458	1,343	1,344	1,411	1,404	1,572	1,491	1,657	1,767	1,797	1,612
<i>Hydro</i>	2	2	1	2	2	0	0	0	0	8	4
<i>Biomass</i>	0	0	11	13	47	28	62	70	131	233	372
<i>Solar</i>	0	0	0	0	0	0	0	15	42	390	445
<i>Wind</i>	0	0	0	0	0	0	0	0	0	0	0
<b>PANAY</b>	<b>728</b>	<b>725</b>	<b>744</b>	<b>787</b>	<b>1,043</b>	<b>1,266</b>	<b>1,284</b>	<b>1,393</b>	<b>1,597</b>	<b>1,920</b>	<b>2,844</b>
Coal	0	0	0	30	783	1,027	1,037	1,095	1,101	1,356	2,432
Oil-based	728	725	744	757	235	197	202	251	312	280	131

### Annex 18. Visayas Subgrid Gross Generation by Plant Type, 2007-2017 (in GWh)

SUBGRID	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<i>Diesel</i>	728	725	744	757	235	197	202	251	312	280	131
<i>Gas Turbine</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Oil Thermal</i>	0	0	0	0	0	0	0	0	0	0	0
<b>Natural Gas</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Renewable Energy (RE)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>43</b>	<b>44</b>	<b>46</b>	<b>185</b>	<b>284</b>	<b>281</b>
<i>Geothermal</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hydro</i>	0	0	0	0	0	0	0	0	0	28	35
<i>Biomass</i>	0	0	0	0	25	43	44	46	28	43	43
<i>Solar</i>	0	0	0	0	0	0	0	0	0	5	8
<i>Wind</i>	0	0	0	0	0	0	0	0	157	209	194
<b>LEYTE-SAMAR</b>	<b>4,290</b>	<b>4,858</b>	<b>4,643</b>	<b>4,362</b>	<b>4,212</b>	<b>4,358</b>	<b>3,972</b>	<b>3,970</b>	<b>4,367</b>	<b>4,270</b>	<b>4,048</b>
<b>Coal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Oil-based</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<i>Diesel</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Gas Turbine</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Oil Thermal</i>	0	0	0	0	0	0	0	0	0	0	0
<b>Natural Gas</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Renewable Energy (RE)</b>	<b>4,290</b>	<b>4,858</b>	<b>4,643</b>	<b>4,362</b>	<b>4,212</b>	<b>4,358</b>	<b>3,972</b>	<b>3,970</b>	<b>4,367</b>	<b>4,270</b>	<b>4,048</b>
<i>Geothermal</i>	4,289	4,857	4,641	4,361	4,212	4,358	3,972	3,970	4,339	4,178	3,952
<i>Hydro</i>	1	2	2	1	0	0	0	0	0	0	0
<i>Biomass</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Solar</i>	0	0	0	0	0	0	0	0	28	92	96
<i>Wind</i>	0	0	0	0	0	0	0	0	0	0	0
<b>BOHOL</b>	<b>33</b>	<b>50</b>	<b>54</b>	<b>38</b>	<b>49</b>	<b>45</b>	<b>38</b>	<b>43</b>	<b>45</b>	<b>41</b>	<b>68</b>
<b>Coal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Oil-based</b>	<b>11</b>	<b>20</b>	<b>20</b>	<b>10</b>	<b>4</b>	<b>6</b>	<b>6</b>	<b>12</b>	<b>11</b>	<b>16</b>	<b>22</b>
<i>Diesel</i>	11	20	20	10	4	6	6	12	11	16	22
<i>Gas Turbine</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Oil Thermal</i>	0	0	0	0	0	0	0	0	0	0	0
<b>Natural Gas</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Renewable Energy (RE)</b>	<b>21</b>	<b>30</b>	<b>33</b>	<b>28</b>	<b>45</b>	<b>39</b>	<b>32</b>	<b>31</b>	<b>34</b>	<b>24</b>	<b>46</b>
<i>Geothermal</i>	0	0	0	0	0	0	0	0	0	0	0

### Annex 18. Visayas Subgrid Gross Generation by Plant Type, 2007-2017 (in GWh)

SUBGRID	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<i>Hydro</i>	21	30	33	28	45	39	32	31	34	24	46
<i>Biomass</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Solar</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Wind</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Hydro</i>	21	30	33	28	45	39	32	31	34	24	46
<i>Biomass</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Solar</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Wind</i>	0	0	0	0	0	0	0	0	0	0	0
<b>Summary per Visayas Subgrid</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
CEBU	1,567	1,647	1,902	2,434	3,651	4,158	4,197	3,811	4,154	4,209	4,560
NEGROS	1,460	1,344	1,356	1,425	1,452	1,600	1,552	1,743	1,940	2,437	2,446
PANAY	728	725	744	787	1,043	1,266	1,284	1,393	1,597	1,920	2,844
LEYTE-SAMAR	4,290	4,858	4,643	4,362	4,212	4,358	3,972	3,970	4,367	4,270	4,048
BOHOL	33	50	54	38	49	45	38	43	45	41	68
<b>Total Visayas w/o SPUG</b>	<b>8,077</b>	<b>8,625</b>	<b>8,698</b>	<b>9,046</b>	<b>10,407</b>	<b>11,428</b>	<b>11,043</b>	<b>10,959</b>	<b>12,103</b>	<b>12,875</b>	<b>13,966</b>
<b>SPUG</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>30</b>	<b>49</b>	<b>55</b>	<b>56</b>	<b>55</b>	<b>67</b>	<b>80</b>	<b>88</b>
<b>Total Visayas w/ SPUG</b>	<b>8,102</b>	<b>8,650</b>	<b>8,724</b>	<b>9,075</b>	<b>10,456</b>	<b>11,483</b>	<b>11,100</b>	<b>11,014</b>	<b>12,170</b>	<b>12,955</b>	<b>14,054</b>

### Annex 19. Gross Power Generation by Ownership, 2004-2017 (in GWh)

<b>Total PHILIPPINES</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>NPC</b>	16,431	15,318	16,792	15,151	12,743	9,745	4,053	5,142	5,241	5,035	4,692	3,759	2,715	3,346
<b>NPC-SPUG</b>	395	462	507	437	448	474	522	543	466	423	416	405	440	411
<b>NPC-IPP</b>	25,133	24,717	23,173	26,156	27,972	27,400	14,725	9,536	9,875	8,912	8,382	8,747	7,223	6,968
<b>Non-NPC</b>	13,999	16,071	16,312	17,867	19,658	24,315	48,442	53,955	57,340	60,895	63,770	69,501	80,420	83,646
<b>Total Generation</b>	<b>55,957</b>	<b>56,568</b>	<b>56,784</b>	<b>59,612</b>	<b>60,821</b>	<b>61,934</b>	<b>67,743</b>	<b>69,176</b>	<b>72,922</b>	<b>75,266</b>	<b>77,261</b>	<b>82,413</b>	<b>90,798</b>	<b>94,370</b>
<b>LUZON</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>NPC</b>	9,816	8,941	10,151	8,754	6,018	3,834	225	527	514	474	212	243	0	0
<b>NPC-SPUG</b>	308	348	396	323	330	347	380	381	314	263	250	236	252	207
<b>NPC-IPP</b>	17,388	16,802	15,698	18,187	19,591	18,598	6,691	2,160	2,285	2,069	1,973	1,575	2,041	2,231
<b>Non-NPC</b>	12,342	14,535	14,997	16,357	18,260	22,195	42,969	46,949	49,200	52,014	54,332	58,059	64,205	66,075
<b>Total Generation</b>	<b>39,854</b>	<b>40,627</b>	<b>41,241</b>	<b>43,620</b>	<b>44,200</b>	<b>44,975</b>	<b>50,265</b>	<b>50,017</b>	<b>52,312</b>	<b>54,820</b>	<b>56,766</b>	<b>60,113</b>	<b>66,498</b>	<b>68,512</b>
<b>VISAYAS</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>NPC</b>	2,384	2,406	2,285	2,380	2,332	1,690	176	43	35	30	21	0	0	0
<b>NPC-SPUG</b>	26	35	28	24	25	26	30	49	32	33	34	22	23	27
<b>NPC-IPP</b>	4,987	4,783	4,568	4,255	4,983	4,967	4,482	4,174	4,274	3,581	3,364	3,576	3,454	3,378
<b>Non-NPC</b>	1,619	1,474	1,248	1,443	1,310	2,042	4,387	6,191	7,142	7,455	7,595	8,572	9,477	10,648
<b>Total Generation</b>	<b>9,016</b>	<b>8,698</b>	<b>8,129</b>	<b>8,102</b>	<b>8,650</b>	<b>8,724</b>	<b>9,075</b>	<b>10,456</b>	<b>11,483</b>	<b>11,100</b>	<b>11,014</b>	<b>12,170</b>	<b>12,955</b>	<b>14,054</b>
<b>MINDANAO</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>NPC</b>	4,231	3,971	4,356	4,017	4,393	4,221	3,652	4,572	4,692	4,531	4,458	3,516	2,715	3,346
<b>NPC-SPUG</b>	61	80	83	90	93	101	113	113	121	128	132	147	165	176
<b>NPC-IPP</b>	2,757	3,131	2,907	3,715	3,398	3,834	3,551	3,202	3,316	3,262	3,046	3,596	1,728	1,359
<b>Non-NPC</b>	38	61	67	68	88	79	1,086	815	998	1,426	1,844	2,870	6,738	6,923
<b>Total Generation</b>	<b>7,087</b>	<b>7,243</b>	<b>7,414</b>	<b>7,890</b>	<b>7,972</b>	<b>8,235</b>	<b>8,403</b>	<b>8,703</b>	<b>9,127</b>	<b>9,347</b>	<b>9,481</b>	<b>10,130</b>	<b>11,345</b>	<b>11,804</b>

NPC – National Power Corporation; SPUG-Small Power Utilities Group; IPP-Independent Power Producer

### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
<b>COAL</b>			<b>5,190</b>		
Pagbilao Coal-Fired Thermal Power Plant	Pagbilao Energy Corporation	Pagbilao Power Station, Nrgy. Ibabang Polo, Pagbilao, Quezon	420	August 2017 (Ongoing Testing and Commissioning)	January 2018
Limay Power Plant Project Phase II	SMC Consolidated Power Corporation	Brgy. Lamao, Limay, Bataan	300	Unit 3 - December 2017 Unit 4 - August 2019	Unit 3 - March 2018 Unit 4 - December 2019
San Buenaventura Power Ltd. Co. (SBPL) Project	San Buenaventura Power Ltd. Co. (SBPL)	Barangay Cagsiyay 1, Mauban, Quezon	500	December 2018	December 2019
Masinloc Expansion Project	AES Masinloc Power Partners Co., Inc.	Zambales	300	Unit 3 - September 2019	December 2019 (Target Testing and Commissioning)
RPEI Coal-Fired Power Plant	Redondo Peninsula Energy, Inc.	Sitio Naglatore, Cawag, Subic Bay Freeport Zone	600	Unit I - October 2018 Unit II - December 2018 (Target Commencement of Construction will be	2019



## Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
				Dependent on Supreme Court decision on Writ of Kalikasan Case.)	
GNPower Dinginin 2 x 660 MW Supercritical Coal-Fired Power Plant	GNPower Dinginin Coal Plant Ltd. Co.	Mariveles, Bataan	1,200	Unit I - Oct 2018 Unit II - Dec 2019	Unit I - March 2019 Unit II - January 2020
AOE Coal-Fired Power Plant	Meralco PowerGen Corporation (Project Company: Atimonan One Energy)	Atimonan, Quezon	1,200	Unit 1 - June 2021 Unit 2 - TBD	Unit 1 - June 2021 Unit 2 - TBD
Global Luzon Coal-Fired Power Plant	Global Luzon Energy Development Corporation	Brgys. Carisquis and Nalvo Sur, Luna, La Union	670	November 2021	January 2022
<b>OIL</b>			<b>46</b>		
SLPGC Gas Turbine Power Project Unit 3	Southwest Luzon Power Generation Corporation (SLPGC)	San Rafael, Calaca, Batangas	23	April 2017	January 2018

### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
SLPGC Gas Turbine Power Project Unit 4	Southwest Luzon Power Generation Corporation (SLPGC)	San Rafael, Calaca, Batangas	23	April 2017	January 2018
<b>NATURAL GAS</b>			<b>650</b>		
Pagbilao Combined Cycle Gas Fired Power Plant  Proposed 3x200 MW CCGT Power Plant	Energy World Corporation	Brgy. Ibabang Polo, Grande Island, Pagbilao, Quezon	650	2018	2018
<b>HYDROPOWER</b>			<b>439.23</b>		
Maris Main Canal 1 HEP	SN Aboitiz Power Generation	Ramon, Isabela	8.5	January 2018	March 2018
Tubao	Tubao Mini-Hydro Electric Corporation	Tubao, La Union	1.5	December 2018	December 2018 (Target Testing and Commissioning)

### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Majayjay	Majayjay Hydro Power Company, Inc.	Majayjay, Laguna	3	December 2018	December 2018 (Target Testing and Commissioning)
Labayat River (Upper Cascade)	Repower Energy Development Corporation	Real, Quezon	3	December 2018	December 2018 (Target Testing and Commissioning)
Colasi	Colasi Mini Hydro Electric Power Plant Corporation	Mercedes, Camarines Norte	1	December 2019	December 2019 (Target Testing and Commissioning)
Man-Asok	Benguet Electric Cooperative	Buguias, Benguet	3	December 2019	December 2019 (Target Testing and Commissioning)
Dupinga Hydroelectric Power Project	Constellation Energy Corporation	Gabalton, Nueva Ecija	3	December 2019	December 2019 (Target Testing and Commissioning)

### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Lalawinan Mini-Hydro Power Project	Repower Energy Development	Real, Quezon	3	December 2019	December 2019 (Target Testing and Commissioning)
Didipio 1	AT Dinum Company	Kasibu, Nueva Vizcaya	2.1	December 2020	December 2020 (Target Testing and Commissioning)
Ibulao Hydroelectric Power Project	Hydrocore, Inc.	Lagawe, Ifugao	4.5	December 2020	December 2020 (Target Testing and Commissioning)
Abdao HEP	AV Garcia Power Systems Corp.	Tabaan Sur, Tuba, Benguet	2	December 2020	December 2020 (Target Testing and Commissioning)
Barit (Irrigation Discharge) Hydroelectric Power Project	Nascent Technologies	Buhi, Camarines Sur	0.4	December 2020	December 2020 (Target Testing and Commissioning)

### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Dibuluan	Greenpower Resources Corp	San Agustin, Isabela	5	December 2020	December 2020 (Target Testing and Commissioning)
Kabayan 2 (Natalang HEP)	Hedcor Cordillera, Inc.	Kabayan, Benguet	38	December 2020	December 2020 (Target Testing and Commissioning)
Maapon River Mini-Hydro Power Project (MHP)	Renesons Energy Corporation	Brgy. Piis, Lucban, Quezon	2.6	December 2020	December 2020 (Target Testing and Commissioning)
Didipio 2	AT Dinum Company	Kasibu, Nueva Vizcaya	9.4	December 2020	December 2020 (Target Testing and Commissioning)
Talubin Hydropower Project	Mountain Province Electric Cooperative, Inc.	Bontoc, Mountain Province	4.9	December 2020	December 2020 (Target Testing and Commissioning)
Laguio Malaki 1	Enervantage Suppliers Co., Inc.	Mauban, Quezon	1.6	December 2021	December 2021 (Target Testing and Commissioning)

### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Pinacanauan	Sunwest Water & Electric Co., Inc.	Peñablanca, Cagayan	6	December 2021	December 2021 (Target Testing and Commissioning)
Laguio Malaki 2	Enervantage Suppliers Co., Inc.	Mauban, Quezon	3.1	December 2021	December 2021 (Target Testing and Commissioning)
Davidavilan	PTC Energy, Inc.	Mauban, Quezon	1	December 2021	December 2021 (Target Testing and Commissioning)
Matuno 1	Smith Bell Mini Hydro Corporation	Ambaguio, Nueva Vizcaya	7.4	December 2021	December 2021 (Target Testing and Commissioning)
Matibuey	Sta. Clara Power Corporation	Matibuey, Ilocos Sur	16	December 2021	December 2021 (Target Testing and Commissioning)
Tibag	Repower Energy Development	Real, Quezon	4.40	December 2021	December 2021 (Target Testing and Commissioning)

### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Lower Labayat	Repower Energy Development	Real, Quezon	1.40	December 2021	December 2021 (Target Testing and Commissioning)
Besao 2	BIMAKA Renewable Energy Development Corporation	Besao, Mountain Province	7.00	December 2021	December 2021 (Target Testing and Commissioning)
Besao 1	BIMAKA Renewable Energy Development Corporation	Besao, Mountain Province	1.00	December 2021	December 2021 (Target Testing and Commissioning)
Besao 3	BIMAKA Renewable Energy Development Corporation	Besao, Mountain Province	4.50	December 2021	December 2021 (Target Testing and Commissioning)
Besao 1B	BIMAKA Renewable Energy Development Corporation	Besao, Mountain Province	1.70	December 2021	December 2021 (Target Testing and Commissioning)
Besao 2A	BIMAKA Renewable Energy Develop	Besao, Mountain Province	1.50	December 2021	December 2021 (Target Testing and Commissioning)



### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Besao 1A	BIMAKA Renewable Energy Develop	Besao, Mountain Province	2.30	December 2021	December 2021 (Target Testing and Commissioning)
Ibulao 1	Kiangan Mini Hydro Corporaion	Kiangan, Ifugao	6.75	December 2021	December 2021 (Target Testing and Commissioning)
Lamut	Enerhighland Corporation	Asipulo & Lamut, Ifugao	6.00	December 2021	December 2021 (Target Testing and Commissioning)
Hungduan	Kiangan Mini Hydro Corporaion	Kiangan, Ifugao	4.04	December 2021	December 2021 (Target Testing and Commissioning)
Alilem	Philnew Hydro Power Corporation	Alilem, Ilocos Sur	16.2	December 2022	December 2022 (Target Testing and Commissioning)
Ilaguen	Isabela Power Corporation	San Mariano & San Guillermo	19	December 2022	December 2022 (Target Testing and Commissioning)

### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Matuno	Epower Technologies Corporation	Bambang, Nueva Ecija	8	December 2022	December 2022 (Target Testing and Commissioning)
Disabungan	Greenpower Resources Corporation	San Mariano, Isabela	4.8	December 2022	December 2022 (Target Testing and Commissioning)
Cawayan 2	Sunwest Water & Electric Co., Inc.	Sorsogon, Sorsogon	1	December 2022	December 2022 (Target Testing and Commissioning)
Quirino	Philnewriver Power Corp.	Quirino, Ilocos Sur	11.5	December 2022	December 2022 (Target Testing and Commissioning)
Matuno 2	Smith Bell Mini Hydro Corporation	Bambang, Nueva Ecija	7.9	December 2022	December 2022 (Target Testing and Commissioning)

### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Piapi	Repower Energy Development	Mauban, Quezon	3.30	December 2022	December 2022 (Target Testing and Commissioning)
Tignoan River (Upper Cascade) HEP	Repower Energy Development Corp	Real, Quezon	1.5	December 2022	December 2022 (Target Testing and Commissioning)
Asin	Kiangan Mini Hydro Corporaion	Kiangan, Ifugao	7.04	December 2022	December 2022 (Target Testing and Commissioning)
Ilaguen 3	Isabela Power Corporation	Echague, Isabela	11.00	December 2022	December 2022 (Target Testing and Commissioning)
Addalam	Quirino Resources Development Corp.	Aglipay, Quirino	14.20	December 2022	December 2022 (Target Testing and Commissioning)

### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Kapangan	Cordillera Hydro Electric Power Corporation	Kapangan & Kibungan, Benguet	60	December 2023	December 2023 (Target Testing and Commissioning)
Ibulao 2	Enerhighland Corporation	Municipalities of Kiangnan, Lamut and Lagawe , Province of Ifugao	7.40	December 2023	December 2023 (Target Testing and Commissioning)
Addalam	Quirino Power Energy Corporation	Aglipay, Quirino	3.80	December 2024	December 2024 (Target Testing and Commissioning)
Tinoc 1	Quadriver Energy Corp.	Tinoc, Ifugao	4.1	December 2025	December 2025 (Target Testing and Commissioning)
Tinoc 4	Philnew Hydro Power Corporation	Tinoc, Ifugao	5	December 2025	December 2025 (Target Testing and Commissioning)

### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Tinoc 2	Philnew Hydro Power Corporation	Tinoc, Ifugao	11	December 2025	December 2025 (Target Testing and Commissioning)
Tinoc 3	Quadraver Energy Corp.	Tinoc, Ifugao	8	December 2025	December 2025 (Target Testing and Commissioning)
Tumauini (Lower Cascade)	Quadraver Energy Corp.	Tumauini, Isabela	7.8	December 2025	December 2025 (Target Testing and Commissioning)
Tumauini (Upper Cascade)	Philnew Hydro Power Corporation	Tumauini, Isabela	14	December 2025	December 2025 (Target Testing and Commissioning)
Tinoc 5	Philnew River Power Corporation	Tinoc, Ifugao	6.9	December 2025	December 2025 (Target Testing and Commissioning)
Tinoc 6	Philnew River Power Corporation	Tinoc, Ifugao	8	December 2025	December 2025 (Target Testing and Commissioning)

## Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Ilaguen 2	Isabela Power Corporation	Dinapigue, Isabela	14	December 2025	December 2025 (Target Testing and Commissioning)
Danac	Philnewriver Power Corp.	Sugpon, Ilocos Sur	13.2	December 2025	December 2025 (Target Testing and Commissioning)
<b>SOLAR</b>			<b>92.86</b>		
Sta. Rita Solar Power Project - Phase II	Jobin-Sqm Inc. (JOBIN)	Mt. Sta. Rita, Morong and Hermosa, Bataan	92.86	January 2018	January 2018 (Target Testing and Commissioning)
<b>WIND</b>			<b>0</b>		
<b>GEOHERMAL</b>			<b>43</b>		
Maibarara 2 Geothermal Project	Maibarara Geothermal Inc.	Batangas	12	January 2018	March 2018
Bacman 3 (Tanawon) Geothermal Project	Energy Development Corporation	Guinlajon, Sorsogon	31	December 2022	December 2022 (Target Testing and Commissioning)
<b>BIOMASS</b>			<b>49.875</b>		

### Annex 20. Luzon Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
SJCityPower Rice Husk-Fired Biomass power Plant Project Phase 2	San Jose City I Power Corporation	Brgy. Tulat, San Jose, Nueva Ecija	12	August 2017 (On-going testing and Commissioning)	March 2018
ACNPC WTE Biomass Power Plant Project Phase 2	Asian Carbon Neutral Power Corporation	Tarlac	1	January 2018	March 2018
Isabela La Suerte Rice Husk-Fired Power Project	Isabela La Suerte Rice Mill Corporation	Camarines Sur	5	January 2018	March 2018
Central Azucarera Bagasse-Fired Power Plant Project	Central Azucarera Don Pedro, Inc.	Batangas	31.875	January 2018	March 2018
<b>Battery</b>			<b>10</b>		
AES Battery Storage - Masinloc Project	AES Philippines Power Partners Co., LTD.	Masinloc, Zambales	10	2018	2018
<b>TOTAL</b>			<b>6,510.97</b>		



### Annex 21. Visayas Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
<b>COAL</b>			<b>435</b>		
Therma Visayas Energy Project	Therma Visayas Inc.	Brgy. Bato, Toledo City, Cebu	300	January 2018	Unit 1: January 2018 Unit 2: March 2018
Palm Concepcion Coal-Fired Power Plant	Palm Concepcion Power Corp. (Formerly DMCI Concepcion Power Corp.)	Brgy. Nipa, Concepcion, Iloilo	135	Unit II - March 2018	Unit II - December 2018
<b>OIL</b>			<b>8</b>		
CENPRI Diesel Power Plant	Central Negros Power Reliability, Inc.	Brgy. Calumangan, Bago City, Negros Occidental	8	Unit 5 - February 2018	Unit 5 - March 2018
<b>GEOHERMAL</b>			<b>50</b>		
Biliran Geothermal Plant Project	Biliran Geothermal Incorporated	Biliran, Biliran	50	September 2018	Unit 1 (5 MW) - September 2018 Unit 2 (5 MW) - March 2019 Unit 3 (7 MW) - July 2021 Unit 4 (11 MW) -

### Annex 21. Visayas Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
					November 2022 Unit 5 (14 MW) - January 2023 Unit 6 (7 MW) - July 2023
<b>HYDROPOWER</b>			<b>103.38</b>		
Igbulo (Bais) Hydroelectric Power Project	Century Peak Energy Corporation	Igbaras, Iloilo	5.1	March 2018	March 2018 (Target Testing and Commissioning)
Timbaban	Oriental Energy and Power Generation Corporation	Madalag, Aklan	18.0	February 2019	February 2019 (Target Testing and Commissioning)
Cantakoy	Quadriver Energy Corp.	Danao, Bohol	8	December 2020	December 2020 (Target Testing and Commissioning)
Amlan (Plant A)	Natural Power Sources Integration, Inc.	Amlan, Negros Oriental	3.2	December 2020	December 2020 (Target Testing and Commissioning)

### Annex 21. Visayas Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Amlan (Plant C)	Natural Power Sources Integration, Inc.	Amlan, Negros Oriental	0.8	December 2020	December 2020 (Target Testing and Commissioning)
Malugo	Vivant-Malogo Hydropower, Inc	Silay City, Negros	6	December 2020	December 2020 (Target Testing and Commissioning)
Loboc Hydroelectric Power Project	Sta. Clara Power Corporation	Loboc, Bohol	1.2	December 2020	December 2020 (Target Testing and Commissioning)
Caroan	Antique electric Cooperative	Sebaste, Antique	0.84	December 2020	December 2020 (Target Testing and Commissioning)
Ipayo	Antique electric Cooperative	Sebaste, Antique	0.84	December 2020	December 2020 (Target Testing and Commissioning)

### Annex 21. Visayas Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Main Aklan River Hydroelectric Power Project	Sunwest Water & Electric Company, Inc.	Libacao, Aklan	15	December 2021	December 2021 (Target Testing and Commissioning)
Ilaguen 4	Isabela Power Corporation	Echague	10	December 2021	December 2021 (Target Testing and Commissioning)
Lower Himogaan	LGU Sagay	Sagay, Negros Occidental	4	December 2022	December 2022 (Target Testing and Commissioning)
Bansud	Sunwest Water & Electric Company, Inc.	Bansud & Gloria, Oriental Mindoro	1.5	December 2022	December 2022 (Target Testing and Commissioning)
Basak II	Meadowland Developers, Inc.	Badian, Cebu	0.5	December 2025	December 2025 (Target Testing and Commissioning)

### Annex 21. Visayas Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Amlan (Plant B)	Natural Power Sources Integration, Inc.	Amlan, Negros Oriental	1.5	December 2025	December 2025 (Target Testing and Commissioning)
Hilabangan (Lower Cascade)	Century Peak Energy Corporation	Kabankalan, Negros Occidental	3	December 2025	December 2025 (Target Testing and Commissioning)
Hilabangan (Upper Cascade)	Century Peak Energy Corporation	Kabankalan, Negros Occidental	4.8	December 2025	December 2025 (Target Testing and Commissioning)
Maninila (Lower Cascade)	Century Peak Energy Corporation	San Remigio, Antique	4.5	December 2025	December 2025 (Target Testing and Commissioning)
Maninila (Upper Cascade)	Century Peak Energy Corporation	San Remigio, Antique	3.1	December 2025	December 2025 (Target Testing and Commissioning)

### Annex 21. Visayas Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Sibalom (Upper Cascade)	Century Peak Energy Corporation	San Remigio, Antique	4.2	December 2025	December 2025 (Target Testing and Commissioning)
Sibalom (Middle Cascade)	Century Peak Energy Corporation	San Remigio, Antique	4	December 2025	December 2025 (Target Testing and Commissioning)
Sibalom (Lower Cascade)	Century Peak Energy Corporation	San Remigio, Antique	3.3	December 2025	December 2025 (Target Testing and Commissioning)
<b>SOLAR</b>			<b>0</b>		
<b>WIND</b>			<b>0</b>		
<b>BIOMASS</b>			<b>178.58</b>		
VMC Cogeneration Power Plant Project	Victorias Milling Company, Inc.	Victoria, Negros Occidental	40	January 2018	March 2018
HPC Cogeneration Power Plant Project	Hawaiian-Philippine Company	Negros Occidental	20.58	January 2018	March 2018

### Annex 21. Visayas Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
SCBI Multi-Feedstock Biomass Power Plant Project	San Carlos Biopower, Inc.	Negros Occidental	20	January 2018	March 2018
BISCOM Cogeneration Power Plant Project	BISCOM, Inc.	Binalbagan, Negros Occidental	48	December 2018	December 2018 (Target Testing and Commissioning)
Bais Bagasse-Fired Cogeneration Power Plant Project	Central Azucarera Don Pedro	Calasagan, Bais City, Negros Occidental	25	December 2018	December 2018 (Target Testing and Commissioning)
SNBI Cane trash-Fired Biomass Power Plant Project	South Negros BioPower, Inc.	Negros Occidental	25	December 2019	December 2019 (Target Testing and Commissioning)
<b>TOTAL</b>			<b>774.96</b>		



### Annex 22. Mindanao Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
<b>COAL</b>			<b>700</b>		
GNPower Kauswagan Clean Coal-Fired Power Plant	GN Power Kauswagan Ltd. Co.	Kauswagan, Lanao del Norte	600	December 2017	March 2018
Southern Mindanao Coal Fired Power Station Phase 2	Sarangani Energy Corporation	Brgy. Kamanga, Maasim, Sarangani	100	December 2018	January 2019
<b>OIL</b>			<b>29.54</b>		
Peakpower Soccsargen, Inc. Bunker Fired Power Plant (PSI Expansion Project)	Peakpower Soccsargen, Inc.	General Santos City, South Cotabato	13.94	January 2018	January 2018 (Target Testing and Commissioning)
Peakpower San Francisco, Inc. Bunker Fired Power Plant (PSI Expansion Project)	Peakpower San Francisco, Inc.	San Francisco, Agusan del Sur	5.2	January 2018	January 2018 (Target Testing and Commissioning)

### Annex 22. Mindanao Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Peakpower Budiknon, Inc. Bunker Fired Power Plant	Peakpower Bukidnon, Inc.	Manolo Fortich, Bukidnon	10.4	January 2018	January 2018 (Target Testing and Commissioning)
<b>HYDROPOWER</b>			<b>590.89</b>		
New Bataan	Euro Hydro Power (Asia) Holdings, Inc.	New Bataan, Compostela Valley	2.4	January 2018	March 2018
Manolo Fortich I	Hedcor Bukidnon, Inc.	Santiago, Bukidnon	43.4	January 2018	March 2018
Manolo Fortich 2	Hedcor Bukidnon, Inc.	Santiago, Bukidnon	25.4	January 2018	March 2018
Lake Mainit	Agusan Power Corporation	Jabonga, Agusan del Norte	25	January 2018	March 2018

### Annex 22. Mindanao Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Asiga	Asiga Green Energy Corp.	Santiago, Agusan del Norte	8	August 2019	August 2019 (Target Testing and Commissioning)
Bubunawan Hydroelectric Power Project	First Gen Mindanao Hydropower Corp.	Baungon and Libona, Bukidnon	23	December 2021	December 2021 (Target Testing and Commissioning)
Culaman Hydroelectric Power Project	Oriental Energy and Power Generation Corporation	Manolo Fortich, Bukidnon	10	December 2021	December 2021 (Target Testing and Commissioning)
Katipunan River Mini Hydro Power Project	Repower Energy Development	Cabanglasan, Bukidnon	6.2	December 2021	December 2021 (Target Testing and Commissioning)
Upper Manupali	Bukidnon II Electric Cooperative, Inc.	Valencia City, Bukidnon	4.4	December 2022	December 2022 (Target Testing and Commissioning)

### Annex 22. Mindanao Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Mangima Hydroelectric Power Project	Philnew Hydro Power Corporation	Manolo Fortich, Bukidnon	10	December 2022	December 2022 (Target Testing and Commissioning)
Mat-i-2	Philnew Hydro Power Corporation	Cagayan de Oro, Misamis Oriental	1.6	December 2022	December 2022 (Target Testing and Commissioning)
Mat-i-3	Philnew Hydro Power Corporation	Cagayan de Oro, Misamis Oriental	3.25	December 2022	December 2022 (Target Testing and Commissioning)
Lower Maladugao River Mini-Hydropower Project	Bukidnon Maladugao Hydro Power Corporation	Kalilangan and Wao, Bukidnon	15.7	December 2022	December 2022 (Target Testing and Commissioning)
Maladugao (Upper Cascade) Hydroelectric Power Project	UHPC Bukidnon Hydro Power I Corporation	Kalilangan, Bukidnon	8.4	December 2022	December 2022 (Target Testing and Commissioning)

### Annex 22. Mindanao Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Maramag	Maramag Mini-Hydro Corp	Maramag, Bukidnon	1.4	December 2022	December 2022 (Target Testing and Commissioning)
Manupali	Matic Hydropower Corp	Valencia, Bukidnon	9	December 2022	December 2022 (Target Testing and Commissioning)
Malitbog	Philnewriver Power Corp.	Malitbog, Bukidnon	3.4	December 2022	December 2022 (Target Testing and Commissioning)
Pulanai	Repower Energy Development	Valencia, Bukidnon	10.6	December 2022	December 2022 (Target Testing and Commissioning)
Langaran	Kaltimex Langaran Hydro, Inc.	Calamba, Misamis Occidental	3.60	December 2022	December 2022 (Target Testing and Commissioning)

### Annex 22. Mindanao Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Alamada	Euro Hydro Power (Asia) Holdings, Inc.	Alamada, North Cotabato	2.84	December 2022	December 2022 (Target Testing and Commissioning)
Polandoc	Euro Hydro Power (Asia) Holdings, Inc.	Leon Postigo, Zamboanga del Norte	5.70	December 2022	December 2022 (Target Testing and Commissioning)
Titunod	Euro Hydro Power (Asia) Holdings, Inc.	Kolambogan, Lanao del Norte	3.60	December 2022	December 2022 (Target Testing and Commissioning)
Bayug	Euro Hydro Power (Asia) Holdings, Inc.	Iligan, Lanao del Norte	17.81	December 2022	December 2022 (Target Testing and Commissioning)
Kalaong 1	Alsons Energy Development Corp.	Maitum, Sarangani	7.40	December 2022	December 2022 (Target Testing and Commissioning)

### Annex 22. Mindanao Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Puyo Hydroelectric Power Project	First Gen Mindanao Hydropower Corp.	Jabonga, Agusan del Norte	30	December 2023	December 2023 (Target Testing and Commissioning)
Kalaong 2	Alsons Energy Development Corp.	Maitum, Sarangani	4.80	December 2023	December 2023 (Target Testing and Commissioning)
Sawaga River Mini Hydro Power Project	Repower Energy Development	Malaybalay, Bukidnon	4.5	December 2024	December 2024 (Target Testing and Commissioning)
Cabadbaran Hydroelectric Power Project	First Gen Mindanao Hydropower Corp.	Cabadbaran, Agusan del Norte	9.75	December 2024	December 2024 (Target Testing and Commissioning)
Tagum	Sta. Clara Power Corp.	Maco, Compostela Valley	2.60	December 2024	December 2024 (Target Testing and Commissioning)
Tagoloan	First Gen Mindanao Hydropower Corp.	Impasugong & Sumilao, Bukidnon	39	December 2025	December 2025 (Target Testing and Commissioning)



### Annex 22. Mindanao Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Pasonanca	Philcarbon, Inc.	Zamboanga City	0.5	December 2025	December 2025 (Target Testing and Commissioning)
Clarin	Philnew Hydro Power Corporation	Clarin, Misamis Occidental	5	December 2025	December 2025 (Target Testing and Commissioning)
Mat-i-I	Philnew Hydro Power Corporation	Claveria, Cagayan de Oro	4.85	December 2025	December 2025 (Target Testing and Commissioning)
Lanon (Lam-alu)	Euro Hydro Power (Asia) Holdings, Inc.	Lake Sebu, South Cotabato	9.5	December 2025	December 2025 (Target Testing and Commissioning)
Silo-o	Philnewriver Power Corp.	Malitbog, Bukidnon	3.29	December 2025	December 2025 (Target Testing and Commissioning)
Agus III	Maranao Energy Corporation	Pantar & Balo-I, Lanao del Sur & Lanao del Norte	225	December 2025	December 2025 (Target Testing and Commissioning)

### Annex 22. Mindanao Committed Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
<b>SOLAR</b>			<b>0</b>		
<b>BIOMASS</b>			<b>12</b>		
GEEC Biomass Cogeneration System	Green Earth Enersource Corporation	Maguindanao	3.5	May 2017 (On-going Testing and Commissioning)	March 2018
PTCI Rice Husk-Fired Biomass Cogeneration Facility	Philippine Trade Center, Inc.	Sultan Kudarat, Maguindanao	3	June 2017 (On-going Testing and Commissioning)	March 2018
LPC Rice Husk-Fired Biomass Power Plant Project	Lamsan Power Corporation	Sultan Kudarat, Maguindanao	5.5	November 2017	March 2018
<b>TOTAL</b>			<b>1,332.43</b>		

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
<b>COAL</b>			<b>6,660</b>		
SRPGC 2x350MW Coal-Fired Power Plant Project	St. Raphael Power Generation Corporation	Brgy. San Rafael, Calaca, Batangas	700	July 2019	December 2019
Merbau Coal Fired Thermal Power Plant	Merbau Corporation	Brgy. Pinamukan Ibaba, Batangas City	600	December 2019	Dec 2019 (Target Testing & Commissioning Date)
Masinloc Expansion Project	AES Masinloc Power Partners Co., Inc.	Zambales	300	Unit 4 - June 2020	December 2020 (Target Testing and Commissioning)
H & WB PCB Supercritical Coal-Fired Power Plant	H & WB ASIA PACIFIC (PTE LTD) CORPORATION	Jose Panganiban, Camarines Norte	700	Unit 1 - 4th Quarter 2021 Unit 2 - 4th Quarter 2025	Unit 1 - 4th Quarter 2021 Unit 2 - 4th Quarter 2025
SMC Circulating Fluidized Bed Coal-Fired Power Plant	SMC Global Power	Brgy. Ibabang Polo, Pagbilao, Quezon	600	TBD	TBD

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
SMC Circulating Fluidized Bed Coal-Fired Power Plant	SMC Global Power Holdings Corp.	Sariaya, Quezon	600	TBD	TBD
Quezon Coal Fired Thermal Plant Project	Orion Pacific Prime Energy, Inc.	Tagkawayan, Quezon	1,200	TBD	TBD
Zestpower Coal Thermal Plant	Zestpower Corporation	Mariveles, Bataan	660	TBD	TBD
Lucidum Coal Power Plant	Lucidum Energy, Inc.	Silanguin Bay, Zambales	300	TBD	TBD
2x500 MW KEPCO Pangasinan Coal-Fired Power Plant	KEPCO Philippines Corporation	Sual, Pangasinan	1,000	TBD	TBD
<b>OIL</b>			<b>450</b>		
Aero Derivative Combined Cycle Power Plant	Calamba Aero Power Corporation	Calamba, Laguna	150	TBD	TBD
AC Energy Modular Genset (Diesel) Power Plant	AC Energy DevCo, Inc.	Pililia, Rizal	300	TBD	TBD

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
<b>NATURAL GAS</b>			<b>2816</b>		
1x450 Sta. Maria Power Plant (Phase II)	First Gen Ecopower Solutions Inc.	Santa Rita, Batangas	450	December 2019	June 2020
Batangas CCGT Plant Unit 1	Therma Batangas Gas, Inc.	Brgy. Libjo, Batangas City	300	TBD	TBD
Batangas CCGT Plant Unit 2	Therma Batangas Gas, Inc.	Brgy. Libjo, Batangas City	400	TBD	TBD
Batangas CCGT Plant Unit 3	Therma Batangas Gas, Inc.	Brgy. Libjo, Batangas City	400	TBD	TBD
Sta. Ana CCGT Power Plant	Phinma Energy Corporation	Port Irene, Sta. Ana, Cagayan	383	TBD	TBD
Sual CCGT Floating Power Plant	Phinma Energy Corporation	Brgy. Baquioen, Sual, Pangasinan	383	TBD	TBD
500 MW VIRES LNG-FIRED POWER BARGE PROJECT	VIRES Energy Corporation	Batangas Bay area, Batangas	500	TBD	TBD
<b>GEOHERMAL</b>			<b>130</b>		

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Bacman 4 Botong - Rangas Geothermal Project	Energy Development Corporation	Bacon District, Sorsogon, Sorsogon City	20	December 2022	December 2022 (Target Testing and Commissioning)
Kayabon Geothermal Project	Energy Development Corporation	Manito, Albay	30	December 2025	December 2025 (Target Testing and Commissioning)
Bacon-Manito Geothermal Power Project	Energy Development Corporation	Bacon-Manito, Sorsogon	80	TBD	TBD
<b>HYDROPOWER</b>			<b>2,738.33</b>		
Kabayan 1	Hedcor Benguet, Inc.	Kabayan, Benguet	20	March 2019	March 2019 (Target Testing and Commissioning)
Kabayan 3	Hedcor Benguet, Inc.	Kabayan, Benguet	27	March 2019	March 2019 (Target Testing and Commissioning)
Bineng 1-2b Combination HEPP	Hedcor, Inc.	La Trinidad, Benguet	19	March 2019	March 2019 (Target Testing and Commissioning)

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Tignoan HEP	Aurora All Asia Energy Corp.	Real, Quezon	20	July 2019	July 2019 (Target Testing and Commissioning)
Biyao	AV Garcia Power Systems Corp.	Balbalan, Kalinga	0.8	August 2019	August 2019 (Target Testing and Commissioning)
Ranggas	Clean and Green Energy Solutions, Inc.	Goa & Tigaon, Camarines Sur	1.5	January 2020	January 2020 (Target Testing and Commissioning)
Ibulao I Hydroelectric Power Project	Kiangan Mini-Hydro Corporation	Kiangan, Ifugao	6	September 2020	September 2020 (Target Testing and Commissioning)
Bansud	PTC Energy, Inc.	Mauban, Quezon	1	October 2020	October 2020 (Target Testing and Commissioning)
Maris Main Canal <sup>2</sup> HEP	SN Aboitiz Power Generation	Alfonso Lista, Ifugao	1.75	December 2020	December 2020 (Target Testing and Commissioning)

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
100 MW Alimit	SN Aboitiz Power-Ifugao	Lagawe, Ifugao	100	January 2021	January 2021 (Target Testing and Commissioning)
240 MW Alimit	SN Aboitiz Power-Ifugao	Lagawe, Ifugao	240	January 2021	January 2021 (Target Testing and Commissioning)
Olilicon HEPP	SN Aboitiz Power-Ifugao	Lagawe, Ifugao	10	January 2021	January 2021 (Target Testing and Commissioning)
Cervantes-Mankayan-Bakun HEPP	Hedcor, Inc.	Benguet	27	March 2021	March 2021 (Target Testing and Commissioning)
Addalam	Quirino Resources Development Corporation	Cabarroguis, Quirino	14.20	December 2022	December 2022 (Target Testing and Commissioning)
Chico Hydroelectric Power Project	San Lorenzo Ruiz Piat & Water	Tabuk, Kalinga	150	December 2023	December 2023 (Target Testing and Commissioning)



### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Kibungan Pumped-Storage HEPP	COHECO Badeo Corporation	Kibungan, Benguet	500	TBD	TBD
Ilaguen 4 Hydropower Project	Isabela Power Corporation	Echague, Isabela	10	TBD	TBD
Wawa Pumped Storage 1 HEP	Olympia Violago Water and Power, Inc.	San Mateo, Antipolo, and Rodriguez, Rizal	500	TBD	TBD
Wawa Pumped Storage 2 HEP	Olympia Violago Water and Power, Inc.	San Mateo, Antipolo, and Rodriguez, Rizal	100	TBD	TBD
Wawa Pumped Storage 3 HEP	Olympia Violago Water and Power, Inc.	San Mateo, Antipolo, and Rodriguez, Rizal	50	TBD	TBD
Nabuangan Run-of-River HEP	Strategic Power Development Corp	Apayao	10	TBD	TBD
Dingalan Pumped Storage HEP	Strategic Power Development Corp	Dingalan, Aurora	500	TBD	TBD
San Roque Lower East Pumped Storage	Strategic Power Development Corp	Pangasinan	400	TBD	TBD
Ilaguen HEPP	Isabela Power Corporation	San Mariano and San Guillermo, Isabela	19	TBD	TBD
Kiangan Asin HEPP	Kiangan Mini-Hydro Corporation	Kiangan, Ifugao	7.04	TBD	TBD

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Kiangan Hungduan HEPP	Kiangan Mini-Hydro Corporation	Kiangan, Ifugao	4.04	TBD	TBD
<b>SOLAR</b>			<b>3,259.82</b>		
Botolan Solar Power Project	Solar Power Utilities Generator Corporation	Brgy. San Juan, Botolan, Zambales	39.27	2018	2018 (Target Testing and Commissioning)
Macabud Solar Photovoltaic Power Project	ATN Philippines Solar Energy Group, Inc.	Brgy. Macabud, Rodriguez, Rizal	30	2018	2018 (Target Testing and Commissioning)
Concepcion Solar Power Project	Enfinity Philippines Renewable Resources, Inc	Brgy. Sta. Rosa, Concepcion Tarlac	50.55	2018	2018 (Target Testing and Commissioning)
Cavite Solar Power Project	Enfinity Philippines Renewable Resources, Inc	Cavite Economic Zone, Rosario Cavite	3	2018	2018 (Target Testing and Commissioning)
Cordon Solar PV Power Project	Greenergy Solutions, Inc.	Cordon, Isabela	50	February 2019	February 2019 (Target Testing and Commissioning)

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Earthenergy Solar Power Plant	Earthenergy Corp.	Balayan, Batangas	30	May 2019	May 2019 (Target Testing and Commissioning)
V-Mars Solar Power Project	V-Mars Solar Energy Corporation	San Jose/Lupao, Nueva Ecija	10	December 2019	December 2019 (Target Testing and Commissioning)
SJC Solar Power Project	SJC Solar Power Corporation	San Jose City, Nueva Ecija	10	December 2019	December 2019 (Target Testing and Commissioning)
RGEC Solar Power Project	Roxas Green Energy Corporation	Nasugbu and Tuy, Province of Batangas	30	December 2019	December 2019 (Target Testing and Commissioning)
Calabanga Solar Power Project	Calabanga Renewable Energy Inc.	Calabanga, Camarines Sur	50	December 2019	December 2019 (Target Testing and Commissioning)
FPI Solar PV Power Project	Firmgreen Phils. Inc.	Tarlac City, Tarlac	50	December 2019	December 2019 (Target Testing and Commissioning)

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Nueva Ecija Solar Power Project	Firmgreen Phils. Inc.	Pantabangan, Nueva Ecija	100	December 2019	December 2019 (Target Testing and Commissioning)
Sta. Maria Solar PV Power Project	Greenergy Solutions, Inc.	Sta. Maria, Isabela	125	December 2019	December 2019 (Target Testing and Commissioning)
Solana Solar Photovoltaic (PV) Plant Phase I	Solana Solar Alpha, Inc.	Hermosa, Bataan	24	December 2019	December 2019 (Target Testing and Commissioning)
Solana Solar Photovoltaic (PV) Plant Phase II	Solana Solar Alpha, Inc.	Hermosa, Bataan	14	December 2019	December 2019 (Target Testing and Commissioning)
Sta. Maria Solar Power Project	East Coast Fas Renewable Energy and Industrial Corporation	Sta. Maria, Isabela	30	February 2020	February 2020 (Target Testing and Commissioning)
Santa Solar Power Project	Satrap Power Corporation	Brgy. Nagpanaoan, Santa, Ilocos Sur	20	March 2020	March 2020 (Target Testing and Commissioning)

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Talugtug Solar PV Power Project	Greenery Solutions, Inc.	Talugtug, Nueva Ecija	125	May 2020	May 2020 (Target Testing and Commissioning)
Greenery Capas Solar Power Project	Greenery Solutions, Inc.	Capas, Tarlac	50	May 2020	May 2020 (Target Testing and Commissioning)
Ilagan II Solar PV Power Project	Greenery Solutions, Inc.	Ilagan City, Isabela	100	May 2020	May 2020 (Target Testing and Commissioning)
Cabanatuan Solar Power Plant	Greentech Solar Energy Inc.	Cabanatuan, Nueva Ecija	6.25	April 2020	June 2020
Bongabon Solar Power Plant	Greentech Solar Energy Inc.	Bongabon, Nueva Ecija	18.75	March 2022	April 2022
Magsingal Solar Power Plant	Neoenergy Corporation	Magsingal, Ilocos Sur	100	TBD	TBD
Calamba and Tanauan Solar Power Project	Solar Philippines Tanauan Corporation	Tanauan, Batangas	100	TBD	TBD
Capas Solar PV Power Project	Sindicatum C-Solar Power Inc.	Capas, Tarlac	22	TBD	TBD

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
San Manuel 1 Solar Power Project	Pilipinas Newton Energy Corp.	San Manuel, Pangasinan	70	TBD	TBD
San Manuel 2 Solar Power Project	Pilipinas Einstein Energy Corp.	San Manuel, Pangasinan	70	TBD	TBD
Horus Solar Power Plant Project	Horus Solar Energy Corporation	Morong, Bataan	45	TBD	TBD
Tanauan Batangas Solar I Power Project	Solar Philippines Tanauan Corporation	Tanauan, Batangas	100	TBD	TBD
Bugallon Solar Power Plant	Phinma Energy Corporation	Brgy. Salomague North, Bugallon, Pangasinan	45	TBD	TBD
Laguna Lake Bangyas Solar Power Plant	Nuevo Solar Energy Corporation	Calacan and Victoria, Laguna	25	TBD	TBD
Lumban Solar Power Plant	Nuevo Solar Energy Corporation	Lumban, Laguna	37	TBD	TBD
San Miguel Solar Power Plant	Powersource First Bulacan Solar Inc.	San Miguel, Bulacan	50	TBD	TBD
Tarlac Solar Power Project	Solar Philippines Commercial Rooftop Projects, Inc.	Tarlac City, Tarlac	100	TBD	TBD

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Bawi Solar Power Plant	Phinma Energy Corporation	Lipa City & Padre Garcia, Batangas	45	TBD	TBD
Iba Palauig 1 Solar Power Project	Solar Philippines Commercial Rooftop Projects, Inc.	Iba, Zambales	300	TBD	TBD
Iba Palauig 2 Solar Power Project	Solar Philippines Commercial Rooftop Projects, Inc.	Iba, Zambales	300	TBD	TBD
Energence Solar Power Project	Energence Renewable Energy Corporation	Northern Runway Approach of Clark International Airport, Clark Pampanga	35	TBD	TBD
Balayan Solar Power Project	Solar Philippines Commercial Rooftop Projects, Inc.	Balayan & Calaca, Batangas	200	TBD	TBD
Sta. Rosa Nueva Ecija 2 Solar	Solar Philippines Commercial Rooftop Projects, Inc.	Sta. Rosa, Peñaranda, San Leonardo, Nueva Ecija	450	TBD	TBD
Concepcion Tarlac 2 Solar	Solar Philippines Commercial Rooftop Projects, Inc.	Concepcion City, Tarlac	200	TBD	TBD

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
<b>WIND</b>			<b>1,275.4</b>		
Phase 1: Pasuquin East Wind Power Project	Energy Logics Philippines, Inc.	Pasuquin, Ilocos Norte	48	December 2018	December 2018 (Target Testing and Commissioning)
Balaoi Wind Power Project	Northern Luzon UPC Asia Corporation	Brgy. Balaoi, Pagudpud, Ilocos Norte	45	December 2018	December 2018 (Target Testing and Commissioning)
Sembrano Wind Power Project (Formerly: Phase 2: Mabitac Wind Power Project)	Alternergy Sembrano Wind Corporation	Mt. Sembrano, Mabitac, Laguna	80.4	February 2019	February 2019 (Target Testing and Commissioning)
Pagudpud Wind Power Project	EDC Pagudpud Wind Power Corporation	Brgy. Balaoi and Caunayan, Pagudpud, Ilocos Norte	84	June 2019	June 2019 (Target Testing and Commissioning)
Burgos 2 Wind Power Project	Energy Development Corporation Pagali Burgos Wind Power Corporation	Burgos, Ilocos Norte	183	December 2019	December 2019 (Target Testing and Commissioning)



### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Matnog 1 Wind Power Project	Energy Development Corporation	Matnog, Sorsogon	153	August 2020	August 2020 (Target Testing and Commissioning)
Matnog 2 Wind Power Project	Energy Development Corporation	Matnog, Sorsogon	206	August 2020	August 2020 (Target Testing and Commissioning)
Matnog 3 Wind Power Project	Energy Development Corporation	Matnog, Sorsogon	206	August 2020	August 2020 (Target Testing and Commissioning)
Talisay Wind Power Project	Currimao Solar Energy Corp.	Camarines Norte	50	TBD	TBD
Talim Wind Power Project	Currimao Solar Energy Corp.	Rizal	140	TBD	TBD
Calatagan Wind Power Project	Currimao Solar Energy Corp.	Batangas	80	TBD	TBD
<b>BIOMASS</b>			<b>114.2</b>		
Polillo Biomass Power Plant Project	Renesons Energy Polillo, Inc.	Quezon	1.5	May 2019	May 2019 (Target Testing and Commissioning)

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
NREDC Biomass Power Plant Project	Natures Renewable Energy Development Corporation	Cagayan	24	June 2019	June 2019 (Target Testing and Commissioning)
Santa Biomass Power Project	Satrap Power Corporation	Brgy. Nagpanaoan, Santa, Ilocos Sur	10	June 2019	June 2019 (Target Testing and Commissioning)
EcoMarket Solutions Coconut Waste-Fired Biomass Power Project	EcoMarket Solutions, Inc.	Aurora	2.5	December 2019	December 2019 (Target Testing and Commissioning)
CJ Global Waste-to-Energy Power Project	CJ Global Green Energy Philippines Corp.	Camarines Sur	20	December 2020	December 2020 (Target Testing and Commissioning)
Napier Grass-Fired Biomass Power Plant	Grass Gold Renewable Energy Corp	Nueva Ecija	12	December 2020	December 2020 (Target Testing and Commissioning)
FQBC Biogas Power Plant Project	First Quezon Biogas Corporation	Quezon	1.2	December 2020	December 2020 (Target Testing and Commissioning)

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
HEC Rice Husk-Fired Biomass Power Plant Project	Hypergreen Energy Corporation	Bulacan	12	December 2020	December 2020 (Target Testing and Commissioning)
VSGPC Multi-Feedstock Biomass Power Plant Project	V.S. Gripal Power Corporation	Nueva Ecija	6	January 2021	January 2021 (Target Testing and Commissioning)
Bataan 2020 Multi-Feedstock Cogeneration Power Plant	Bataan 2020, Inc.	Mariveles, Bataan	25	TBD	TBD
<b>BATTERY</b>			<b>230</b>		
AES Battery Storage - Laoag Project	AES Philippines Power Partners Co. Ltd.	Laoag, Ilocos Norte	40	TBD	TBD
AES Battery Storage - Bantay Project	AES Philippines Power Partners Co., LTD.	Bantay, Ilocos Norte	40	TBD	TBD
AES Battery Storage - Masinloc Project Unit 2	AES Philippines Power Partners Co., LTD.	Masinloc, Zambales	10	TBD	TBD

### Annex 23. Luzon Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
AES Battery Storage - Masinloc Project Unit 3	AES Philippines Power Partners Co., LTD.	Masinloc, Zambales	10	TBD	TBD
AES Battery Storage - Masinloc Project Unit 4	AES Philippines Power Partners Co., LTD.	Masinloc, Zambales	10	TBD	TBD
Enerhiya Central Battery Energy Storage Project	SunAsia Energy Inc.	Concepcion, Tarlac	40	TBD	TBD
Enerhiya Sur I Battery Energy Storage Project	SunAsia Energy Inc.	Lemery and Tuy, Calaca, Batangas	40	TBD	TBD
Enerhiya Sur II Battery Energy Storage Project	SunAsia Energy Inc.	Lumban, Laguna	40	TBD	TBD
<b>TOTAL</b>			<b>17,443.75</b>		

\*TBD – To be Determined

### Annex 24. Visayas Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
<b>COAL</b>			<b>300</b>		
SPC Expansion Coal Power Plant Project	SPC Power Corporation	Brgy. Colon, Naga City, Cebu	300	TBD	TBD
<b>NATURAL GAS</b>			<b>138</b>		
Argao Floating CCGT Power Plant	PHINMA Energy Corporation	Brgy. Bulasa, Argao, Cebu	138	TBD	TBD
<b>OIL</b>			<b>95.7</b>		
Datem Energy Northern Samar Diesel Power Plant Project	Datem Energy Corporation	Northern Samar	10	TBD	TBD
Marubeni Diesel Genset Facility	Marubeni Corporation	Isabel, Leyte	70	TBD	TBD
SPC Ubay Diesel Power Plant Project	Supreme Power Corporation	Ubay, Bohol	7.2	TBD	TBD

### Annex 24. Visayas Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Sulzer Diesel Power Plant	General Milling Corporation	GMC Complex, Lapu-Lapu City, Cebu	5.5	TBD	TBD
Caterpillar Diesel Power Plant	General Milling Corporation	GMC Complex, Lapu-Lapu City, Cebu	2	TBD	TBD
Cummins Diesel Power Plant	General Milling Corporation	GMC Complex, Lapu-Lapu City, Cebu	1	TBD	TBD
<b>GEOTHERMAL</b>			<b>40</b>		
Dauin Geothermal Project	Energy Development Corporation	Dauin, Negros Oriental	40	December 2025	December 2025 (Target Testing and Commissioning)
<b>HYDROPOWER</b>			<b>621.6</b>		
Aklan Pumped-Storage Hydropower	Strategic Power Development Corp.	Malay, Aklan	300	February 2024	February 2024 (Target Testing and Commissioning)
Bolusao Pumped Storage	San Lorenzo Samar and Water, Inc.	Lawaan, Eastern Samar	300	March 2024	March 2024 (Target Testing and Commissioning)

### Annex 24. Visayas Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Ilog Hydroelectric Power Plant	PHINMA Energy Corporation	Mabinay, Negros Occidental	21.6	TBD	TBD
<b>SOLAR</b>			<b>791.63</b>		
Grid Tied Solar Farm	E & P Green Energy, Inc.	Biliran, Biliran	25	December 2018	December 2018 (Target Testing and Commissioning)
Tigbauan Solar Power Project	Solexar Energy International, Inc.	Brgy. Cordova Norte and Bantud, Tigbauan, Iloilo	34.3	December 2018	December 2018 (Target Testing and Commissioning)
Victorias Solar Power Project	VictoriaSolar Energy Corp.	Brgy. XII, Victorias City, Negros Occidental	30.63	December 2018	December 2018 (Target Testing and Commissioning)
Ceko Solar PV Project (Daanbantayan Solar PV Power Project)	CEKO Solar Farm Systems Corp.	Brgy. Tominjao, Daanbantayan, Cebu	100	April 2019	April 2019 (Target Testing and Commissioning)

### Annex 24. Visayas Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Silay Phase II Solar Power Project	Silay Solar Power Inc.	Silay City, Negros Occidental	10	April 2019	April 2019 (Target Testing and Commissioning)
Mabinay Solar Power Project	Lohas and Soul Lighting, Inc.	Mabinay, Negros Oriental	90	December 2019	December 2019 (Target Testing and Commissioning)
Bogo V Solar Power Project	Sun Premier Bogo Philippine Corporation	Bogo , Cebu	16.7	May 2020	May 2020 (Target Testing and Commissioning)
Bogo 3 Solar Power Plant	Sun Premier Bogo Philippine Corporation	Bogo , Cebu	15	May 2020	May 2020 (Target Testing and Commissioning)
Sanpalo Solar Power Plant	Sunpalo Solar Energy, Inc.	San Miguel, Leyte	100	September 2020	September 2020 (Target Testing and Commissioning)
Medellin Solar Power Plant	Solar Philippines, Inc.	Medellin, Cebu	300	TBD	TBD



### Annex 24. Visayas Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Puente Al Sol Solar Power Plant	Puente Al Sol, Inc.	Cadiz City, Negros Occidental	70	TBD	TBD
<b>WIND</b>			<b>1,398</b>		
Pulupandan Wind Power Project	First Maxpower International Corporation	Pulupandan, Negros Occidental	50	2018	2018 (Target Testing and Commissioning)
Bronzeoak Wind Power Project	Bronzeoak Philippines, Inc.	Calatrava, Salvador Benedicto and San Carlos, Negros Occidental	100	February 2020	February 2020 (Target Testing and Commissioning)
Iloilo 1 Wind Power Project	Energy Development Corporation	Batad & San Dionisio, Iloilo	213	August 2020	August 2020 (Target Testing and Commissioning)

### Annex 24. Visayas Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Iloilo 2 Wind Power Project	Energy Development Corporation	Concepcion, Iloilo	500	August 2020	August 2020 (Target Testing and Commissioning)
Negros Wind Power Project	Energy Development Corporation	Manapla & Cadiz, Negros Occidental	262	August 2020	August 2020 (Target Testing and Commissioning)
Nabas Wind Power Project Phase II	PetroWind Energy Corporation	Brgy. Pawa, Nabas, Aklan	14	Phase 2 (14 MW) - September 2021	Phase 2 (14 MW) - September 2021 (Target Testing and Commissioning)
Montesol Wind Power Project	Monte Solar Energy, Inc.	Bais City, Manjuyod and Mabinay, Negros Oriental	54	June 2022	June 2022 (Target Testing and Commissioning)
Aklan I Wind Power Project Phase 1-3	Tri-Conti Elements Corporation	Nabas-Malay, Aklan	75	TBD	TBD
Ubay Wind Power Project	Tri-Conti ECC Renewables Corporation	Anda, Candijay & Guindalman, Bohol	80	TBD	TBD

### Annex 24. Visayas Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Ivisan Wind Power Project	Tri-Conti ECC Renewables Corporation	Ivisan, Capiz	50	TBD	TBD
<b>BIOMASS</b>			<b>14.5</b>		
MCEI Multi-Feedstock Biomass Power Plant Project	Megawatt Clean Energy, Inc.	Negros Occidental	12	December 2020	December 2020 (Target Testing and Commissioning)
UGEP Rice Husk-Fired Biomass Power Plant Project	UGEP Ormoc Biomass Power	Leyte	2.5	December 2020	December 2020 (Target Testing and Commissioning)
<b>BATTERY</b>			<b>130</b>		
AES Battery Storage - Kabankalan Project	AES Philippines Power Partners Co., LTD.	Kabankalan, Negros Occidental	40	2018	2018 (Target Testing and Commissioning)
Enerhiya Delas Islas I Battery Energy Storage Project	SunAsia Energy Inc.	Amlan, Negros Oriental	15	TBD	TBD

### Annex 24. Visayas Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Enerhiya Delas Islas II Battery Energy Storage Project	SunAsia Energy Inc.	Ormoc, Leyte	15	TBD	TBD
Enerhiya Delas Islas III Battery Energy Storage Project	SunAsia Energy Inc.	Compostela, Cebu	15	TBD	TBD
Cadiz Energy Storage Project	EQ Energy Storage Inc	Cadiz City, Negros Occidental	15	TBD	TBD
Silay Battery Energy Storage Project	Global Silay Energy Solutions	Silay, Negros Occidental	30	TBD	TBD
<b>TOTAL</b>			<b>3,529.43</b>		

### Annex 25. Mindanao Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
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### Annex 25. Mindanao Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
<b>COAL</b>			<b>1,138</b>		
Ozamis Coal Fired Power Plant Phase 1 - 1 x 150 MW Phase 2 - 1 x 150 MW	Ozamis Power Generation, Inc. (wholly owned subsidiary of Avesco Marketing Corporation)	Brgy. Pulot, Ozamis City, Misamis Occidental	300	Phase 1 - 1 x 150MW - Jun 2021 Phase 2 - 1 x 150MW - Dec 2022	Phase 1 - 1 x 150 MW - June 2021 Phase 2 - 1 x 150 MW - Dec 2022 (Target Testing and Commissioning)
SMC Davao Power Plant Project Phase II	San Miguel Consolidated Power Corporation	Brgy. Culaman, Malita, Davao Occidental	300	TBD	TBD
ZAM 100 MW Circulating Fluidized Bed (CFB) Coal-Fired Power Station	San Ramon Power Inc.	Sitio San Ramon, Brgy. Talisayan, Zamboanga City	100	TBD	TBD
SMC Global Power ( 4 x 82 MW)	SMC Global Power	Brgy. Darong, Santa Cruz, Davao del Sur	328	TBD	TBD
Balingasag Coal-Fired Power Plant	Minergy Coal Corporation	Brgy. Mandangoa, Balingasag, Misamis Oriental	110	TBD	TBD

### Annex 25. Mindanao Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
<b>OIL-BASED</b>			<b>45.216</b>		
TPI Diesel Power Plant	Total Power Incorporated	Mati, Davao Oriental	5.883	TBD	TBD
Nickel Asia Diesel Power Project	Nickel Asia Corporation	Surigao City, Surigao del Norte	10.9	TBD	TBD
Panasia Malita Diesel Power Plant	Panasia Energy, Inc.	Malita, Davao	20	TBD	TBD
MOPP 4 Diesel Power Plant	King Energy Generation Inc.	Brgy. San Isidro, Jimenez, Misamis Oriental	8.433	TBD	TBD
<b>GEOTHERMAL</b>			<b>30</b>		
Mindanao 3 Geothermal Power Project	Energy Development Corporation	Kidapawan, North Cotabato	30	December 2021	December 2021 (Target Testing and Commissioning)
<b>HYDROPOWER</b>			<b>268</b>		
Limbatangon Hydroelectric Power Project	Turbines Resource & Development Corp.	Cagayan de Oro City, Misamis Oriental	9	2018	2018 (Target Testing and Commissioning)

### Annex 25. Mindanao Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Tumalaong Hydroelectric Power Project	First Gen Mindanao Hydropower Corp.	Baungon, Bukidnon	9	2018	2018 (Target Testing and Commissioning)
Kitaotao 1	Hedcor Bukidnon, Inc.	Bukidnon	70	March 2019	March 2019 (Target Testing and Commissioning)
10 MW Cabulig-2 Hydroelectric Power Plant Project	Mindanao Energy Systems, Inc.	Jasaan, Misamis Oriental	10	December 2018	March 2019
Puyo Hydroelectric Power Project	First Gen Mindanao Hydropower Corp.	Jabonga, Agusan del Norte	30	December 2019	December 2019 (Target Testing and Commissioning)
Davao Hydroelectric Power Project	San Lorenzo Ruiz Olympia	Davao City	140	December 2023	December 2023 (Target Testing and Commissioning)
<b>SOLAR</b>			<b>410</b>		
Sumilao Solar Power Project	Sunasia Energy, Inc.	San Vicente, Sumilao, Bukidnon	2	July 2018	July 2018 (Target Testing and Commissioning)

### Annex 25. Mindanao Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
GenSan Solar Power Project Phase I	Del Sol Energy CGS, Inc.	Brgy. Conel, General Santos City, South Cotabato	48	December 2018	December 2018 (Target Testing and Commissioning)
GenSan Solar Power Project Phase II	Del Sol Energy CGS, Inc.	Brgy. Tambler, General Santos City, South Cotabato	48	December 2018	December 2018 (Target Testing and Commissioning)
60 MW General Santos City Solar Power Project	Astroenergy Gensan Inc.	General Santos City, South Cotabato	60	December 2018	December 2018 (Target Testing and Commissioning)
San Francisco Solar Power Project	Gpower Inc.	San Francisco, Agusan del Sur	10	December 2018	December 2018 (Target Testing and Commissioning)
Jasaan Solar Power Project	Lohas and Soul Lighting, Inc.	Jasaan, Misamis Oriental	60	December 2019	December 2019 (Target Testing and Commissioning)
Lal-lo Solar PV Power Plant	Natures Renewable Energy & Development (NAREDCO) Corp.	Maasim, Sarangani	100	TBD	TBD



### Annex 25. Mindanao Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
Solar Power Plant	Ecoglobal, Inc	Zamboanga City Special Economic Zone	30	TBD	TBD
Hayes Solar Power Project	Hayes Solar Energy Corporation	Villanueva, Misamis Oriental	27	TBD	TBD
Opol Solar Power Project	Electra Ecoenergy Corporation	Brgy. Patag, Opol, Misamis Oriental	25	TBD	TBD
<b>BIOMASS</b>			<b>89.4</b>		
12 MW Napier Grass-Fired Biomass Power Plant Project	Manolo Fortich Biomass Energy Corporation	Bukidnon	12	2018	2018 (Target Testing and Commissioning)
10MW Malay-balay Bio-Energy Corporation Multi Feedstock Generating Facility	Malaybalay Bio-Energy Corporation	Bukidnon	10	December 2020	December 2020 (Target Testing and Commissioning)
23.5 MW Woody Biomass Power Plant Project	CARAGA Renewable Energy Corporation	Agusan del Norte	23.5	December 2020	December 2020 (Target Testing and Commissioning)

### Annex 25. Mindanao Indicative Power Projects as of 31 December 2017

Name of the Project	Project Proponent	Location	Installed Capacity (MW)	Target Testing & Commissioning	Target Commercial Operation
NAREDCO Biogas Power Plant	Natures Renewable Energy Development Corporation	Lal-lo, Cagayan	24	December 2020	December 2020 (Target Testing and Commissioning)
Napier Grass-Fired Biomass Power Plant Project	Pilipinas Joule Energy Corporation	Bukidnon	5	December 2020	December 2020 (Target Testing and Commissioning)
Bagasse-Fired Co-generation Power Plant	Crystal Sugar, Inc.	Maramag, Bukidnon	14.9	TBD	TBD
<b>TOTAL</b>			<b>1,980.62</b>		

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