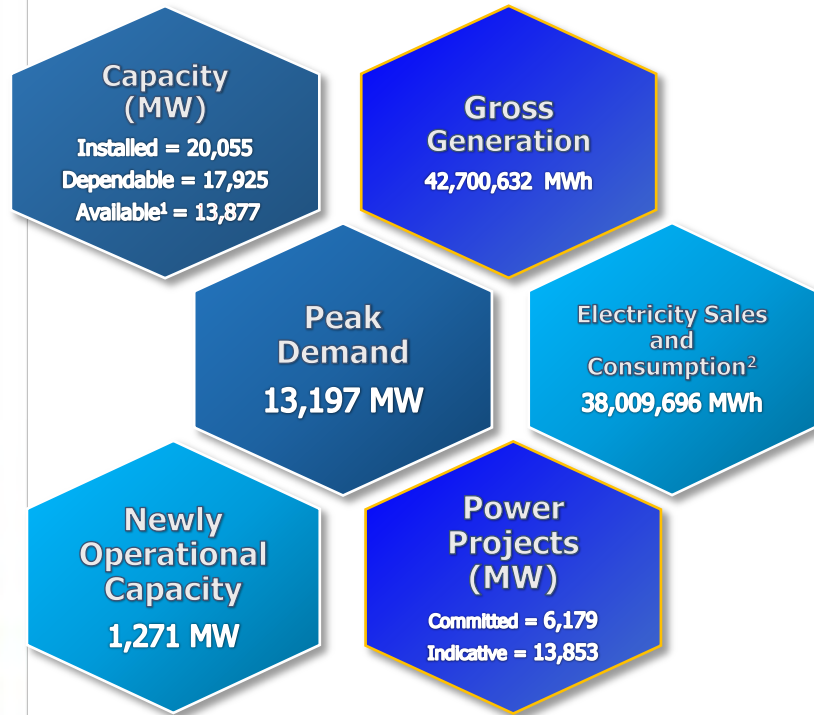




JANUARY-JUNE 2016 POWER SITUATION HIGHLIGHTS



¹Total Average Available Capacity
²Preliminary Data as of May 2016

Philippine Power Demand-Supply Situation remained stable in the First Quarter of 2016 despite the onset of strong El Niño which generally resulted in increased peak demand levels in the three Grids. On the supply side, hydro capacities especially in Mindanao decreased. Several yellow and red alerts were declared by the system operator in Luzon and Visayas during the summer period of April to May 2016. However, the Energy Sector's El Niño Mitigation Measures alongside with the preparation for the 09 May 2016 National and Local Elections stabilized the power situation during the critical periods. These measures include the activation of the Interruptible Load Program (ILP), ensuring minimal forced outages, management of power plant maintenance schedules and optimization of hydro capacities specifically in Mindanao.

Definition of Terms

Installed Capacity

- maximum amount of electricity that the power plant can produce
- total manufacturer-rated capacity of equipment (as indicated in the nameplate)

Dependable Capacity

- load carrying ability of an electric power plant or a generating unit
- capacity that can be relied upon (monthly or annually)

Available Capacity

- current available capacity of an electric power plant
- ability of a power plant or a generating unit to produce electricity in a certain time period (hourly or daily)

Gross Generation - total generation of electricity by an electrical power plant

Peak Demand - maximum electrical demand occurring at any given period of time

Electricity Sales - actual energy sold by Distribution Utilities (DUs) to the residential, commercial, industrial and others sectors

Electricity Consumption - electricity sales plus the own-use consumption of power plant and systems loss

Committed Power Projects - private sector initiated power projects which have already secured financial closing

Indicative Power Projects - private sector initiated projects which have already applied for DOE Endorsement for the conduct of the System Impact Study (SIS) and yet to secure financial closing

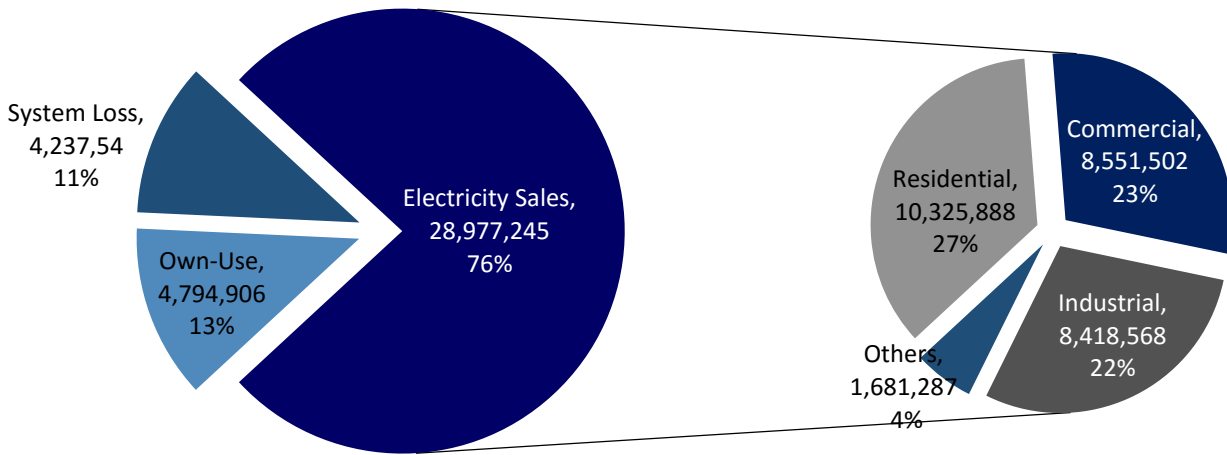
Interruptible Load Program - a demand-side management program which allows big end-users to disconnect from the grid, use their own generators, and get an ERC-approved compensation

Note: Due to rounding totals may not correspond to the sum of all figures



January - June 2016 Philippine Power Demand

Electricity Consumption = 38,009,696 MWh

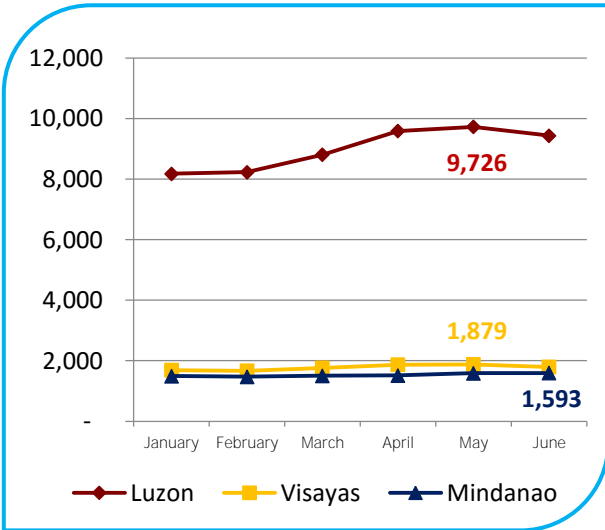


Electricity Sales and Consumption, per Grid (MWh)

	Luzon	Visayas	Mindanao
Residential	7,465,905 25%	1,421,865 38%	1,438,119 37%
Commercial	7,478,511 25%	476,071 13%	596,920 15%
Industrial	6,592,978 22%	596,405 16%	1,229,184 31%
Others	1,105,503 4%	337,560 9%	238,224 6%
Own-Use	4,779,351 16%	6,822 0%	8,734 0%
Systems Loss	2,918,793 10%	894,360 24%	424,392 11%
TOTAL	30,341,041	3,733,082	3,935,573

Note: Preliminary Data as of May 2016

Peak Demand (MW)



Note: Peak Demand for Visayas and Mindano is expected to occur in the latter part of 2016

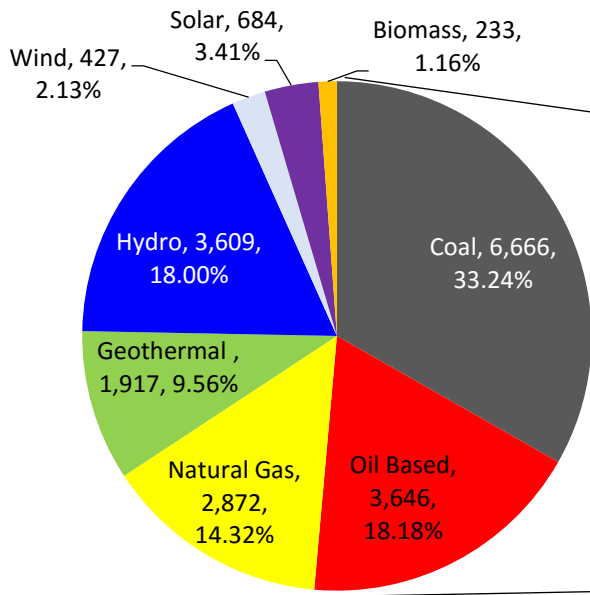
Luzon reached new all-time high system peak demand at 9,726 MW which occurred on 03 May 2016, 2:00 PM with corresponding 11,137 MW available capacity. This is 9% higher than the 2015 peak demand at 8,928 MW.

Highest system peak demand in Visayas at 1,878 MW occurred on 11 May 2016, 2:00 PM with corresponding 2,141 MW available capacity. This is 6% higher than the 2015 peak demand at 1,768 MW.

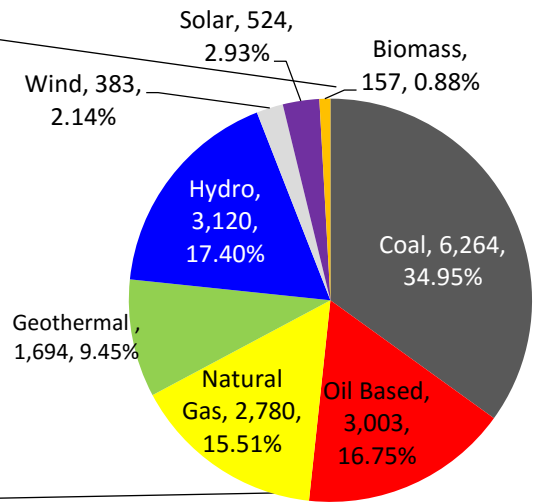
Highest system peak demand in Mindanao at 1,593 MW occurred on 08 June 2016, 1:35 PM with corresponding 1,641 MW Available Capacity. This is 5% higher than the 2015 peak demand at 1,517 MW.



January - June 2016 Philippine Power Supply

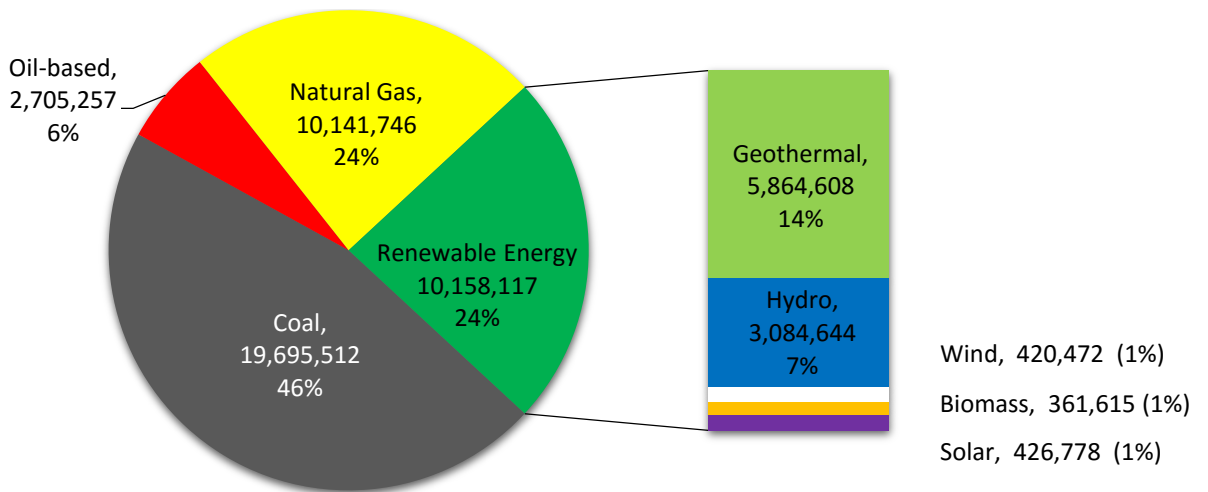


Installed Capacity = 20,055 MW



Dependable Capacity = 17,925 MW

- Renewable Energy plants (geothermal, hydro, wind, biomass and solar) constitute the largest share in the total installed capacity as of June 2016 with 34.3% share.
- Coal power plants remain the major source of Philippine Power Generation at 46%, with additional plants to come online in the latter part of 2016.
- Additional capacities from January-June 2016 mainly comprised coal and solar power plants which added 703 MW and 520 MW to the total installed capacity. Other additional capacities from January-June 2016 are oil, hydro and biomass at 36MW, 1MW and 12MW respectively.
- Capacities which will be coming in the pipeline from July 2016 to December 2026 are largely composed of coal power projects with 6,179 MW committed and 13,853 MW indicative capacities.



Gross Generation = 42,700,633 MWh

* Data as of June 2016



Luzon Installed, Dependable and Available Capacity from January-June 2016 (in MW)

Luzon					
Fuel Type	Installed	Dependable	Available		
			Min	Max	Average
Coal	5,247	4,928	2,419	4,848	3896
Oil Based	2,133	1,785	720	1,446	1,233
Natural Gas*	2,871	2,780	2,115	2,758	2,688
Renewable Energy	4,098	3,616	1,458	3,342	2,544
<i>Geothermal</i>	<i>844</i>	<i>777</i>	<i>378</i>	<i>511</i>	<i>482</i>
<i>Hydro*</i>	<i>2,537</i>	<i>2,271</i>	<i>1,058</i>	<i>2,280</i>	<i>1,827</i>
<i>Wind</i>	<i>337</i>	<i>293</i>	<i>1</i>	<i>286</i>	<i>82</i>
<i>Biomass</i>	<i>95</i>	<i>71</i>	<i>20</i>	<i>60</i>	<i>46</i>
<i>Solar</i>	<i>284</i>	<i>204</i>	<i>1</i>	<i>205</i>	<i>107</i>
TOTAL	14,348	13,109	6,712	12,394	10,361

662 MW

- Newly Operational Plants

637 MW

- Testing and Commissioning

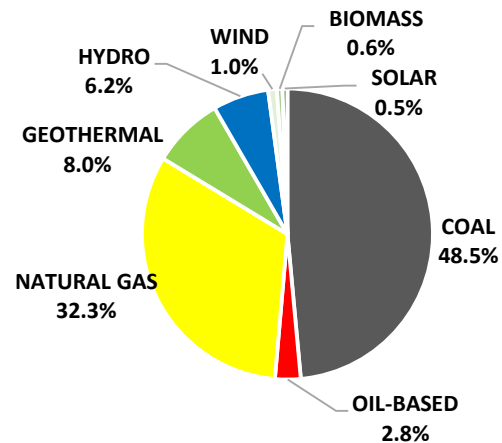
3,886 MW

- Committed Projects

9,116 MW

- Indicative Projects

Gross Power Generation (January-June 2016) 31,388,751 MWh



SIGNIFICANT INCIDENTS

- Fire incident of an oil depot nearby during the commercial operation of SLTEC Unit 2 in Calaca, Batangas deferred target date from 20 March 2016 to 21 March 2016.
- Luzon grid experienced 16 automatic load dropping (ALD) during the first half of 2016. Most of ALDs occurred in the month of June which experienced seven (7) ALDs due to tripping of power plants with large capacities. The maximum load that was dropped was 330 MW on 12 January 2016 caused by tripping of Sual Unit 1. While the maximum unserved energy was 116.8 MWh on 2 June 2016 due to sudden load dropping of Calaca Unit 2. On the average, most of the outages caused by the load dropping were not sustained for more than 12 minutes.
- Yellow Alert occurred once in April 2016 due to tight supply caused by forced outages, planned outages of power plants and limited dispatch of hydro as an effect of El Niño. It is then followed by a Red Alert the next day for the same reason.
- For the month of June 2016, Luzon grid experienced five (5) Yellow Alert occurrences due to tripping and maintenance of power plants with large capacities.

* Adjusted due to 10MW and 8 MW increase in installed capacity of San Lorenzo Natural Gas and Binga Hydro Power Plant



Visayas Installed, Dependable and Available Capacity from January-June 2016 (in MW)

Visayas					
Fuel Type	Installed	Dependable	Available		
			Min	Max	Average
Coal	769	761	451	760	636
Oil Based	685	469	209	416	378
Natural Gas	1	0	0	0	0
Renewable Energy	1,509	1,268	663	1,207	1,005
<i>Geothermal</i>	<i>965</i>	<i>813</i>	<i>627</i>	<i>765</i>	<i>710</i>
<i>Hydro</i>	<i>11</i>	<i>11</i>	<i>2</i>	<i>16</i>	<i>5</i>
<i>Wind</i>	<i>90</i>	<i>90</i>	<i>5</i>	<i>89</i>	<i>48</i>
<i>Biomass</i>	<i>101</i>	<i>77</i>	<i>5</i>	<i>62</i>	<i>39</i>
<i>Solar</i>	<i>342</i>	<i>278</i>	<i>24</i>	<i>275</i>	<i>203</i>
TOTAL	2,965	2,498	1,323	2,383	2,019

281 MW

• Newly Operational Plants

246 MW

• Testing and Commissioning

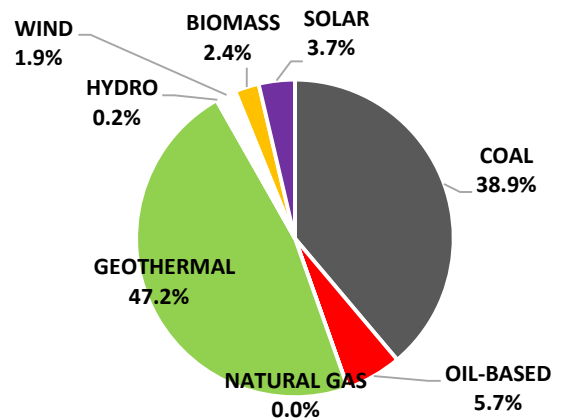
608 MW

• Committed Projects

2,509 MW

• Indicative Projects

Gross Power Generation (January-June 2016) 6,267,369 MWh



SIGNIFICANT INCIDENTS

- Various load dropping incidents occurred in the Visayas grid within the first half of 2016. It can be noted that the first level of automatic load dropping (ALD) was activated on 23 January 2016 and 03 March 2016 due to sudden load reduction of Solar Power Plants and tripping of geothermal units.
- Large coal fired power plants such as the 82 MW PEDC Unit 1 (27 December 2015 to 24 January 2016) and 103 MW KSPC Unit 2 (04 to 18 January 2016) were on scheduled Planned Maintenance during the early part of 2016.
- Several Forced Outages (FO) occurred which resulted to tightening of supply in the Visayas Grid:
 - 82 MW PEDC U1 - 08 February to 14 March 2016
 - 82 MW CEDC U3 - 11 to 24 April 2016
 - 103 MW KSPC U1 - 22 to 24 May 2016
- There were frequent issuances of Yellow Alert Status in Visayas during the first half of 2016 especially in the evening primarily due to the increase in electricity demand and decrease in output of Solar Plants and some planned maintenance and forced outages.



MINDANAO

Mindanao Installed, Dependable and Available Capacity from January-June 2016 (in MW)

Fuel Type	Mindanao				
	Installed	Dependable	Available		
			Min	Max	Average
Coal	650	575	337	608	503
Oil Based	828	749	309	656	524
Natural Gas	0	0	0	0	0
Renewable Energy	1,264	994	249	751	470
<i>Geothermal</i>	<i>108</i>	<i>104</i>	<i>83</i>	<i>104</i>	<i>99</i>
<i>Hydro</i>	<i>1,061</i>	<i>837</i>	<i>165</i>	<i>597</i>	<i>341</i>
<i>Wind</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>Biomass</i>	<i>36</i>	<i>10</i>	<i>0</i>	<i>8</i>	<i>5</i>
<i>Solar</i>	<i>59</i>	<i>43</i>	<i>1</i>	<i>41</i>	<i>25</i>
TOTAL	2,742	2,318	895	2,014	1,497

328 MW

• Newly Operational Plants

138 MW

• Testing and Commissioning

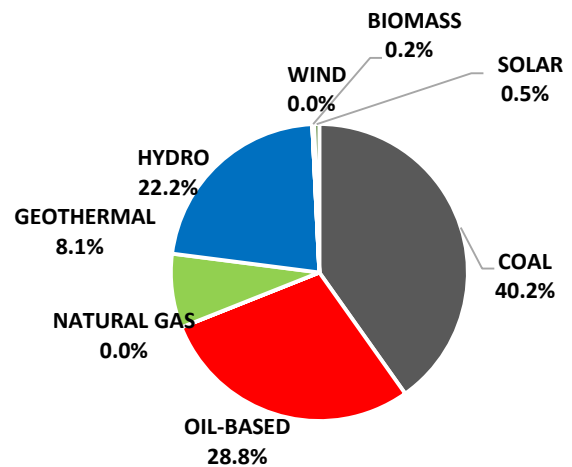
1,685 MW

• Committed Projects

2,228 MW

• Indicative Projects

Mindanao Gross Power Generation (January-June 2016)
5,044,512 MWh



SIGNIFICANT INCIDENTS

- El Niño affected the operation of the Hydro Power Plants in Mindanao which caused curtailments to some Distribution Utilities which do not have enough supply contracts to cover the deficiency of NPC-PSALM through the Agus and Pulangi Hydroelectric Power Plants:
 - Average Available Capacity of Agus and Pulangi from January to May 2016 was at 253.1 MW, with the lowest available capacity occurring last 4 April 2016 at 129.4 MW.
 - Water level of Lanao Lake breached the minimum operating level of 899.15 masl and reached the lowest level for this year at 699.0 masl last 23 April 2016.
 - Compared to the occurrence in 2010, the 2015-2016 El Niño had lesser impact because of the commercial operation of coal power plants such as the 2x150 MW TSI Coal and 118 MW SEC Coal.
- Upon the directive of President Benigno S. Aquino III to ensure sufficient and uninterrupted power supply and at the same time secure the transmission facilities during the conduct of the 2016 Elections, the Inter-Agency Task Force on Securing Facilities (IATFSEF) was created on 27 January 2016. IATFSEF is yet to address two remaining issues:
 - Repair of Tower No. 25 located along the Agus 2 – Kibawe 138 kV Line, which was bombed last 24 December 2015.
 - Clearing of tall trees under the transmission facilities, specifically along the Agus 2- Baloi 138 kV Line.