Energy Investment Opportunities

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Undersecretary
Department of Energy

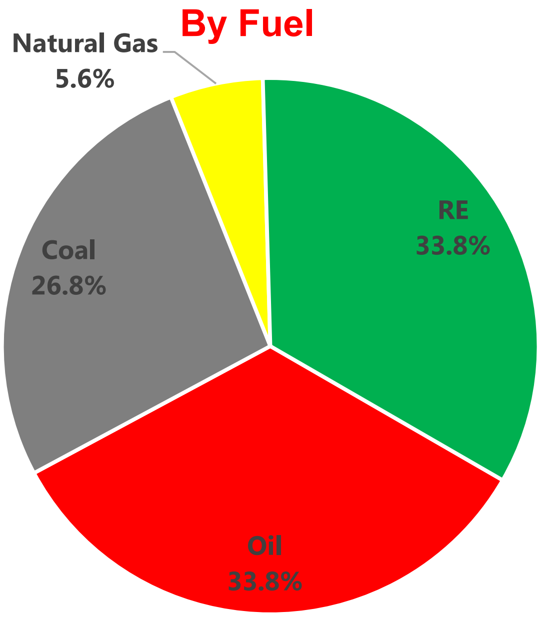
Energy Investment Forum 2018
04 December 2018
Shangri-La at the Fort, BGC, Taguig City

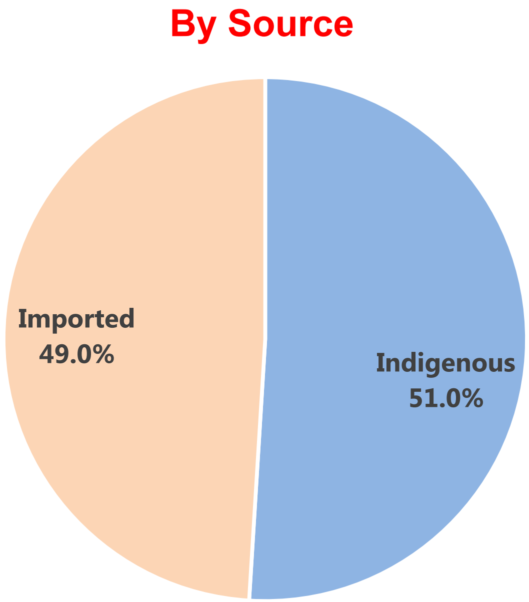
Presentation Outline

- Philippines Energy Situationer
- Power Supply and Demand Outlook
- Policy Initiatives
- Investment Opportunities

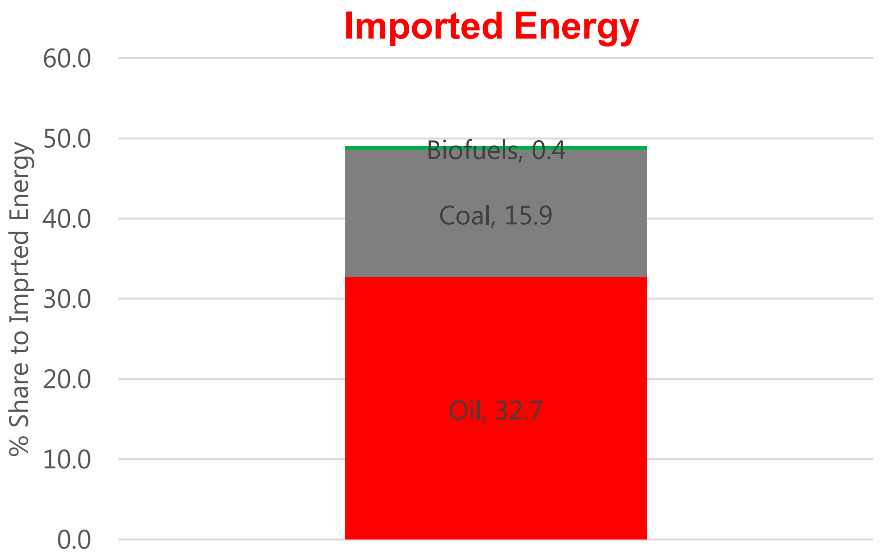
Energy Situationer

2017 Total Primary Energy Supply



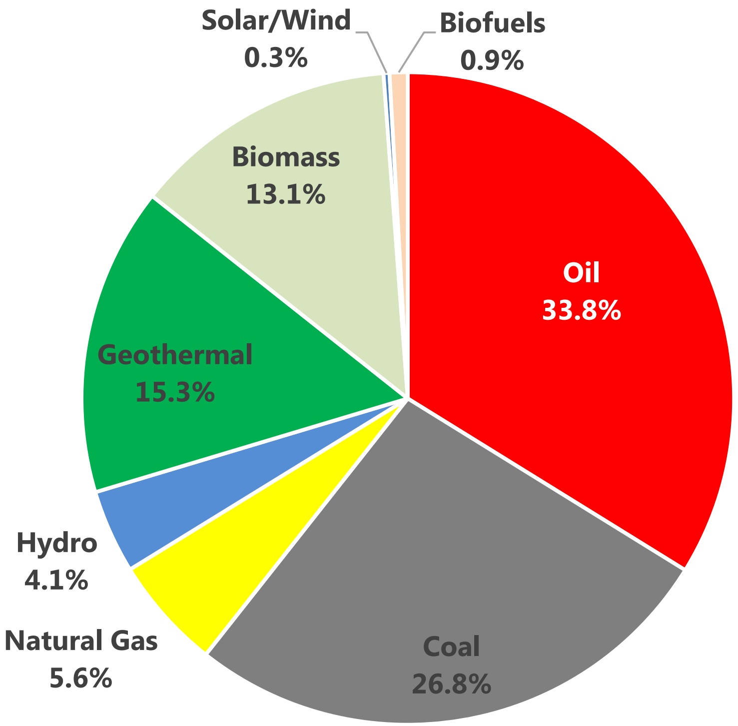


Total Energy	57.71 MTOE
Self-Sufficiency	51.0%
Renewable Energy (RE)	33.8%
Clean Energy (RE + Nat Gas)	39.4%

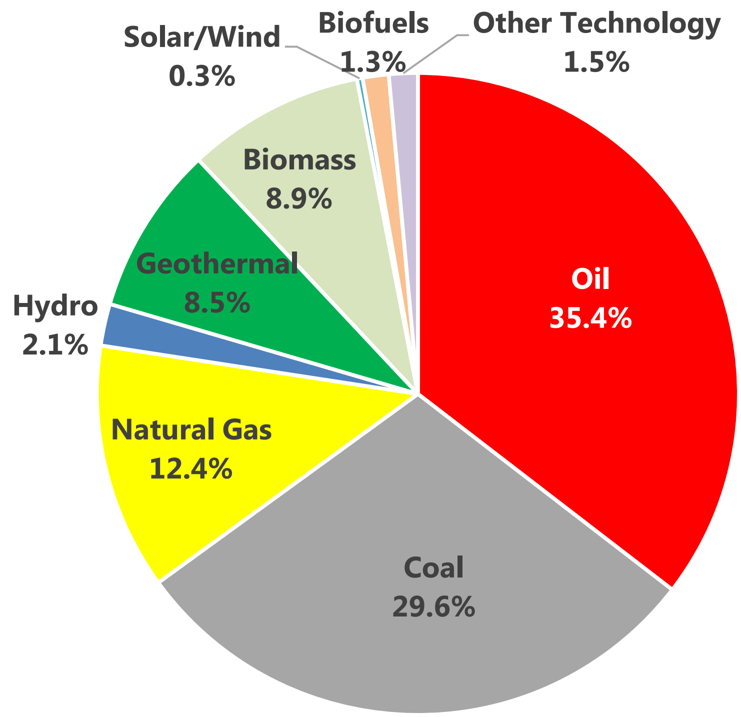


** Preliminary as of 24 April 2018*

Total Primary Energy Supply, 2017 and 2040

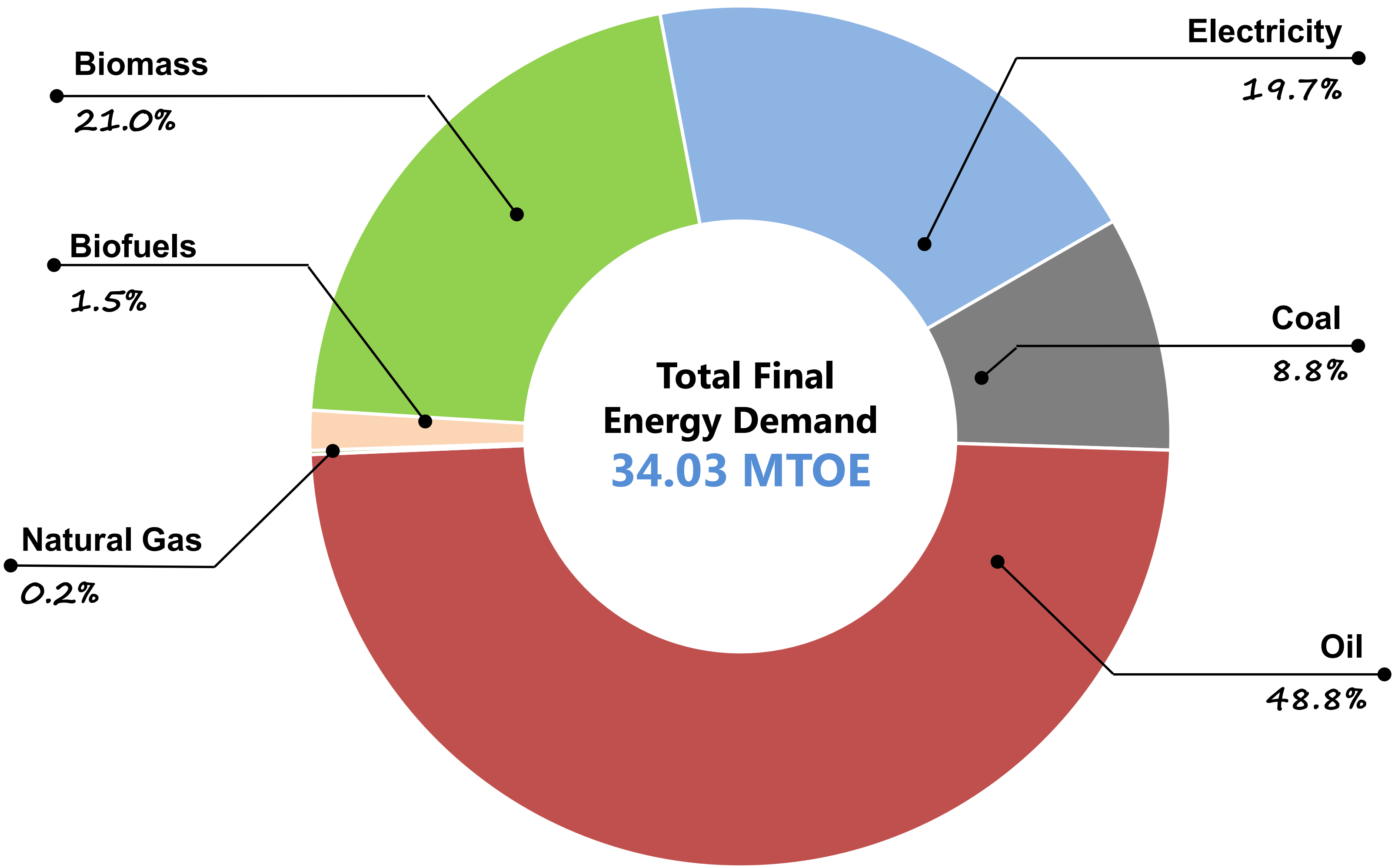


2017 (preliminary)
Total Energy: 57.7 MTOE



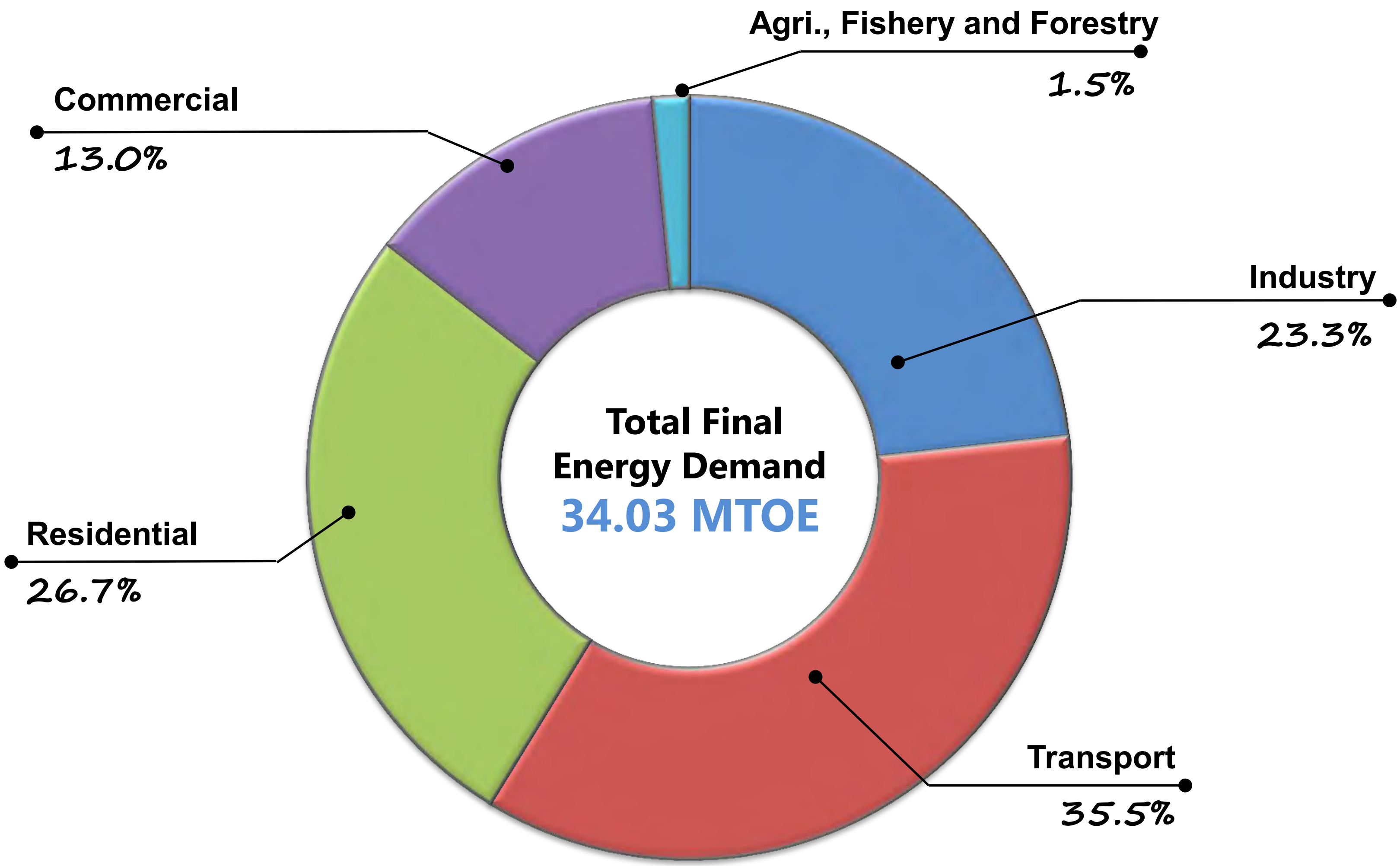
2040 Outlook
Total Energy: 137.8 MTOE

2017 Total Final Energy Consumption by Fuel



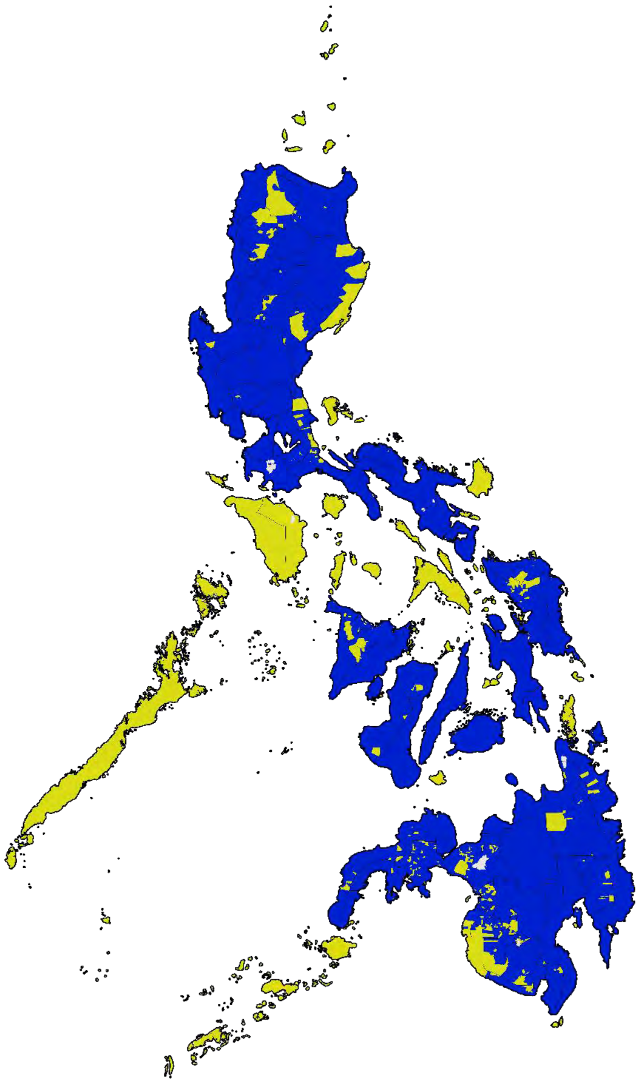
** Preliminary as of 24 April 2018*
*** Excludes non-energy used*

2017 Total Final Energy Consumption by Sector



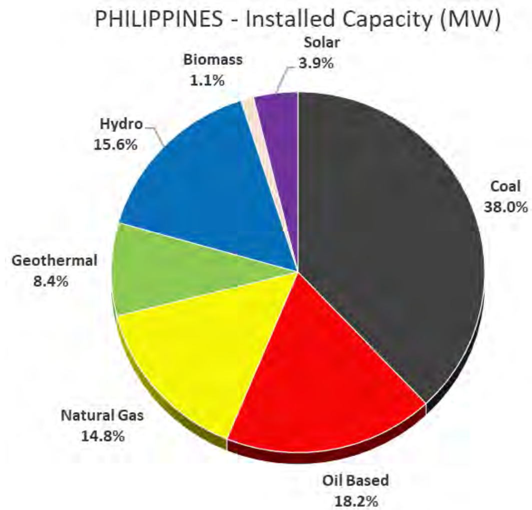
* Preliminary as of 24 April 2018
** Excludes non-energy used

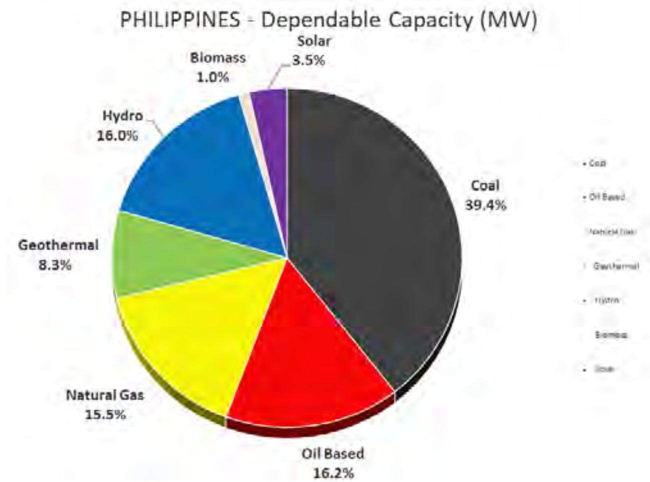
Philippines Capacity Mix



Legend:
Grid-Connected
Off-grid

FUEL TYPE	PHILIPPINES (GRID AND OFF-GRID)			
	Capacity (MW)		Percent Share (%)	
	Installed	Dependable	Installed	Dependable
Coal	**8,838**	**8,370**	**37.3**	**38.7**
Oil Based	**4,239**	**3,445**	**17.9**	**15.9**
Diesel	*2,786*	*2,375*	*11.8*	*11.0*
Oil Thermal	*650*	*530*	*2.7*	*2.4*
Gas Turbine	*803*	*540*	*3.4*	*2.5*
Natural Gas	**3,453**	**3,286**	**14.6**	**15.2**
Renewable Energy	**7,158**	**6,547**	**30.2**	**30.2**
Geothermal	*1,944*	*1,770*	*8.2*	*8.2*
Hydro	*3,632*	*3,401*	*15.3*	*15.7*
Biomass	*258*	*208*	*1.1*	*1.0*
Solar	*896*	*740*	*3.8*	*3.4*
Wind	*427*	*427*	*1.8*	*2.0*
TOTAL	**23,687**	**21,648**	**100.0**	**100.0**

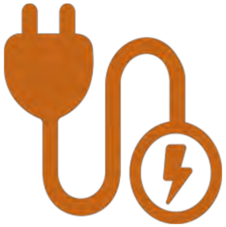




Source: DOE List of Existing Power Plants as of 30 June 2018, released 25 September 2018
US Energy Information Agency (EIA)

Power Supply and Demand Outlook

2017 Power Demand and Supply Snapshot



Peak Demand

13,789 MW

Electricity Sales and Consumption

94,370 GWh

Gross Generation

94,370 GWh

Capacity

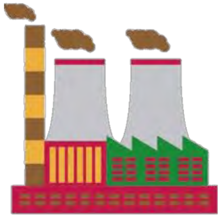
Installed - 22,728 MW

Dependable - 20,515 MW

Available - 14,458 MW

Newly Operational Installed Capacity

835 MW

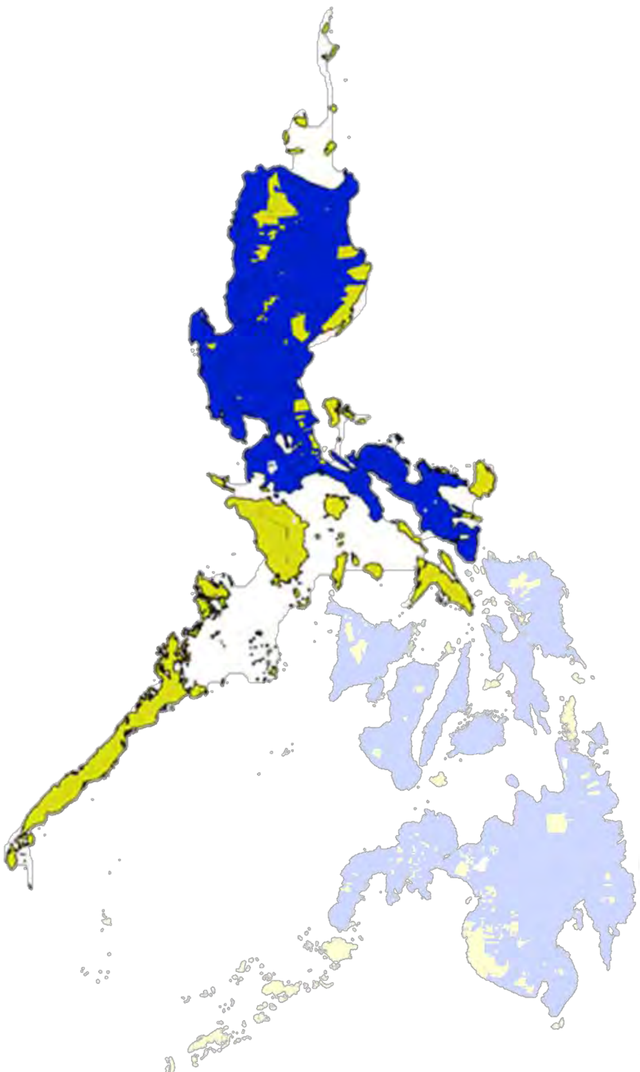


Power Project Capacity

Committed - 6,511 MW

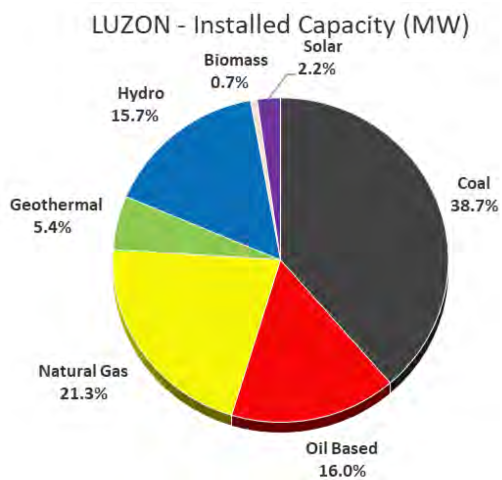
Indicative - 17,444 MW

Luzon Capacity Mix



Legend:
Grid-Connected
Off-grid

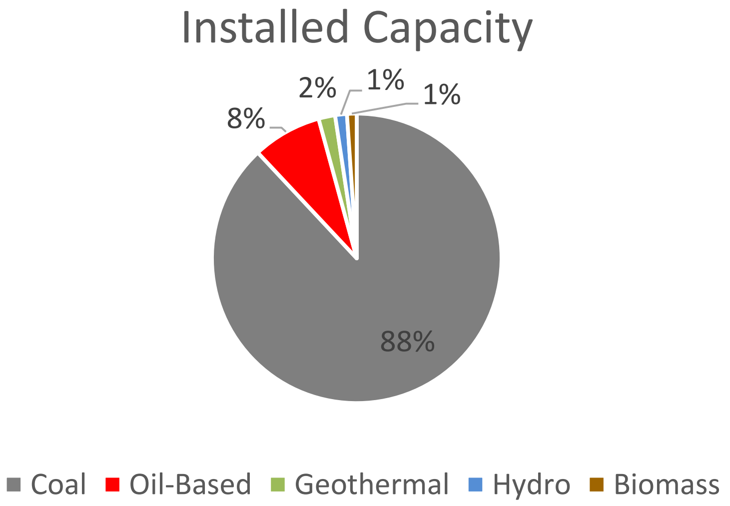
FUEL TYPE	LUZON (GRID AND OFF-GRID)			
	Capacity (MW)		Percent Share (%)	
	Installed	Dependable	Installed	Dependable
Coal	**6,264**	**5,970**	**37.9**	**38.9**
Oil Based	**2,596**	**2,077**	**15.7**	**13.5**
Diesel	*1,198*	*1,007*	*7.2*	*6.6*
Oil Thermal	*650*	*530*	*3.9*	*3.5*
Gas Turbine	*748*	*540*	*4.5*	*3.5*
Natural Gas	**3,452**	**3,286**	**20.9**	**21.4**
Renewable Energy	**4,222**	**3,999**	**25.5**	**26.1**
Geothermal	*871*	*805*	*5.3*	*5.3*
Hydro	*2,547*	*2,473*	*15.4*	*16.1*
Biomass	*106*	*84*	*0.6*	*0.5*
Solar	*362*	*301*	*2.2*	*2.0*
Wind	*337*	*337*	*2.0*	*2.2*
TOTAL	**16,533**	**15,332**	**100.0**	**100.0**

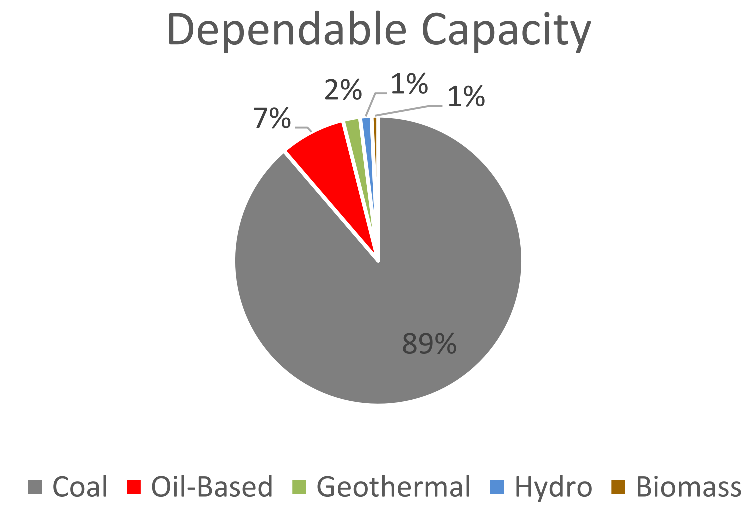


Source: DOE List of Existing Power Plants as of 30 June 2018, released 25 September 2018
US Energy Information Agency (EIA)

Luzon Newly Operational Power Plants

POWER PLANT		CAPACITY, MW		LOCATION	OPERATOR
FACILITY NAME	SUBTYPE	INS	DEP	MUNICIPALITY / PROVINCE	
COAL		**570.0**	**555.0**		
PAGBILAO U3	Pulvurized Sub Critical Coal	420.0	420.0	Pagbilao, Quezon	Pagbilao Energy Corporation (PEC)
SCPC U3	Circulating Fluidized Bed (CFB) Coal	150.0	135.0	Limay, Bataan	SMC Consolidated Power Corporation
OIL-BASED		**50.0**	**46.0**		
SLPGC U3	Modular Gas Turbine	25.0	23.0	Calaca, Batangas	Southwest Luzon Power Generation Corporation
SLPGC U4	Modular Gas Turbine	25.0	23.0	Calaca, Batangas	Southwest Luzon Power Generation Corporation
GEOTHERMAL		**12.0**	**12.0**		
MAIBARARA U2	Flash Type Steam recovery	12.0	12.0	Sto. Tomas, Batangas	Maibarara Geothermal Inc.
HYDRO		**8.5**	**8.0**		
MARIS 1 MAIN CANAL	Run-of-River type HEPP	8.5	8.0	Ramon, Isabela	SN Aboitiz Power Magat, Inc.
BIOMASS		**7.0**	**4.6**		
ACNC	Biogas	2.0	0.6	Tarlac City, Tarlac	Asian Carbon Neutral Power Corporation
BBEC	Rice Husk-fired Cogeneration Plant	5.0	4.0	Pili, Camarines Sur	Bicol Biomass Energy Corporation
SJC IPOWER PHASE II	Rice Husk-fired Cogeneration Plant	12.0	10.8	San Jose City, Nueva Ecija	San Jose City I Power Corporation
TOTAL NEW CAPACITY FOR 1H 2018 (MW)		**647.5**	**625.6**		

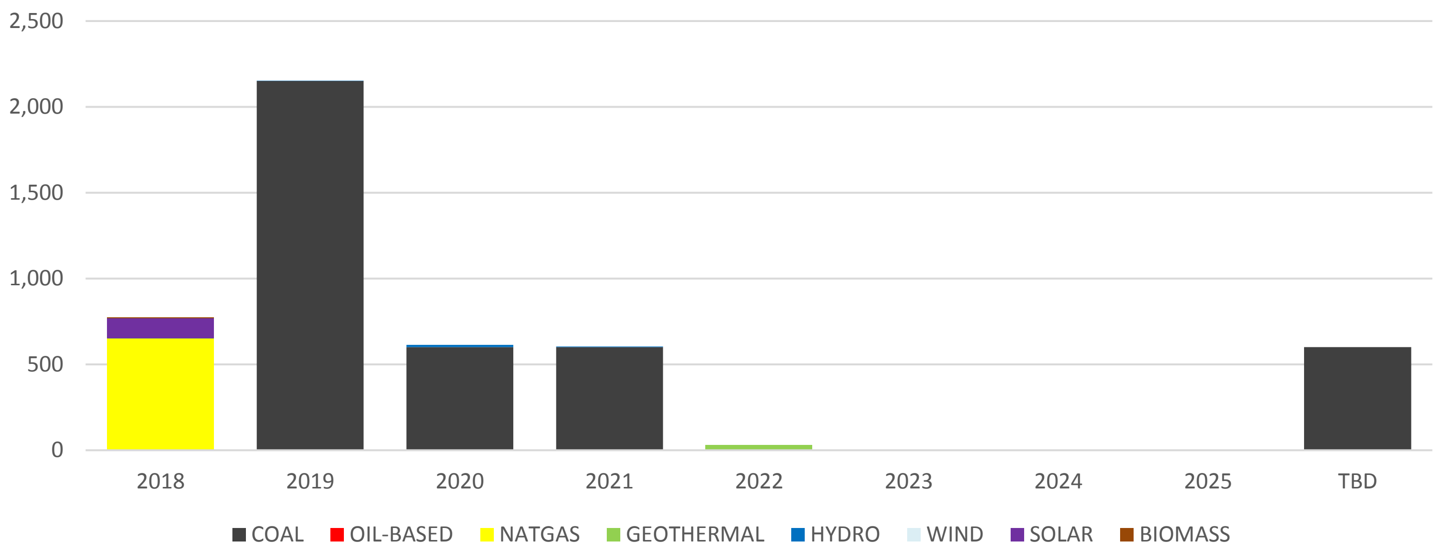




Source: DOE List of Existing Power Plants as of 30 June 2018, released 25 September 2018

Luzon Committed Power Projects

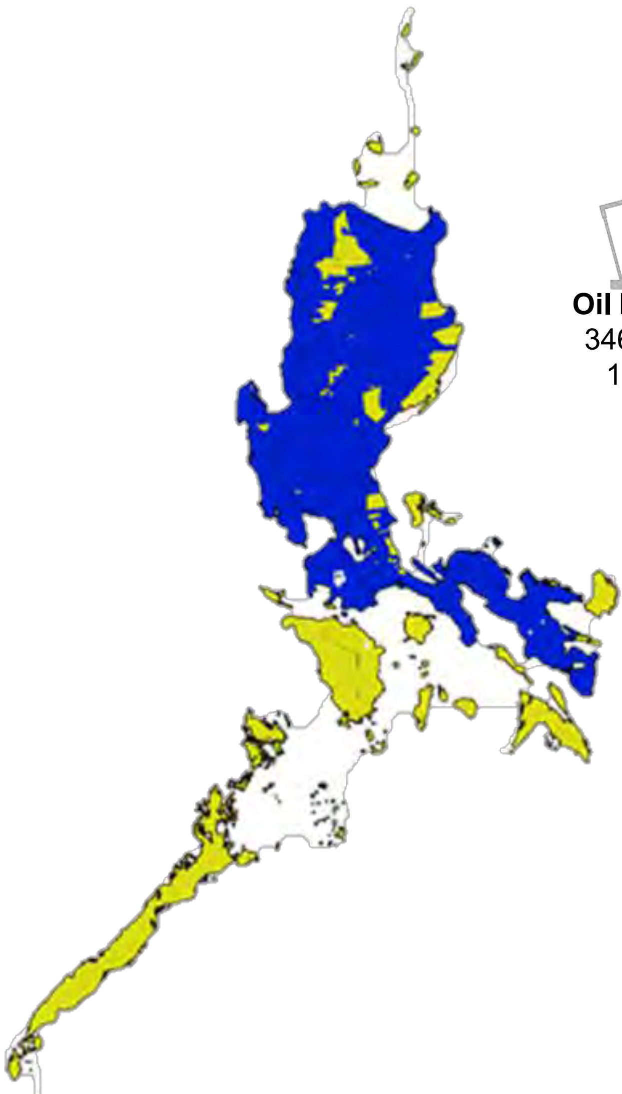
Plant Type	2018	2019	2020	2021	2022	2023	2024	2025	TBD	TOTAL by Type
COAL	0	2,150	600	600	0	0	0	0	600	3,950.00
OIL-BASED	0	0	0	0	0	0	0	0	0	0.00
NATGAS	650	0	0	0	0	0	0	0	0	650.00
GEOTHERMAL	0	0	0	0	31	0	0	0	0	31.00
HYDRO	3	3	12.6	4	0	0	0	0	0	22.60
WIND	0	0	0	0	0	0	0	0	0	0.00
SOLAR	115	0	0	0	0	0	0	0	0	115.00
BIOMASS	6.2	0	0	0	0	0	0	0	0	6.20
TOTAL by year	774.20	2,153.00	612.60	604.00	31.00	0.00	0.00	0.00	600.00	4,774.80
BESS	0	0	0	0	0	0	0	0	0	0.00



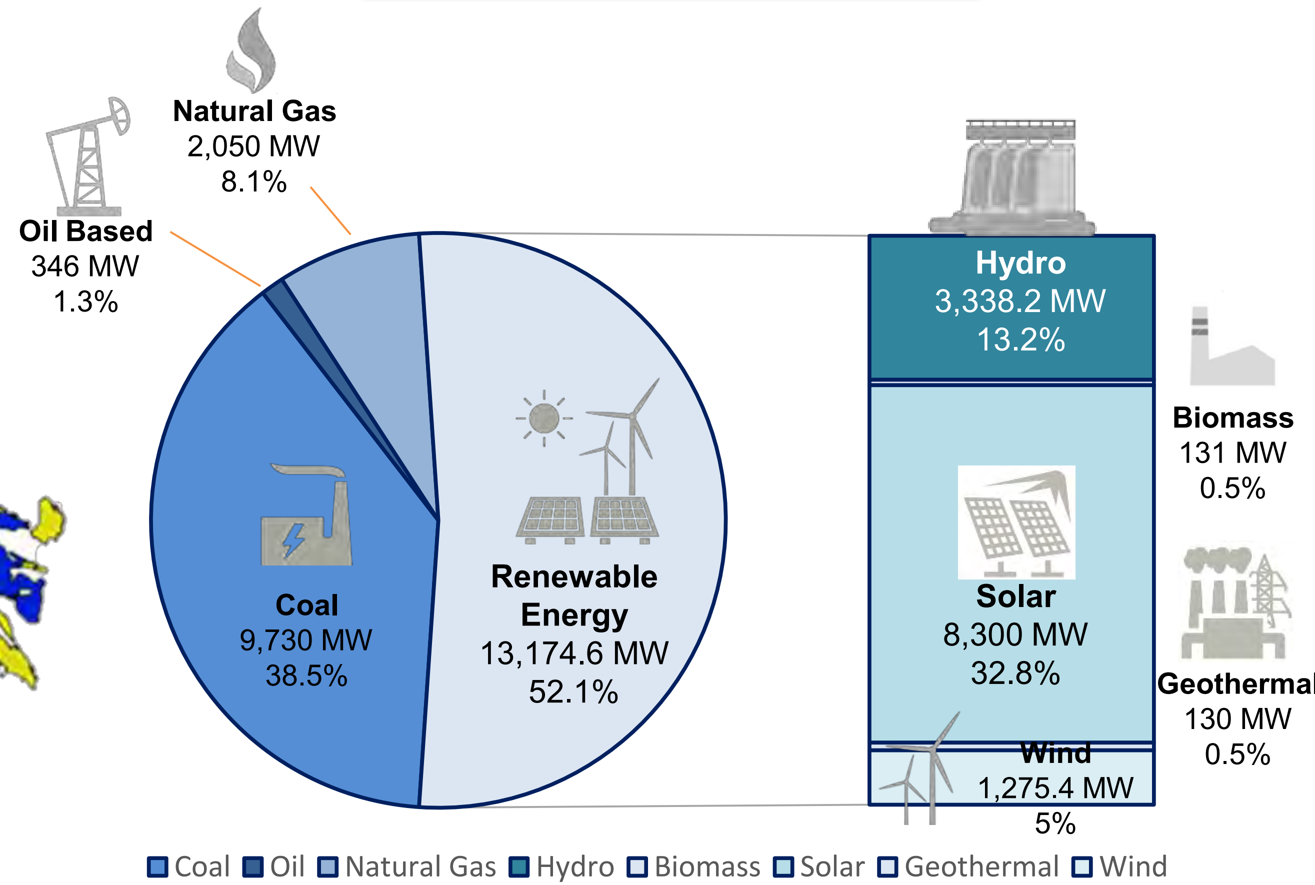
Note: TBD – To be Determined

Source: DOE List of Private Sector-Initiated Power Projects as of 30 September 2018

Luzon Indicative Power Projects



TOTAL LUZON INDICATIVE CAPACITY = 25,301.0 MW



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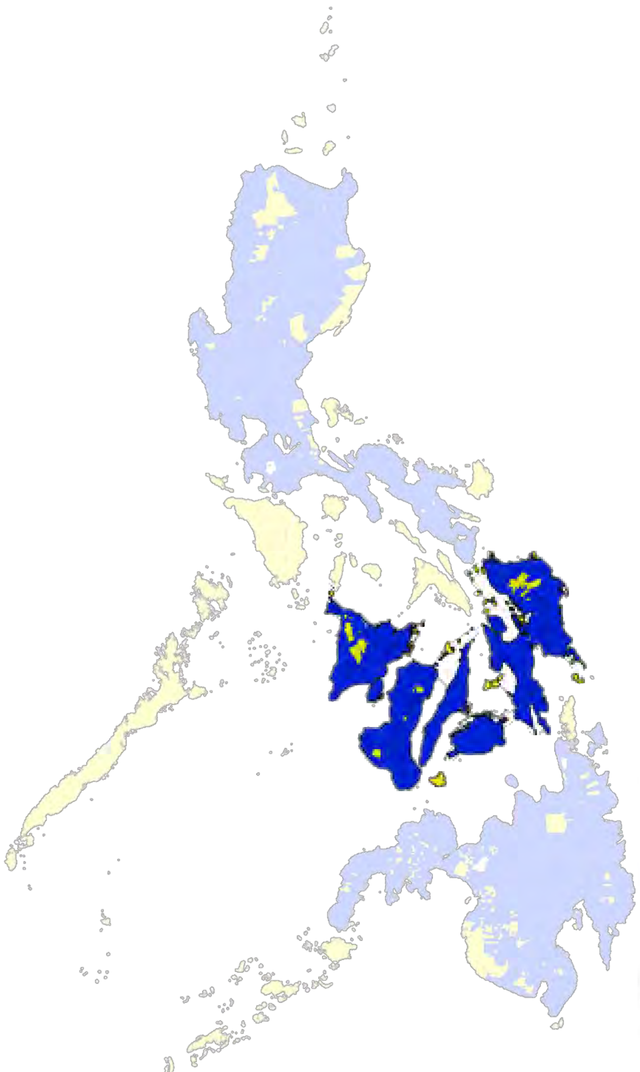
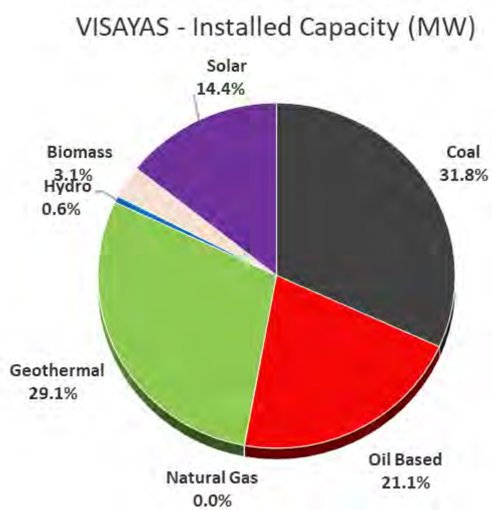
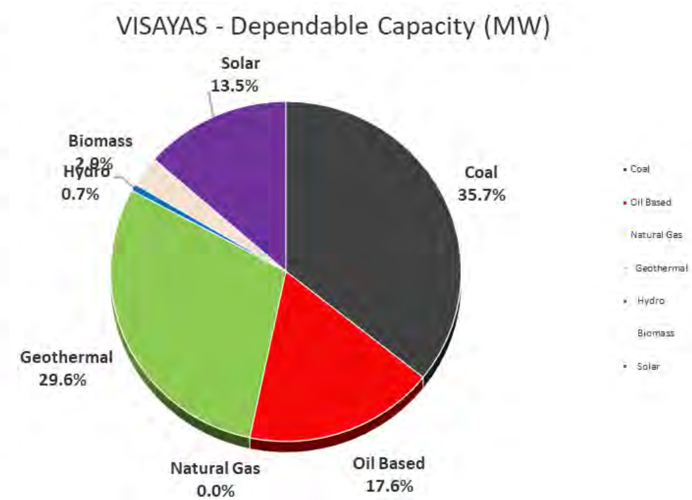
Visayas Capacity Mix



Legend:
Grid-Connected
Off-grid

FUEL TYPE	VISAYAS (GRID AND OFF-GRID)			
	Capacity (MW)		Percent Share (%)	
	Installed	Dependable	Installed	Dependable
Coal	**1,053**	**1,043**	**31.8**	**35.7**
Oil Based	**699**	**514**	**21.1**	**17.6**
Diesel	644	514	*19.4*	*17.6*
Gas Turbine	55	0	*1.7*	*0.0*
Natural Gas	**1**	**0**	**0.0**	**0.0**
Renewable Energy	**1,562**	**1,364**	**47.1**	**46.7**
Geothermal	965	*865*	*29.1*	*29.6*
Hydro	19	*19*	*0.6*	*0.7*
Biomass	102	*85*	*3.1*	*2.9*
Solar	476	*396*	*14.4*	*13.5*
Wind	90	*90*	*2.7*	*3.1*
TOTAL	**3,316**	**2,921**	**100.0**	**100.0**





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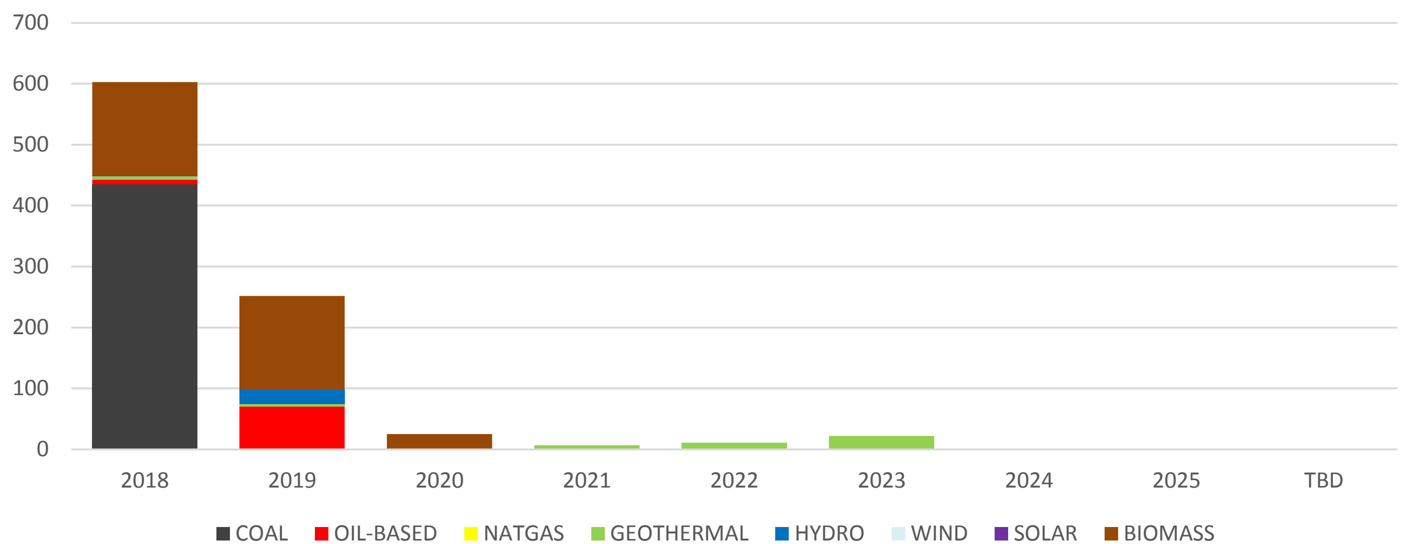
US Energy Information Agency (EIA)

Visayas Committed Power Projects

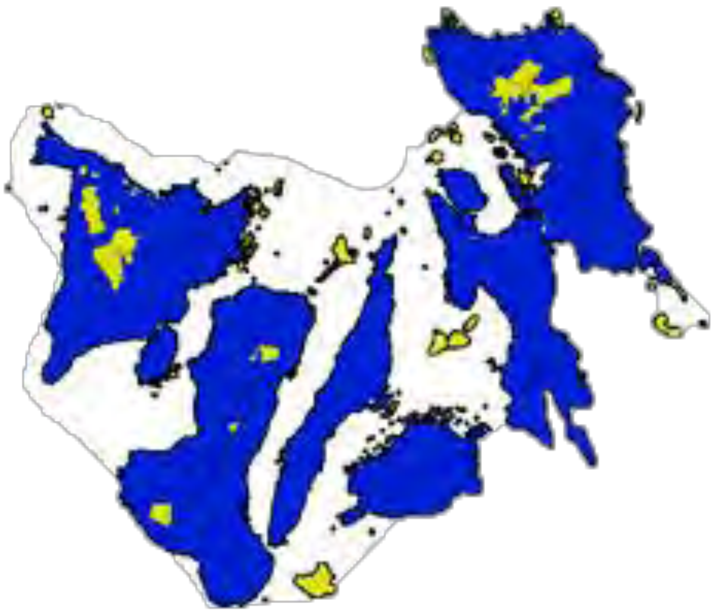
Plant Type	2018	2019	2020	2021	2022	2023	2024	2025	TBD	TOTAL by Type
COAL	435	0	0	0	0	0	0	0	0	435.00
OIL-BASED	8	70	0	0	0	0	0	0	0	78.00
NATGAS	0	0	0	0	0	0	0	0	0	0.00
GEOTHERMAL	5	5	0	7	11	22	0	0	0	50.00
HYDRO	0	23.1	0	0	0	0	0	0	0	23.10
WIND	0	0	0	0	0	0	0	0	0	0.00
SOLAR	1.19	0	0	0	0	0	0	0	0	1.19
BIOMASS	153.58	153.58	25	0	0	0	0	0	0	332.16
TOTAL by year	602.77	251.68	25.00	7.00	11.00	22.00	0.00	0.00	0.00	919.45
BESS	0	0	0	0	0	0	0	0	0	0.00

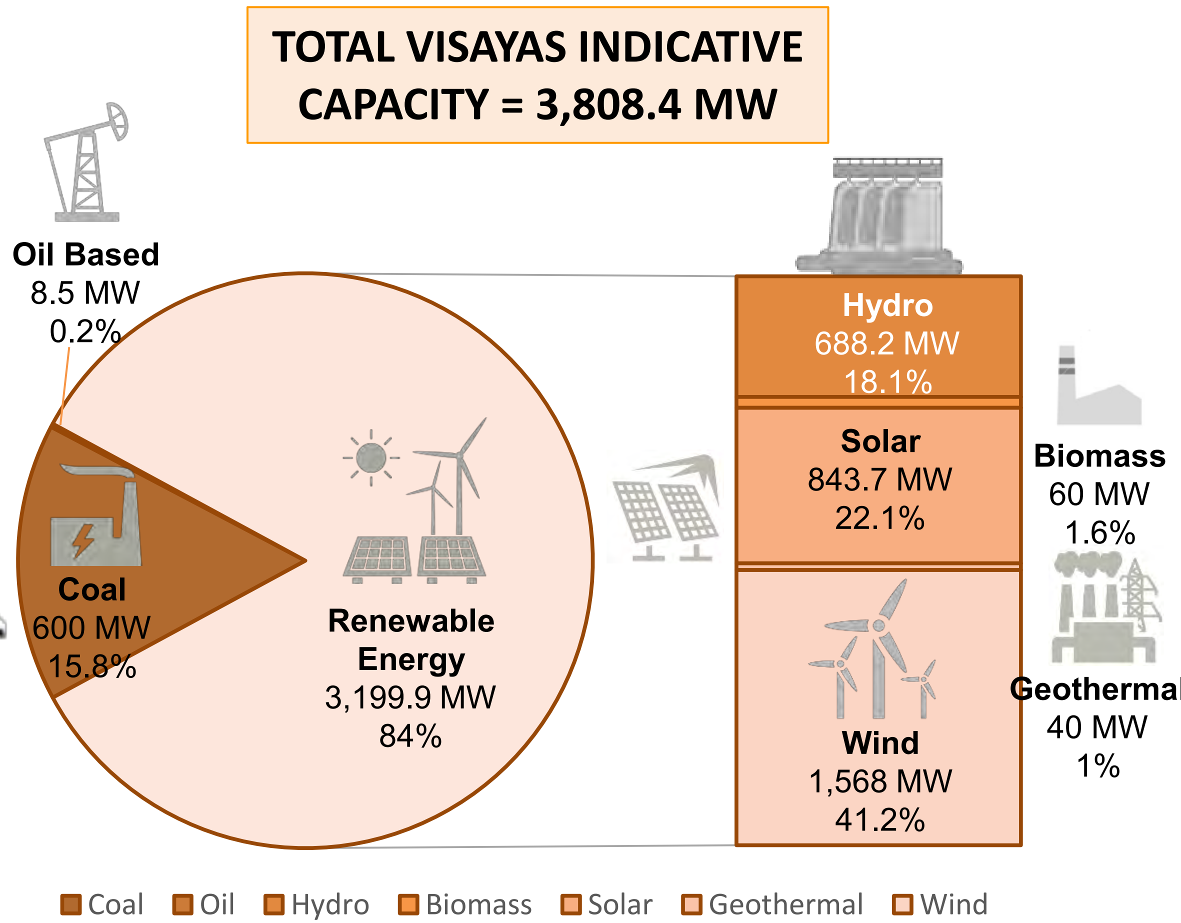


Note: TBD – To be Determined

Source: DOE List of Private Sector-Initiated Power Projects as of 30 September 2018

Visayas Indicative Power Projects





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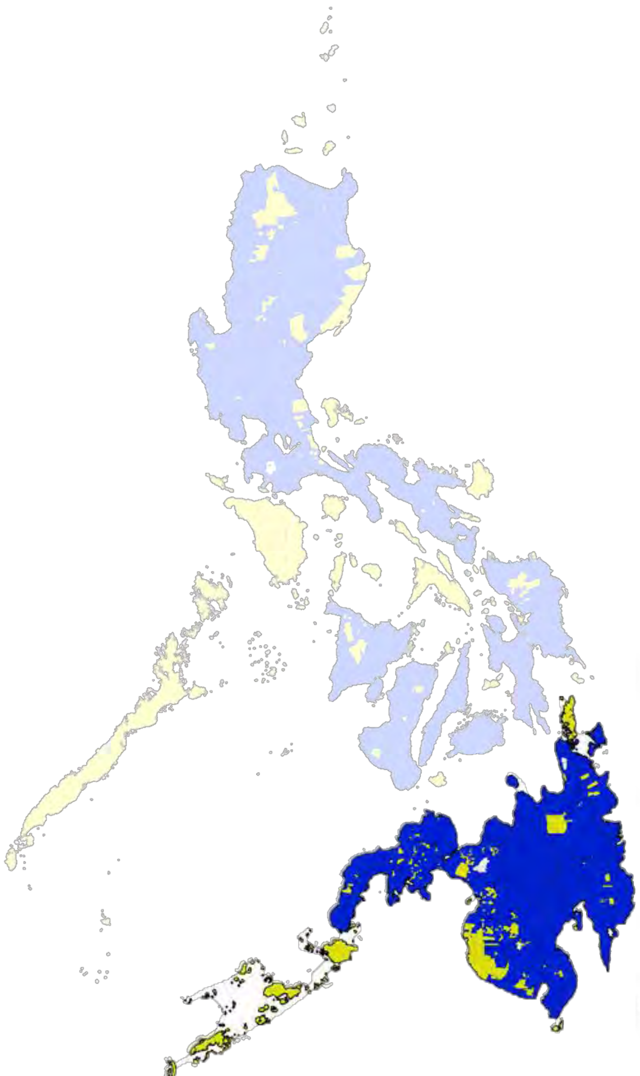
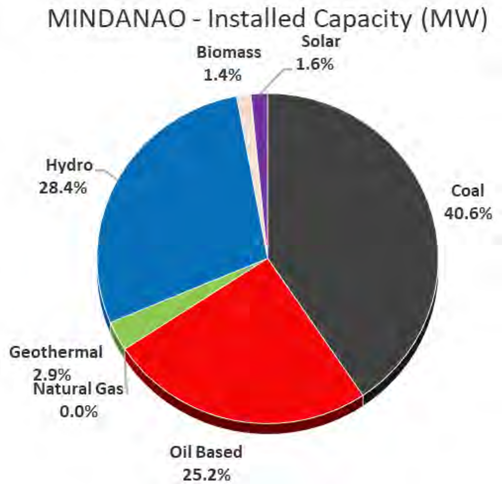
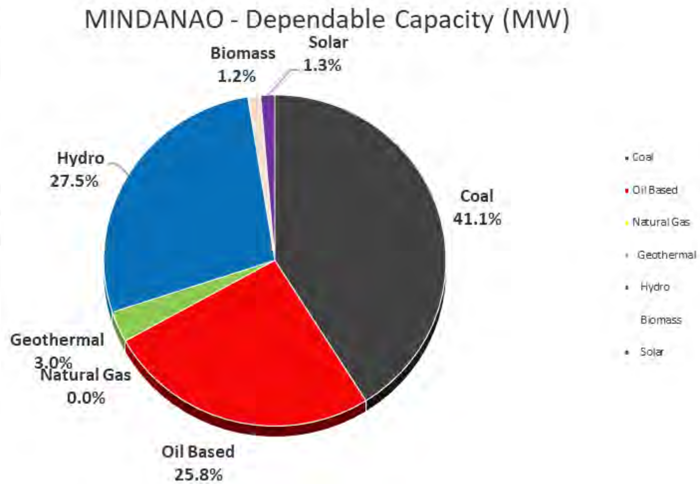
Mindanao Capacity Mix



Legend:
Grid-Connected
Off-grid

FUEL TYPE	MINDANAO (GRID AND OFF-GRID)			
	Capacity (MW)		Percent Share (%)	
	Installed	Dependable	Installed	Dependable
Coal	**1,521**	**1,357**	**40.6**	**41.1**
Oil Based	**943**	**854**	**25.2**	**25.8**
Diesel	*943*	*854*	*25.2*	*25.8*
Natural Gas	**0**	**0**	**0.0**	**0.0**
Renewable Energy	**1,284**	**1,093**	**34.3**	**33.1**
Geothermal	*108*	*100*	*2.9*	*3.0*
Hydro	*1,066*	*910*	*28.4*	*27.5*
Biomass	*51*	*40*	*1.4*	*1.2*
Solar	*59*	*44*	*1.6*	*1.3*
Wind	*0*	*0*	*0.0*	*0.0*
TOTAL	**3,747**	**3,304**	**100.0**	**100.0**





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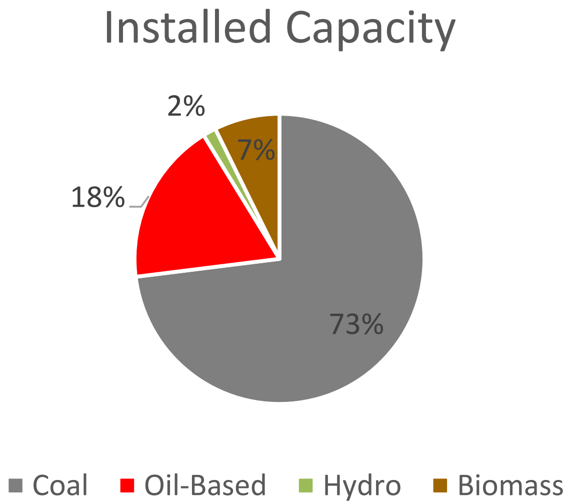
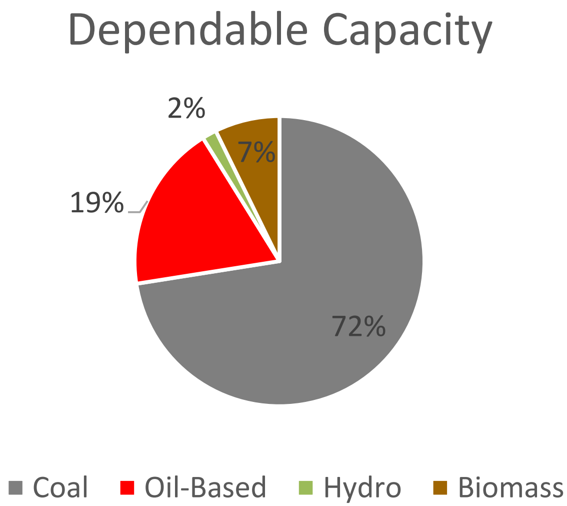
Mindanao Newly-Operational Power Plants

POWER PLANT		CAPACITY, MW		LOCATION	OPERATOR
FACILITY NAME	SUBTYPE	INS	DEP	MUNICIPALITY / PROVINCE	
COAL		**150.0**	**135.0**		
SMC MALITA U2	Circulating Fluidized Bed (CFB) Coal	150.0	135.0	Brgy. Culaman, Malita, Davao Occidental	San Miguel Consolidated Power Corporation
DIESEL		**37.4**	**34.7**		
KEGI - JIMENEZ	Bunker/Diesel Internal Combustion Engine	7.8	7.5	Brgy. San Isidro, Jimenez	King Energy Generation Inc
PBI	Bunker/Diesel Internal Combustion Engine	10.4	10.4	Bukidnon	Peak Power Bukidnon. Inc. (PBI)
PSFI 2	Bunker/Diesel Internal Combustion Engine	5.2	5.2	San Francisco, Agusan del Sur	Peak Power San Francisco (PSFI)
PSI 2	Bunker/Diesel Internal Combustion Engine	13.9	13.9	General Santos City	Peak Power Soccsargen, Inc. (PSI)
HYDRO		**3.0**	**3.0**		
NEW BATAAN HEPP	Run-of-River type HEPP	3.0	3.0	New Bataan, Compostela Valley	Euro Hydro Power (Asia) Holdings, Inc.
BIOMASS		**15.0**	**13.5**		
LAMSAN POWER CORPORATION	Bagasse-fired Cogeneration Plant	15.0	13.5	Maguindanao	Lamsan Power Corporation

TOTAL NEW CAPACITY FOR 1H 2018 (MW)	**202.4**	**186.2**





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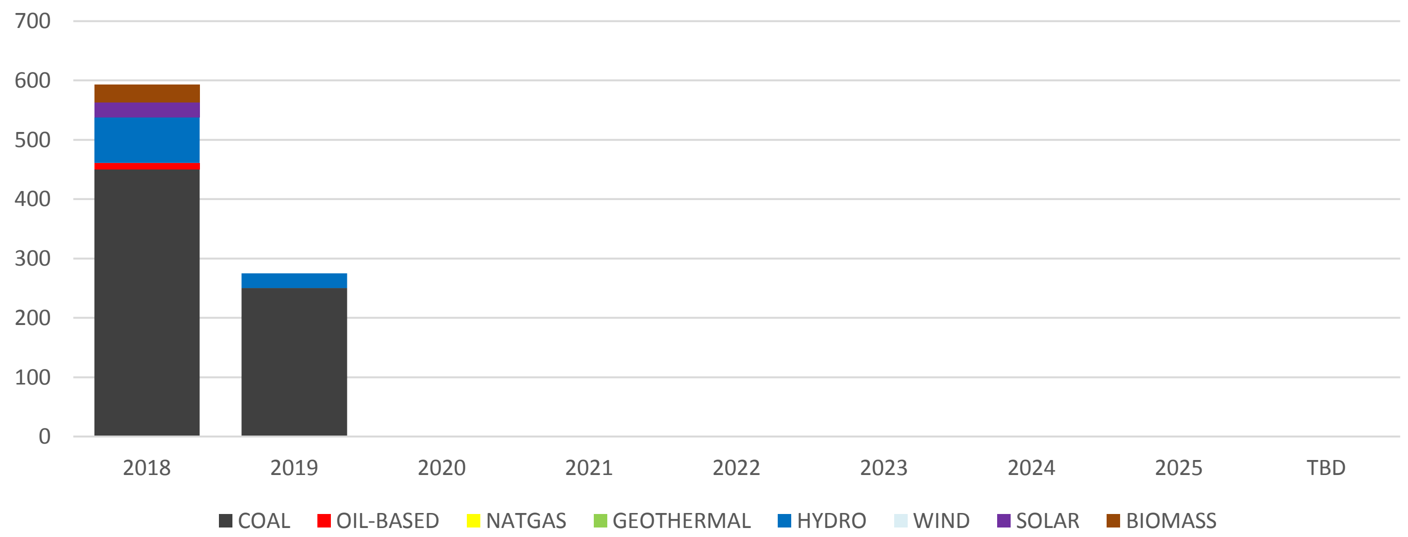
Mindanao Committed Power Projects

Plant Type	2018	2019	2020	2021	2022	2023	2024	2025	TBD	TOTAL by Type
COAL	450	250	0	0	0	0	0	0	0	700.00
OIL-BASED	10.9	0	0	0	0	0	0	0	0	10.90
NATGAS	0	0	0	0	0	0	0	0	0	0.00
GEOTHERMAL	0	0	0	0	0	0	0	0	0	0.00
HYDRO	76.8	25	0	0	0	0	0	0	0	101.80
WIND	0	0	0	0	0	0	0	0	0	0.00
SOLAR	24.96	0	0	0	0	0	0	0	0	24.96
BIOMASS	30.34	0	0	0	0	0	0	0	0	30.34
TOTAL by year	593.00	275.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	868.00
BESS	0	0	0	0	0	0	0	0	0	0.00

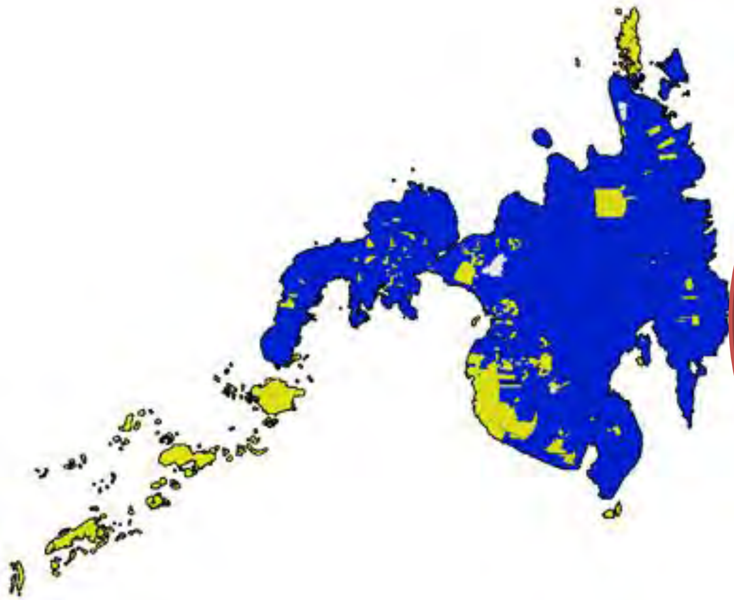


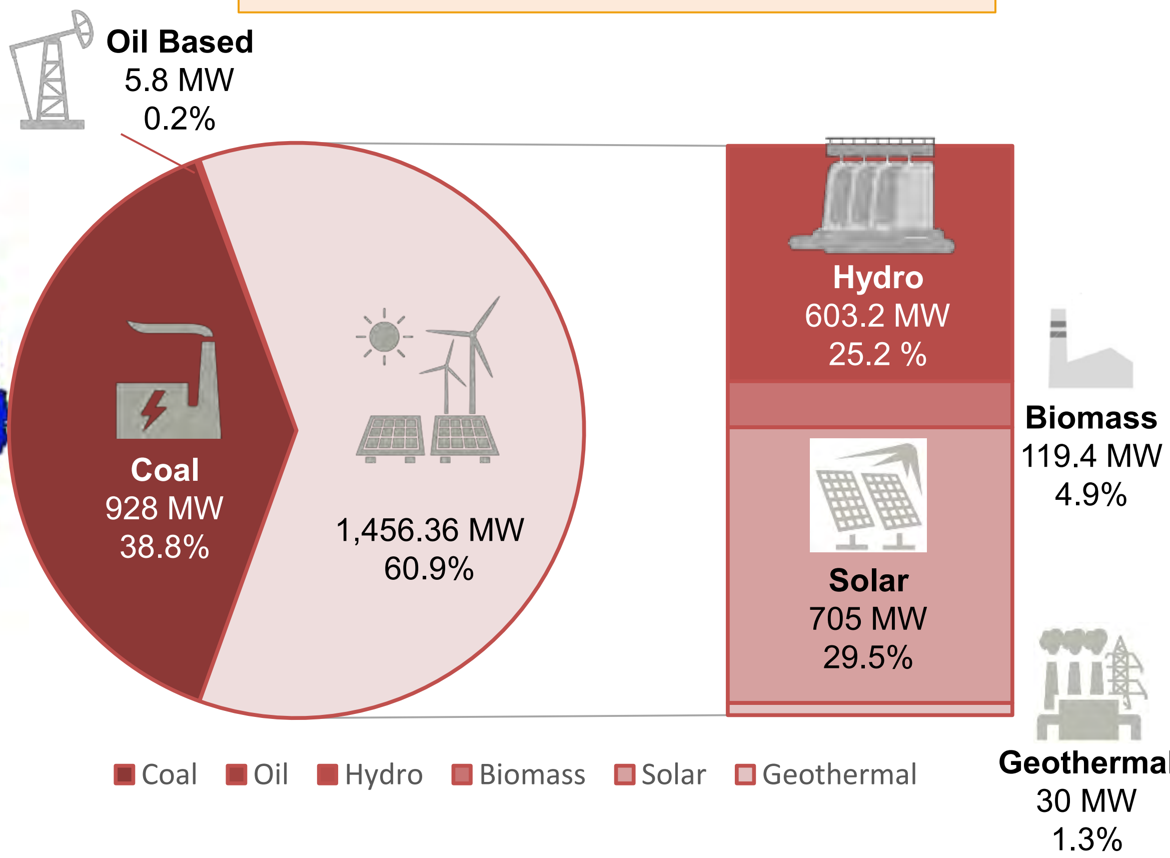
Note: TBD – To be Determined

Source: DOE List of Private Sector-Initiated Power Projects as of 30 September 2018

Mindanao Indicative Power Projects

TOTAL MINDANAO INDICATIVE CAPACITY = 2,391.4 MW





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Policy Initiatives

Policy Initiatives

AMBISYON NATIN 2040

DUTERTE NOMICS

BUILD BUILD BUILD

Strategic Directions 2017 - 2040

1 ENSURE ENERGY SECURITY

2 EXPAND ENERGY ACCESS

3 PROMOTE A LOW CARBON FUTURE

4 STRENGTHEN COLLABORATION AMONG ALL GOVERNMENT AGENCIES INVOLVED IN ENERGY

5 IMPLEMENT, MONITOR AND INTEGRATE SECTORAL AND TECHNOLOGICAL ROADMAPS AND ACTION PLANS

6 ADVOCATE THE PASSAGE OF THE DEPARTMENT'S LEGISLATIVE AGENDA

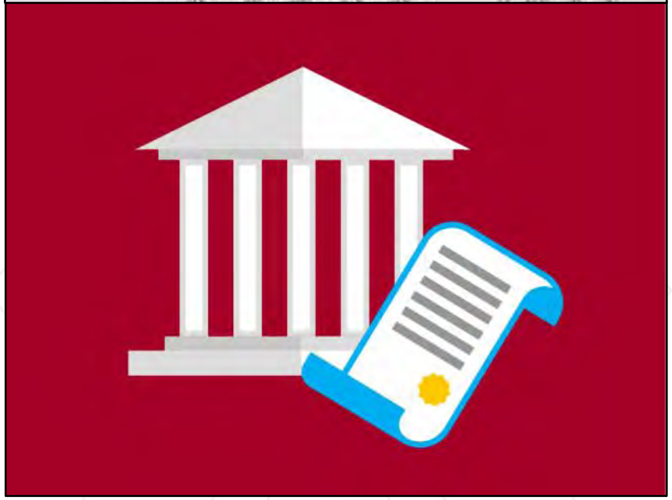
7 STRENGTHEN CONSUMER WELFARE AND PROTECTION

8 FOSTER STRONGER INTERNATIONAL RELATIONS AND PARTNERSHIPS

Policy Initiatives

DOE’s Legislative Agenda:

- Downstream Oil Industry Deregulation Bill
- LPG Industry Safety Bill
- Amending Sec. 45 of RA 9136
- Electric, Hybrid and Other Alternative Fuel Vehicles Promotions Bill
- Downstream Natural Gas Infrastructure Development Bill
- Energy Efficiency and Conservation Bill
- Green Vehicles Incentives Bills
- EVOSS Bill



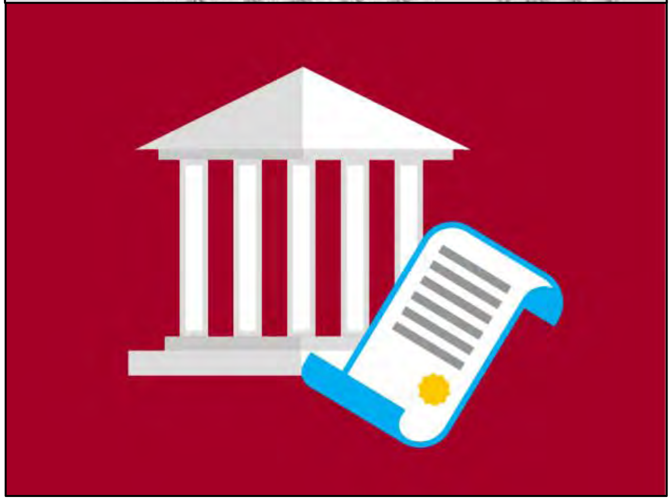
Policy Initiatives

- Department Circular No. 2013-03-0003, the DOE shall propose a National Strategy for the Smart Grid for the period until 2040.

- Executive Order No. 30 was signed by President R. Duterte on 28 June 2017 creating the Energy Investment Coordinating Council (EICC) in order to Streamline the Regulatory Procedures Affecting Energy Projects

- Department Circular No. DC2017-11-0012 Rules & Regulations Governing the Philippine Downstream Natural Gas Industry

- Department Circular No. 2017-12-0014 Providing Policies on the Implementation of Retail Competition and Open Access for Retail Electricity Suppliers

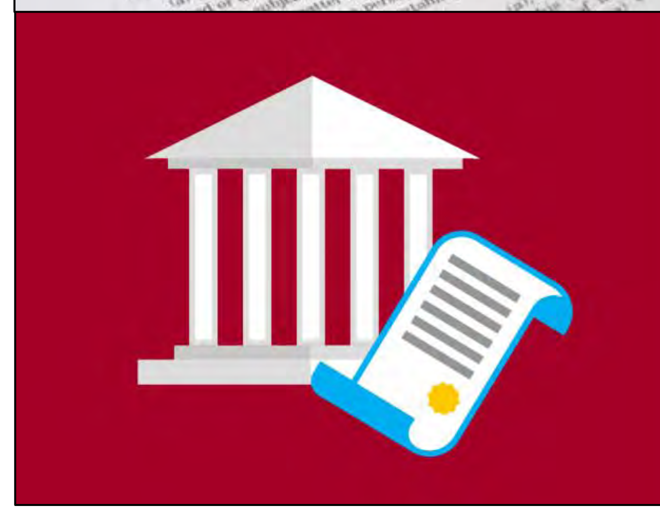


Policy Initiatives

- Department Circular No. DC2017-12-0015 Promulgating the Rules and Guidelines Governing the Establishment of the Renewable Portfolio Standards for On-Grid Areas

- Department Circular No. DC2017-12-0017 Adopting the Philippine Conventional Energy Contracting Program (PCECP)

- Department Circular No. DC2018-01-0002 Adopting Policies for the Effective and Efficient Transition to the IMO for the WESM



Policy Initiatives

Policies to Promote Renewable Energy

- **Net-Metering for RE**

  A Renewable Energy Policy Mechanism which shall provide consumers to produce its own electricity requirement with maximum capacity of 100 kW.

- **RE Portfolio Standards (On-Grid and Off-Grid)**

  Market based policy that requires the mandated electricity industry participants to source an agreed portion of their supply from eligible RE Resources

- **Must and Priority Dispatch for Variable REs**

  DOE Circular No. DC2015-03-0001 dated 20 March 2015 promulgated the implementation framework

- **Renewable Energy Market (REM)**

  Venue for trading of Renewable Energy Certificates (RE Certificates)

- **Green Energy Option**

  Mechanism to provide end-users the option to choose RE as their sources of energy

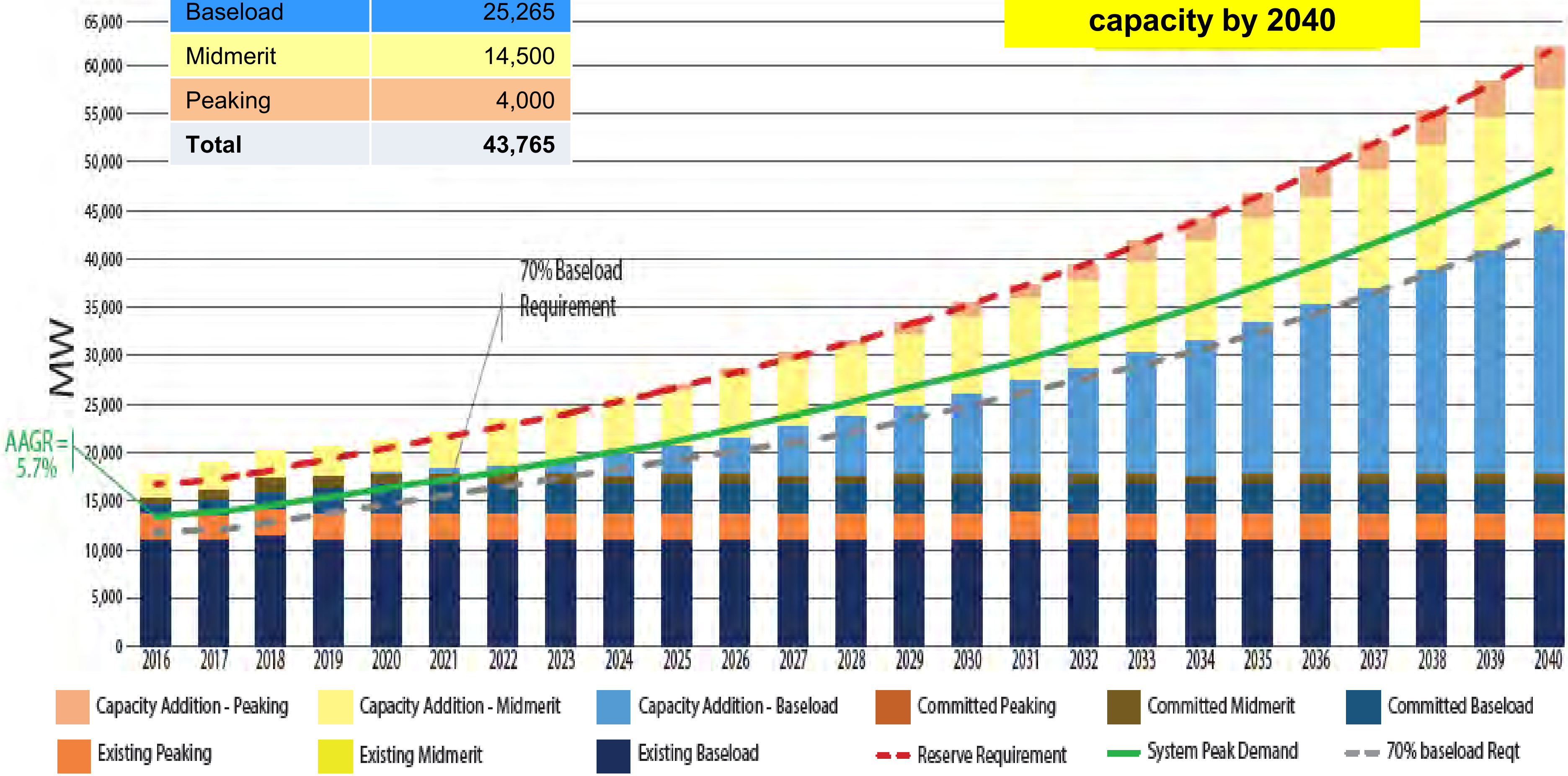
Investment Opportunities

Philippines Demand and Supply Outlook 2016-2040

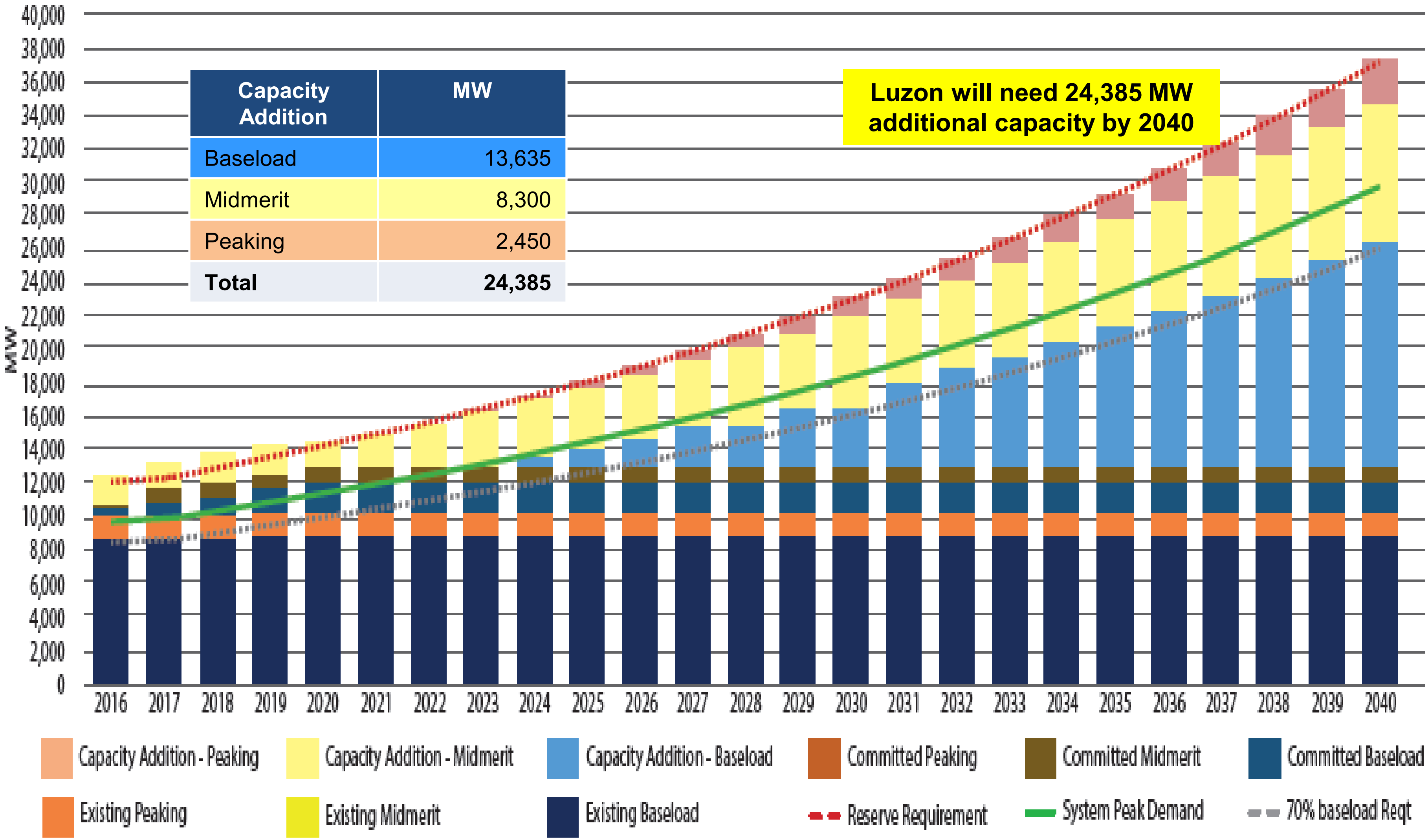
Philippines Demand and Supply Outlook, 2016-2040

Capacity Addition	MW
Baseload	25,265
Midmerit	14,500
Peaking	4,000
Total	**43,765**

Philippines will need 43,765 MW additional capacity by 2040



Luzon Demand and Supply Outlook, 2016 - 2040

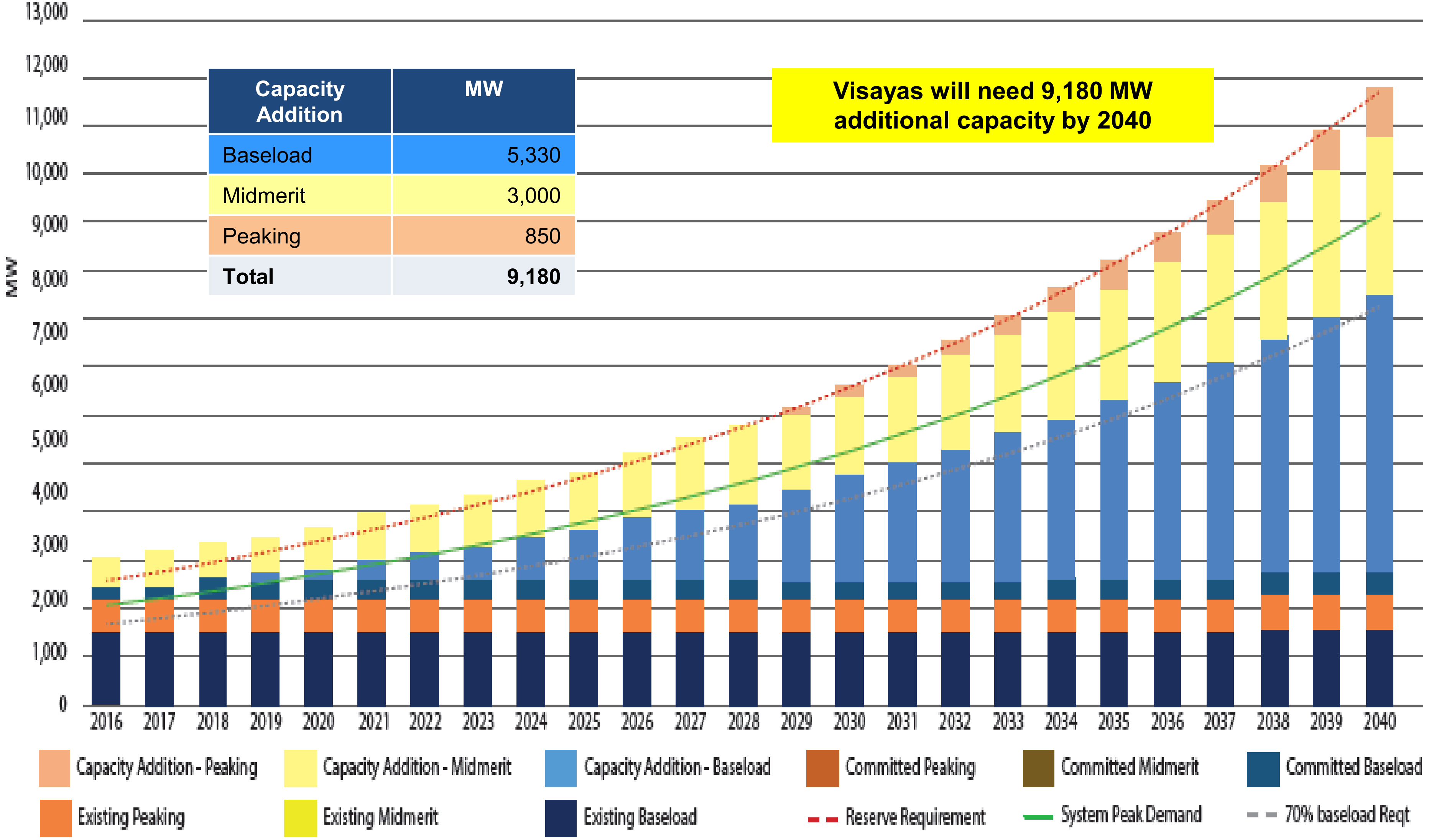


Capacity Addition	MW
Baseload	13,635
Midmerit	8,300
Peaking	2,450
Total	**24,385**

Visayas Demand and Supply Outlook, 2016 - 2040

Capacity Addition	MW
Baseload	5,330
Midmerit	3,000
Peaking	850
Total	**9,180**

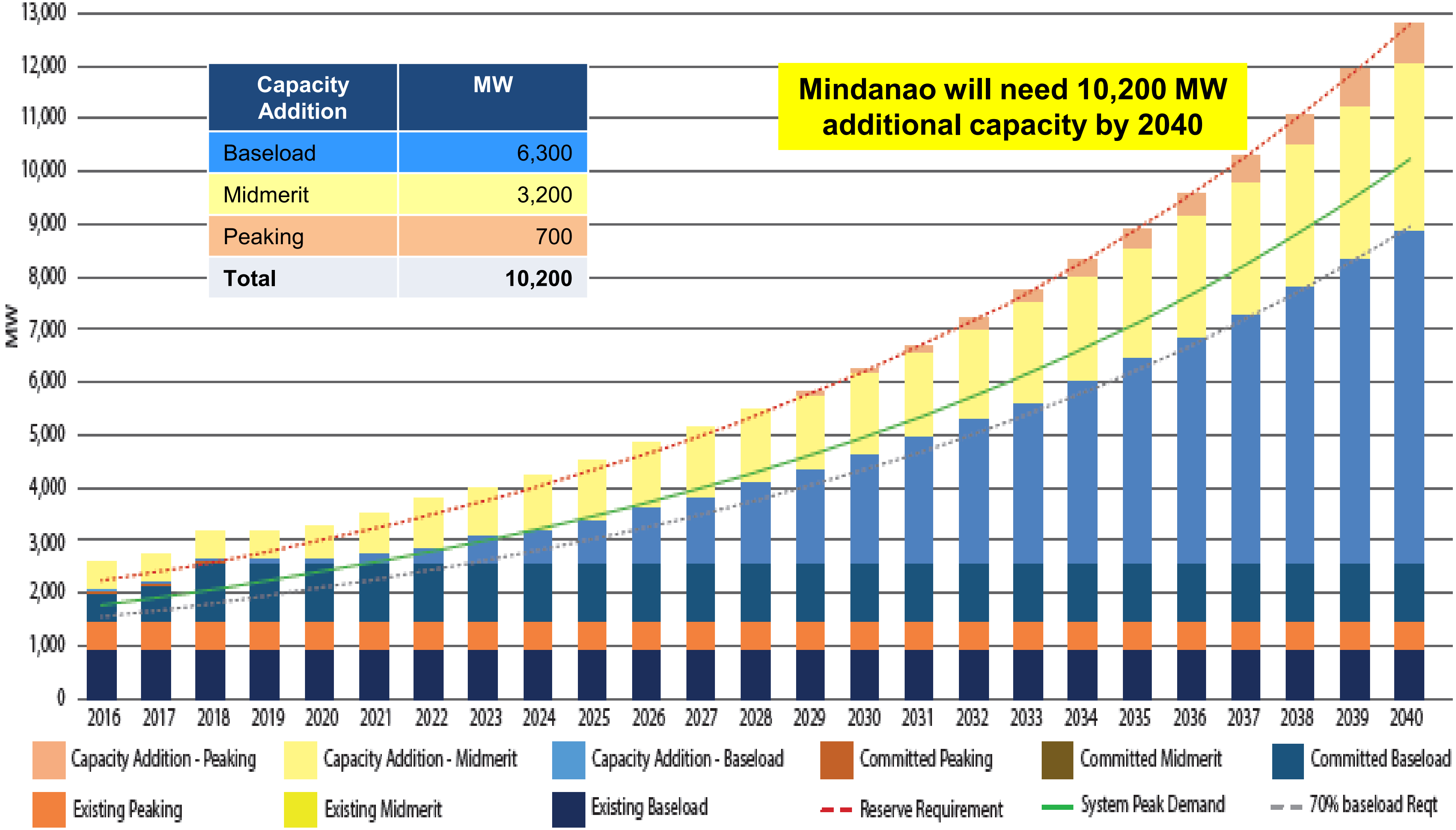
Visayas will need 9,180 MW additional capacity by 2040



Mindanao Demand and Supply Outlook, 2016 - 2040

Capacity Addition	MW
Baseload	6,300
Midmerit	3,200
Peaking	700
Total	**10,200**

Mindanao will need 10,200 MW additional capacity by 2040



Off-Grid Areas

Investment Opportunities for Off-Grid Areas

Abundance of off-grid sites

- 7,641 islands with 1,702 potential off-grid sites.
- 2,399,108 households in the Philippines remain unserved.

Opportunities for hybridisation of diesel mini-grids and power plants

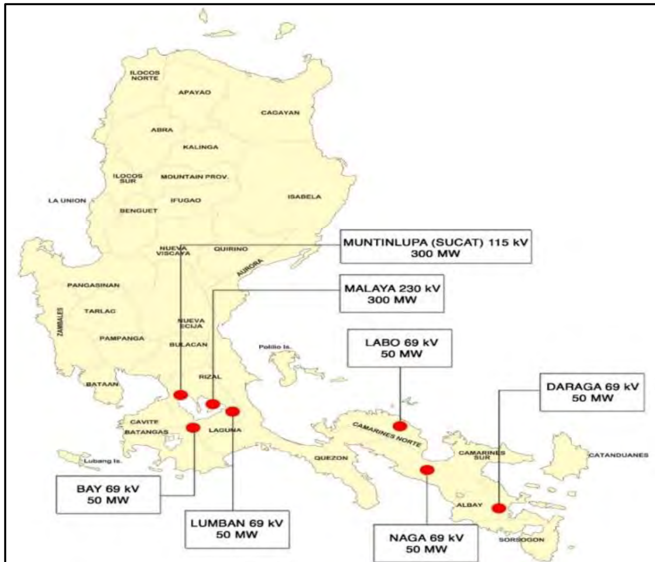
- 400 MW of diesel generating capacity installed in over 320 off-grid missionary areas.
- Recent study by ASEP revealed that savings of up to 4-5 PHP/kWh diesel power plants are possible.

Policy frameworks for mini-grids being re-worked by government

- DOE aims to attain 100% electrification for all islands of the Philippines by 2020.
- Streamlining of the process for Qualified Third Parties (QTP) and New Power Producer (NPP) investments in hybrid and clean energy mini-grids in the Philippines under way.

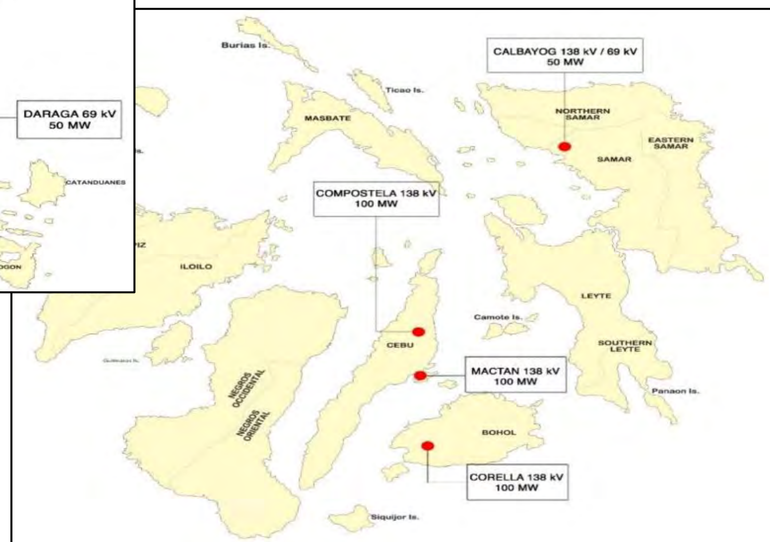
Power

Ideal Location of New Power Plants

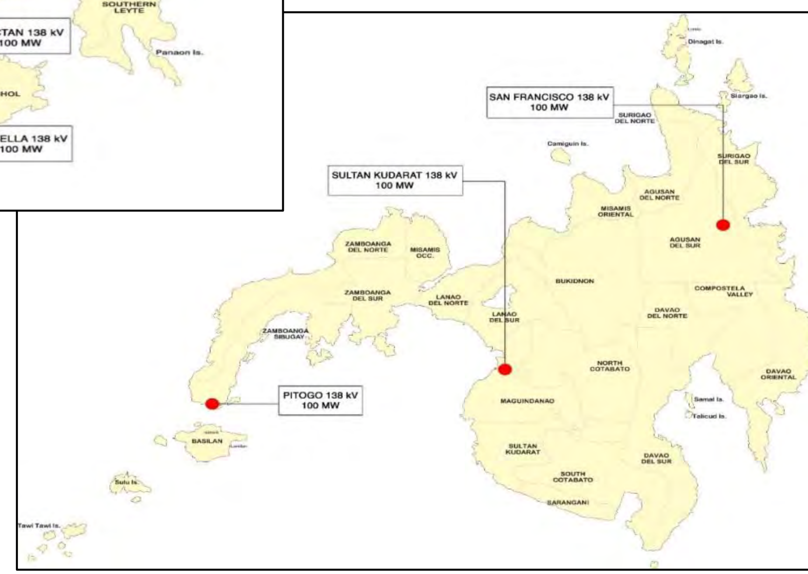


Luzon

Visayas



Mindanao



Renewable Energy

Renewable Energy Projects in the Philippines

RESOURCES	AWARDED PROJECTS				INSTALLED CAPACITY (MW)	
	Grid-Use	Own-Use	Grid-Use (MW)	Own-Use (MW)	Grid-Use	Own-Use
Hydro Power	455		13,445.16		975.79*	
Ocean Energy	7		26.00			
Geothermal	40		555.00**		1,906.19	
Wind	64	1	2,381.50		426.90	0.006
Solar	216	16	6,512.12	4.286	925.34	3.218
Biomass	57	24	334.17	16.77	449.01	128.16
Sub-Total	839	41	23,260.17	21.056	4,683.23	131.38
TOTAL	880		23,281.23		4,814.61	

As of March 2018

** excluding 49 installed projects with 2,643.68MW capacity under RA 7156, CA 120, PD 1645, RA 3601 & Own-Use*

*** excluding 1 potential project with 20MW capacity under PD 1442.*

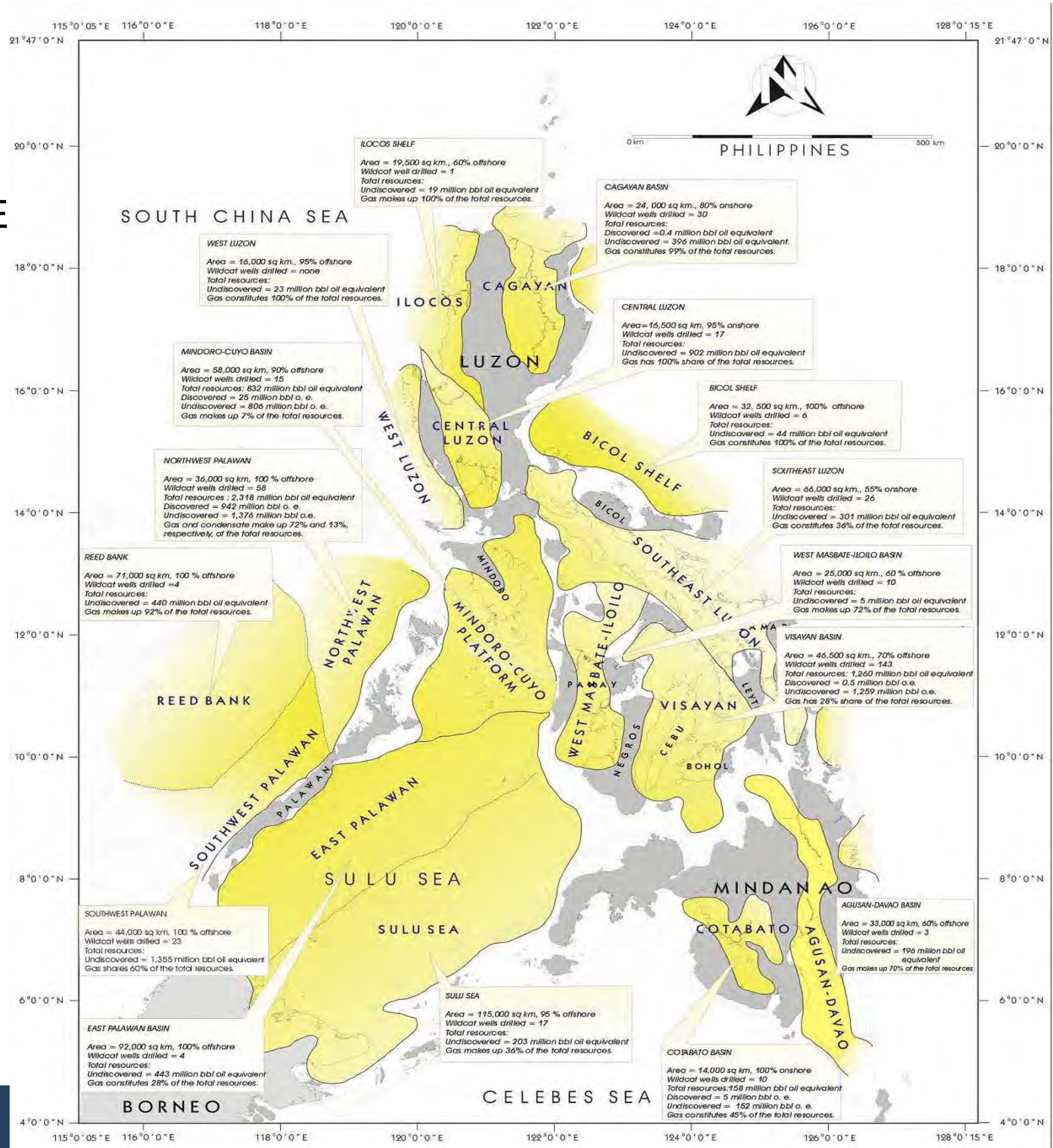
Upstream Oil & Gas

Philippine Sedimentary Basins

Total area: 709,000 sq km

Combined Potential: 4,777 MMBFOE

1. Ilocos Shelf
2. Cagayan Basin
3. Central Luzon Basin
4. Bicol Shelf
5. Southeast Luzon Basin
6. Mindoro-Cuyo Basin
7. West Masbate-Iloilo Basin
8. Visayan Basin
9. Agusan-Davao Basin
10. Cotabato Basin
11. Sulu Sea Basin
12. East Palawan Basin
13. Southwest Palawan Basin
14. Reed Bank Basin
15. Northwest Palawan Basin
16. West Luzon Trough

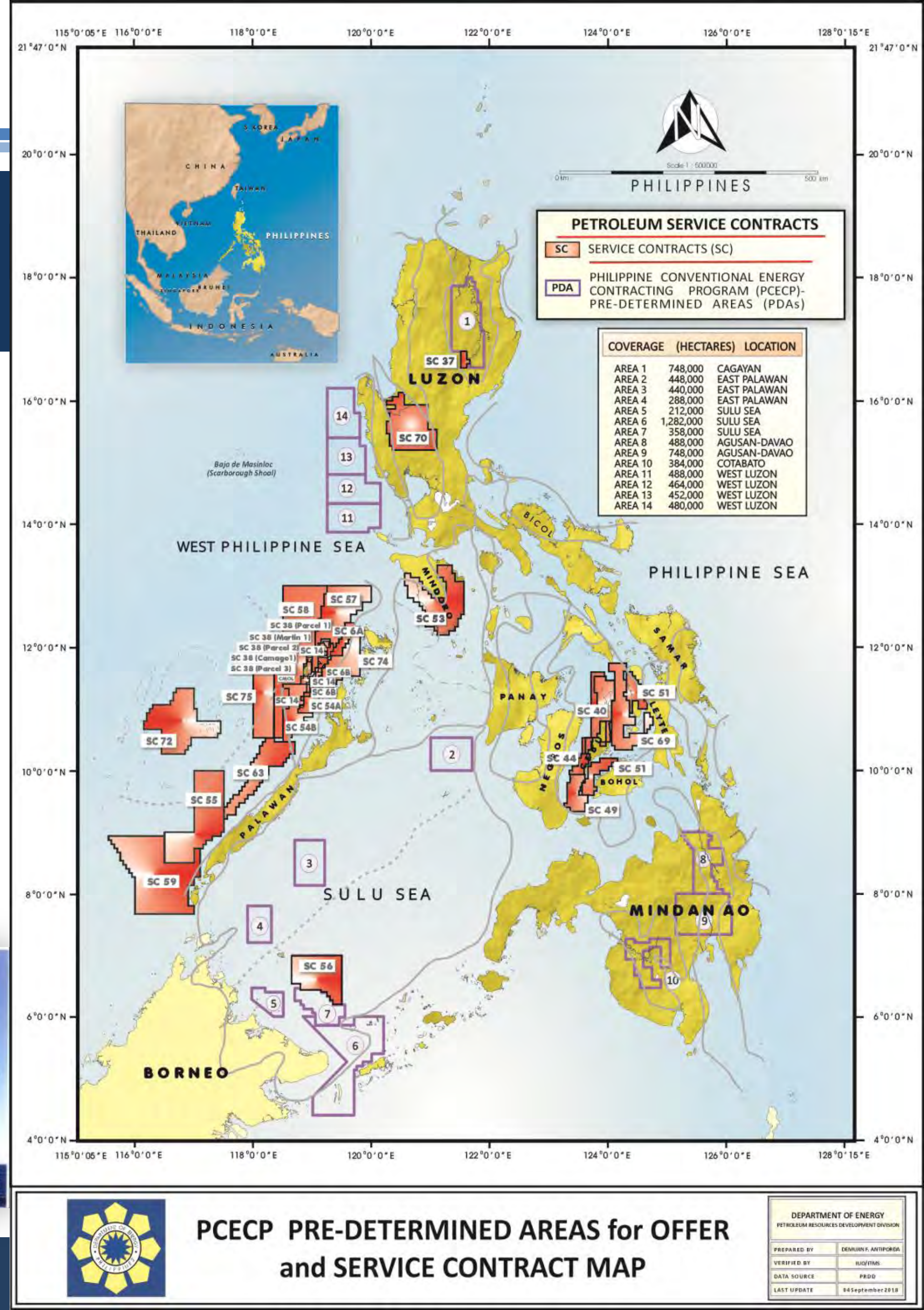


Upstream Oil & Gas

Petroleum Service Contracts
Exploration & Development

22 Petroleum Service Contracts (PSCs)
As of June 2018

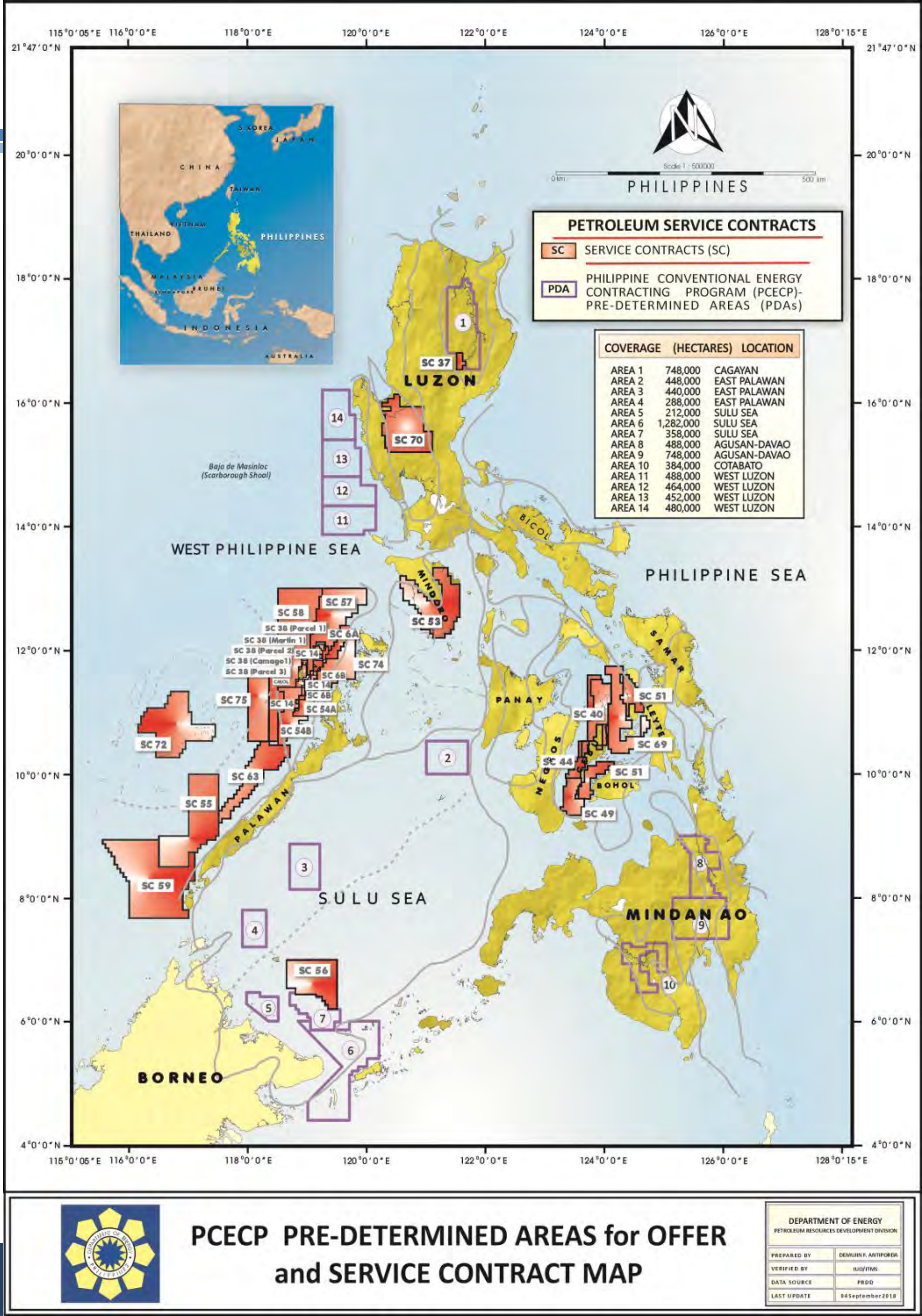
- 7 PSCs in the Production Stage
- 15 PSCs in the Exploration Stage



Upstream Oil & Gas

2018 PCECP Areas for Offer

1. Cagayan – 748,000 has.
2. East Palawan – 448,000 has.
3. East Palawan – 440,000 has.
4. East Palawan – 288,000 has.
5. Sulu Sea – 212,331 has.
6. Sulu Sea – 1,282,335 has.
7. Sulu Sea – 358,000 has.
8. Agusan – Davao – 488,000 has.
9. Agusan – Davao – 748,000 has.
10. Cotabato – 384,000 has.
11. West Luzon – 488,000 has.
12. West Luzon – 464,000 has.
13. West Luzon – 452,000 has.
14. West Luzon – 480,000 has.



Upstream Coal

Summary of Regional Coal Reserves

(in Million Metric Tons)

QUEZON
Resource Potential - 2.00
In-situ Reserves - 0.09

MINDORO
Resource Potential - 100.00
In-situ Reserves - 1.44

SEMIRARA
Resource Potential - 550.00
In-situ Reserves - 96.19

NEGROS
Resource Potential - 4.50
In-situ Reserves - 2.01

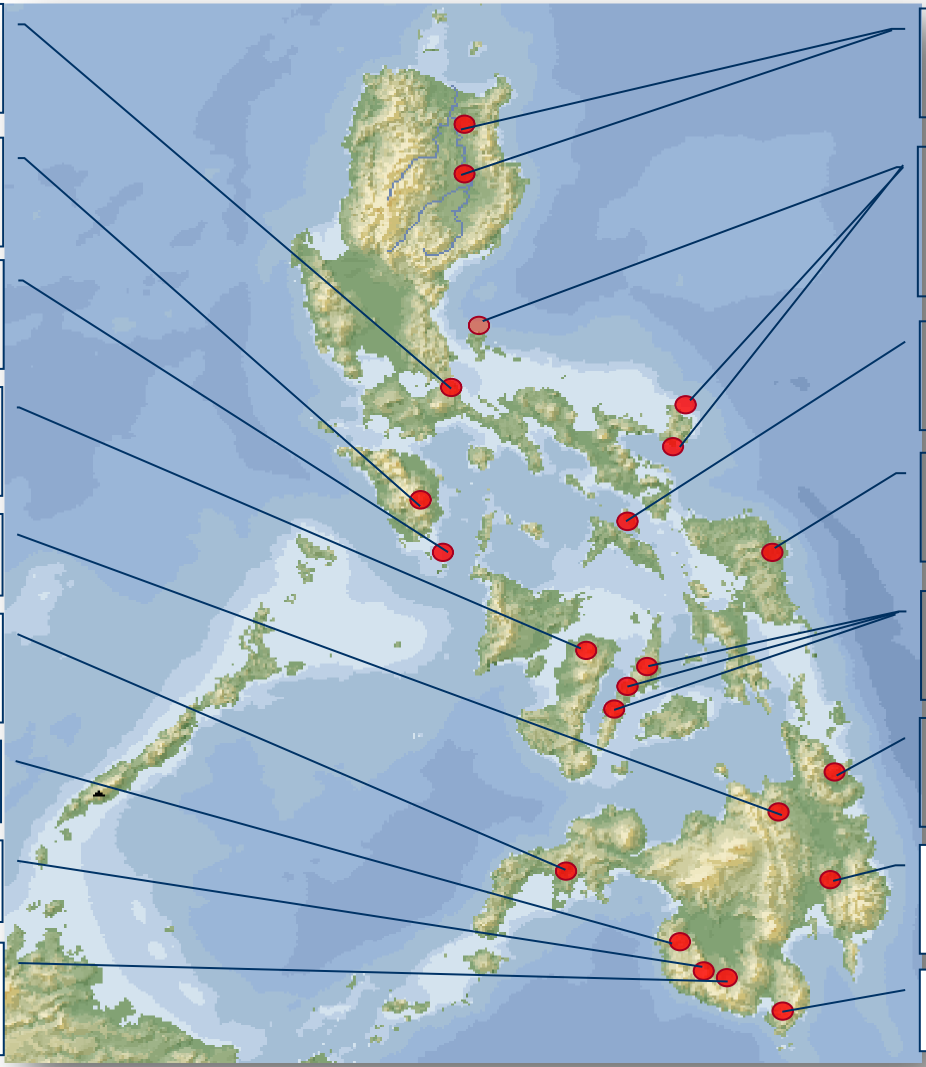
BUKIDNON
Resource Potential - 50.00

ZAMBOANGA
Resource Potential - 45.00
In-situ Reserves - 38.05

MAGUINDANAO
Resource Potential - 108.00

SULTAN KUDARAT
Resource Potential - 300.30

SOUTH COTABATO
Resource Potential - 230.40
In-situ Reserves - 81.07



CAGAYAN VALLEY
Resource Potential - 336.00
In-situ Reserves - 82.57

BATAN-POLILLO-CATANDUANES
Resource Potential - 17.00
In-situ Reserves - 6.77

MASBATE
Resource Potential - 2.50
In-situ Reserves - 0.07

SAMAR
Resource Potential - 27.00
In-situ Reserves - 8.59

CEBU
Resource Potential - 165.00
In-situ Reserves - 11.84

SURIGAO
Resource Potential - 209.00
In-situ Reserves - 69.73

DAVAO
Resource Potential - 100.00
In-situ Reserves - 2.37

SARANGANI
Resource Potential - 120.00

Upstream Coal

Coal Operating Contracts
Exploration & Development

73 Active Coal Operating Contracts (COCs) As of June 2018

- 41 COCs in the Exploration Stage
- 32 COCs in the Development and Production Stage






Downstream Oil

Number of Retail Stations

REGION	MAJORS	NEW PLAYERS		REGIONAL
		w/ Bulk Supply/Facilities	Independent*	
National Capital Region (NCR)	612	285	247	1,144
Cordillera Administrative Region (CAR)	27	9	12	48
Region I (Ilocos Region)	122	70	237	429
Region II (Cagayan Valley)	107	57	141	305
Region III (Central Luzon)	295	233	352	880
Region IV (Southern Tagalog)	778	454	638	1,870
Region V (Bicol Region)	188	38	313	539
TOTAL LUZON	2,129	1,146	1,940	5,215
Region VI (Western Visayas)	337	223	209	769
Region VII (Central Visayas)	346	155	144	645
Region VIII (Eastern Visayas)	137	45	98	280
TOTAL VISAYAS	820	423	451	1,694
Region IX (Zamboanga Peninsula)	86	9	43	138
Region X (Northern Mindanao)	201	17	184	402
Region XI (Davao Region)	218	108	356	682
Region XII (SOCCSKSARGEN)	129	12	149	290
Region XIII (CARAGA)	70	5	79	154
Autonomous Region of Muslim Mindanao (ARMM)	-	5	4	9
TOTAL MINDANAO	704	156	815	1,675
PHILIPPINES TOTAL	3,653	1,725	3,206	8,584

Notes: **Outlets with 1-5 Branches*

Downstream Oil

Liquid Fuel Storage Capacities

Region	No. of Depots	Storage Capacity (MB)	No. of Import Terminals	Storage Capacity (MB)	Total Depots and Import Terminals	Storage Capacity (MB)
NCR	15	289	2	293	**17**	**582**
Region I	1	0	6	447	**7**	**447**
Region II	1	73	-	-	**1**	**73**
Region III *	11	628	9	17,083	**20**	**17,711**
Region IV						
IV-A *	9	293	9	8,219	**18**	**8,512**
IV-B	18	262	-	-	**18**	**262**
Region V	6	270	-	-	**6**	**270**
Region VI	12	548	6	329	**18**	**877**
Region VII	10	91	9	1,027	**19**	**1,118**
Region VIII	7	212	3	111	**10**	**323**
Region IX	4	230	1	12	**5**	**241**
Region X	9	478	5	1,239	**14**	**1,717**
Region XI	2	242	6	812	**8**	**1,054**
Region XII	4	133	-	-	**4**	**133**
Region XIII	3	92	-	-	**3**	**92**
ARMM	3	530	-	-	**3**	**530**
TOTAL	**115**	**4,371**	**56**	**29,572**	**171**	**33,944**

*Note: *- Includes storage capacities of Petron and Shell refineries*

Storage Capacity updated as of Dec 2017

Downstream Oil

Refinery Storage Capacities

Refinery	Location	Storage Capacity in Thousand Barrels, MB
Petron	Limay, Bataan	**9,536**
Shell	Tabangao, Batangas	**5,068**
Total Capacity		**14,604**

LPG Refilling Plants

Region	Refilling Plants
Region I	20
Region II	11
Region III	81
Region IV	81
Region V	14
Region VI	9
Region VII	9
Region VIII	5
Region IX	4
Region X	5
Region XI	7
Region XII	3
NCR	35
CAR	4
CARAGA	2
TOTAL	**290**

as of September 2018

Downstream Natural Gas

Integrated LNG Terminal

- Safeguard against the anticipated depletion of the Malampaya gas facility in 2024.
- Initial 200-MW power plant, storage facilities, liquefaction and regasification units.
- Output will serve PEZA areas.

Alternative Fuels and Energy Efficiency

Areas for Investment :

- Energy efficient appliances & equipment
- High efficiency motors
- Fuel efficient & low-carbon vehicles
    - Hybrid, electric, etc.
    - Charging stations for Alternative Energy Vehicles
- Energy efficient building technologies
    - Green building
    - Building Energy Management Systems Design and Architecture
- Energy Service Companies (ESCOs)




Thank you!

For inquiries, please contact

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