



Efficient Implementation of Power Sector Reforms in the Philippines

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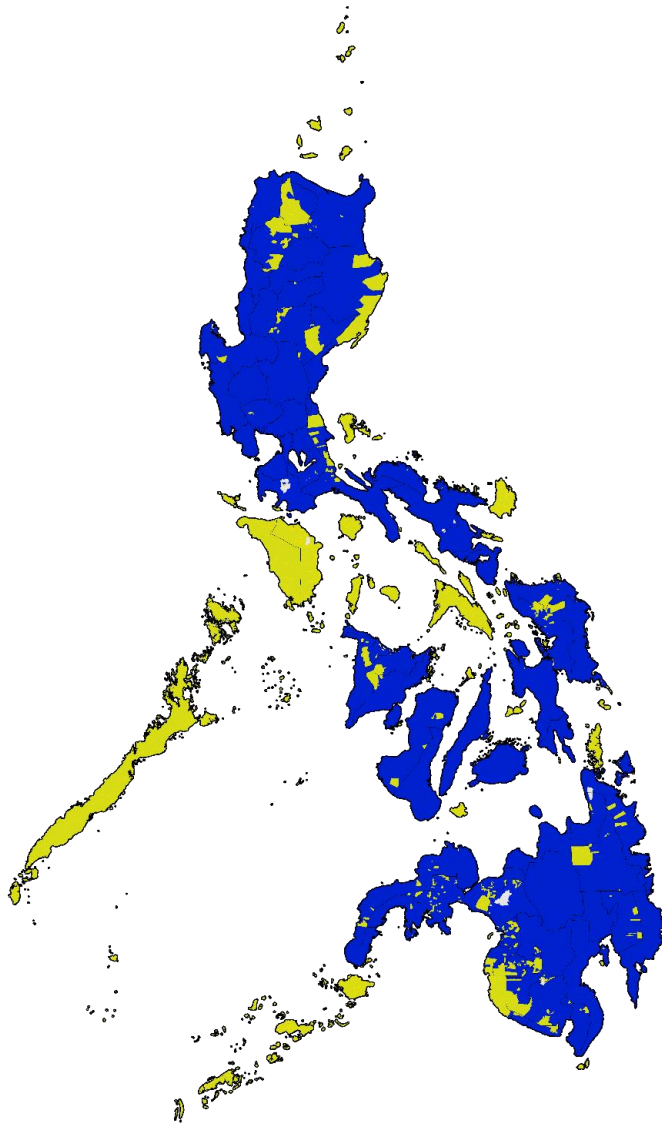


Presentation Outline

- A. Philippine Power Statistics and Status of Household Electrification
- B. Power Development Plan to 2040
- c. Policy Initiatives for the Implementation of Power Sector Roadmaps



Philippine Power System



Power System

Grid

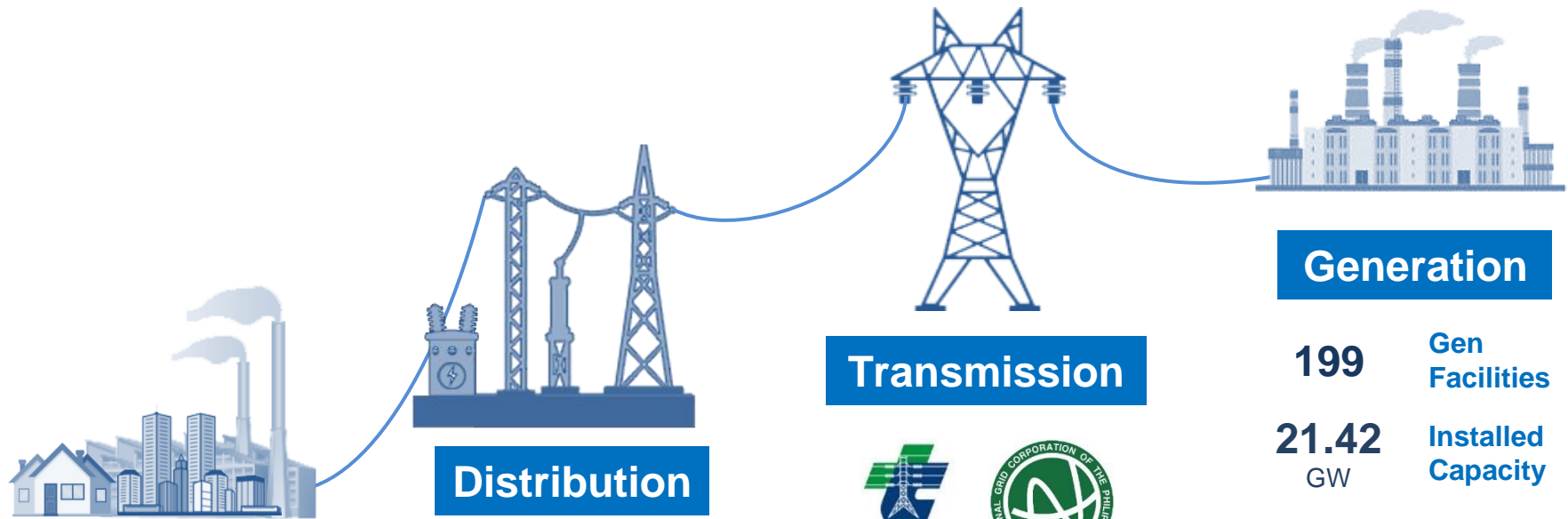
- Luzon, Visayas and Mindanao grids
- Connected to main transmission backbone

Off-Grid

- Missionary areas
- Also known as Small Islands and Isolated Grid (SIIG)
- Power supplied by NPC SPUG and Private Sector (New Private Provider and Qualified Third Party)



Grid Power System



Generation

199 Gen Facilities

21.42 GW Installed Capacity

90,798 GWh Gross Generation

48% Coal

22% Nat Gas

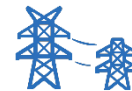
24% RE

6% Oil-based

Transmission



31,501 MVA



20,053 ckt-km

Distribution

23 PIOUTs

100 ECs

2 LGUOUTs

Peak Demand: 13.272 GW

PIOUTs - Private-Investor Owned Utilities

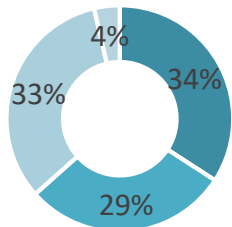
ECs - Electric Cooperatives

LGUOUTs - LGU-Owned Utilities

Load

74,154 GWh

2016
Electricity
Sales

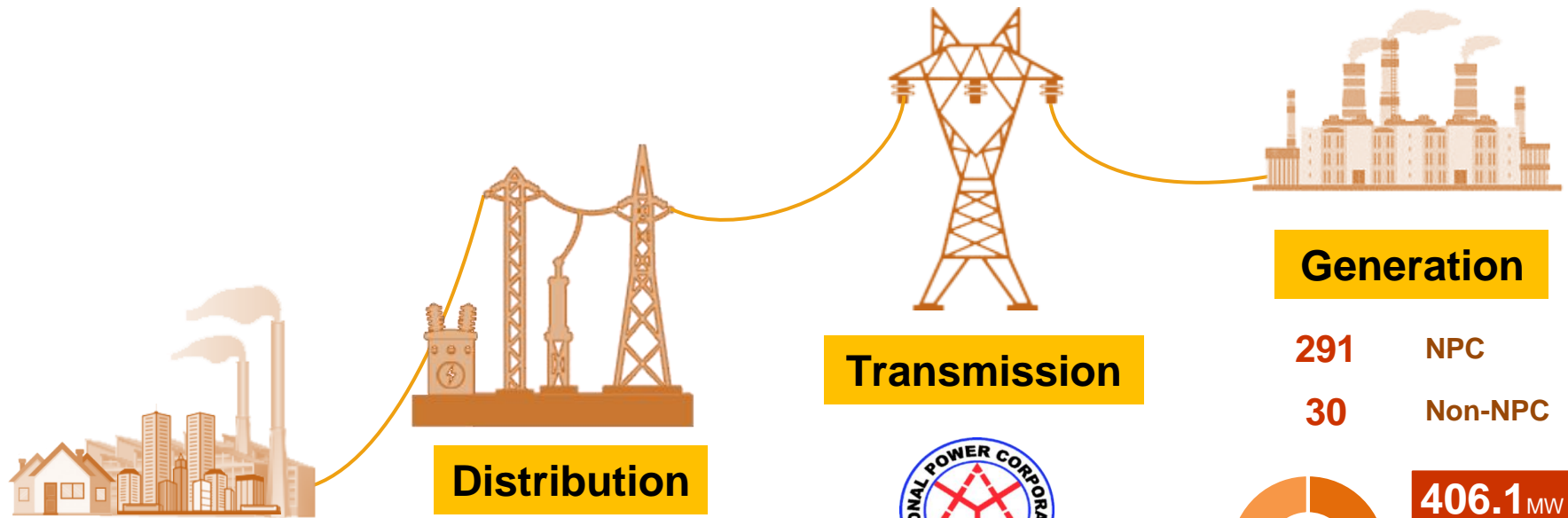


■ Residential ■ Commercial
■ Industrial ■ Others

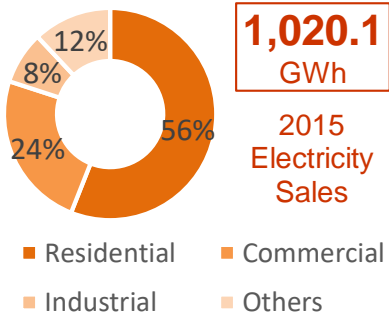
Sources of Data: DOE; NGCP



Off-Grid Power System



Load



64.3%*
Energized

Distribution

21 ECs
2 MPCs
3 LGUOUS
1 QTP

ECs - Electric Cooperatives
MPCs - Multi-Purpose Cooperatives
LGUOUS - LGU-Owned Utilities
QTP - Qualified Third Parties

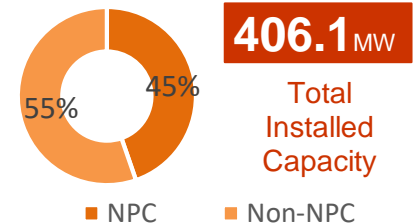
Transmission



170
MVA
770
ckt-km

Generation

291 NPC
30 Non-NPC



1,075 GWh Gross Generation

96% Diesel
4% Hydro

Source of Data: DOE; NPC

*excluding ARMM areas



Status of Household Electrification

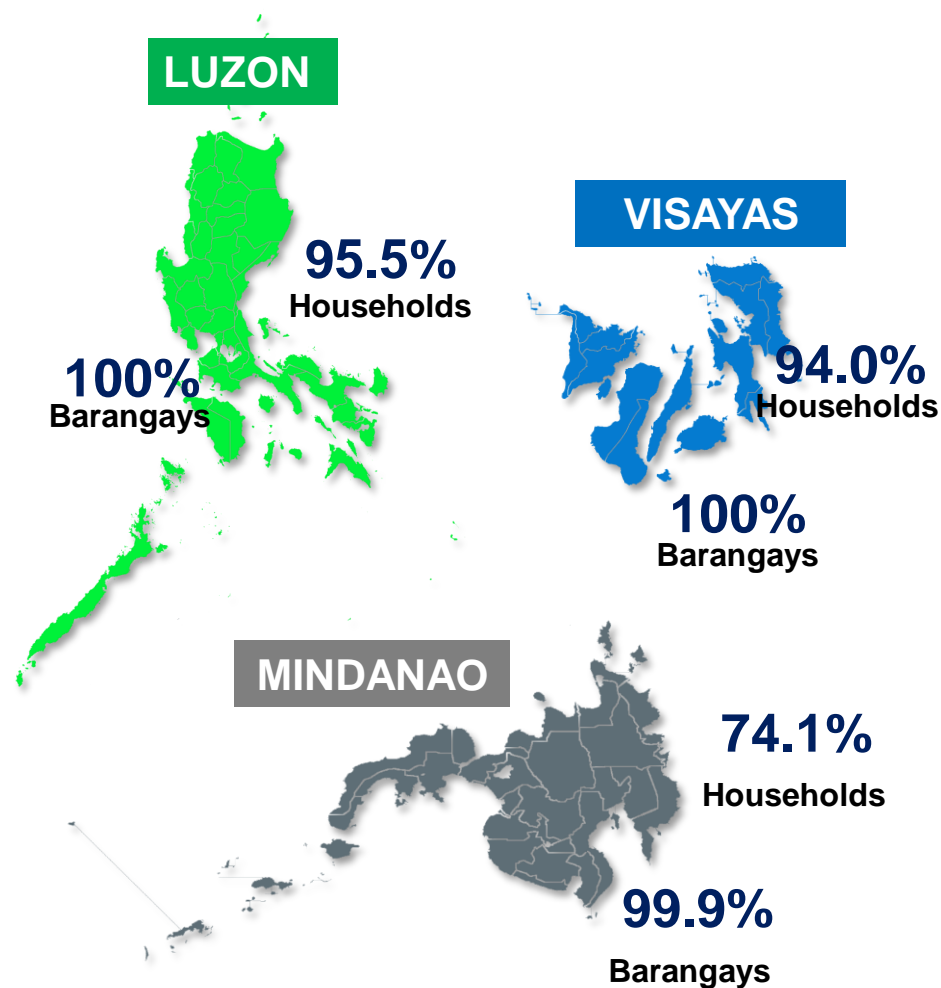
As of 31 December 2016



20.6 Million Households have electricity out of **22.7 Million Households** in the country

(Based on 2010 Census)

Distribution Utilities (in Millions HH)	HH Population Projected C2010	Served HH	Unserved HH	HH Electrification Level (%)
119 Electric Cooperatives	13.34	11.72	1.61	87.92%
MERALCO	7.09	6.92	0.17	97.64%
Other Distribution Utilities	2.29	1.95	0.34	85.05%
Philippines	22.72	20.59	2.12	90.65%



Status of Household Electrification

HH in Barangays
connected to Grid

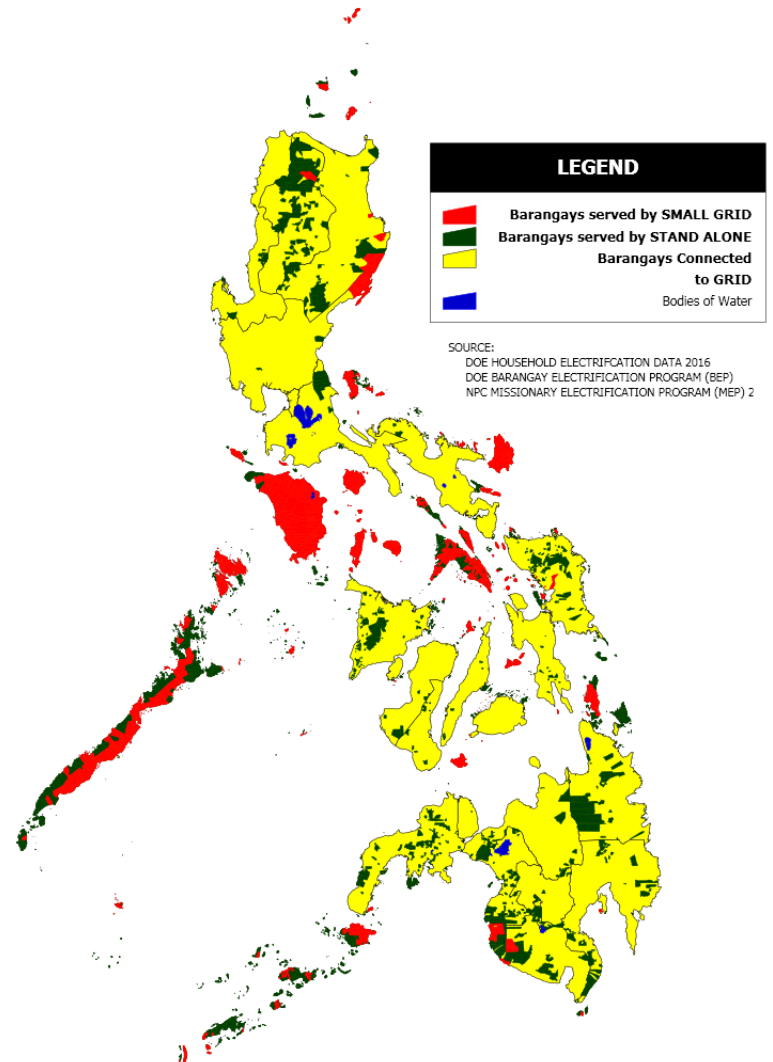
91.4%

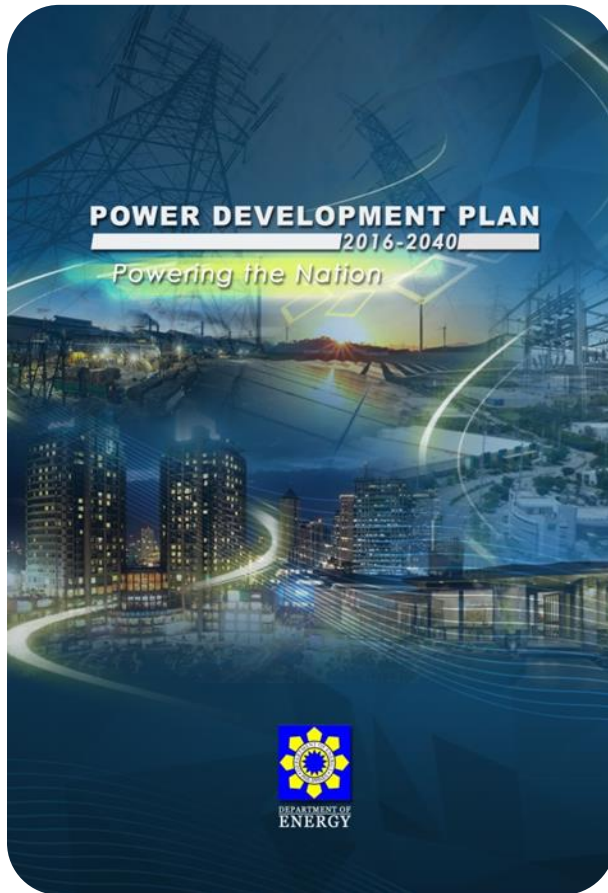
HH in Off Grid
Barangays

8.6%

Based on the available data from the following program:

- Household Electrification Development Plan 2013-2017
- Barangay Electrification Program (BEP)
- Missionary Electrification Program (MEP) 2017-2021





Power Development Plan to 2040



DOE's Mandate

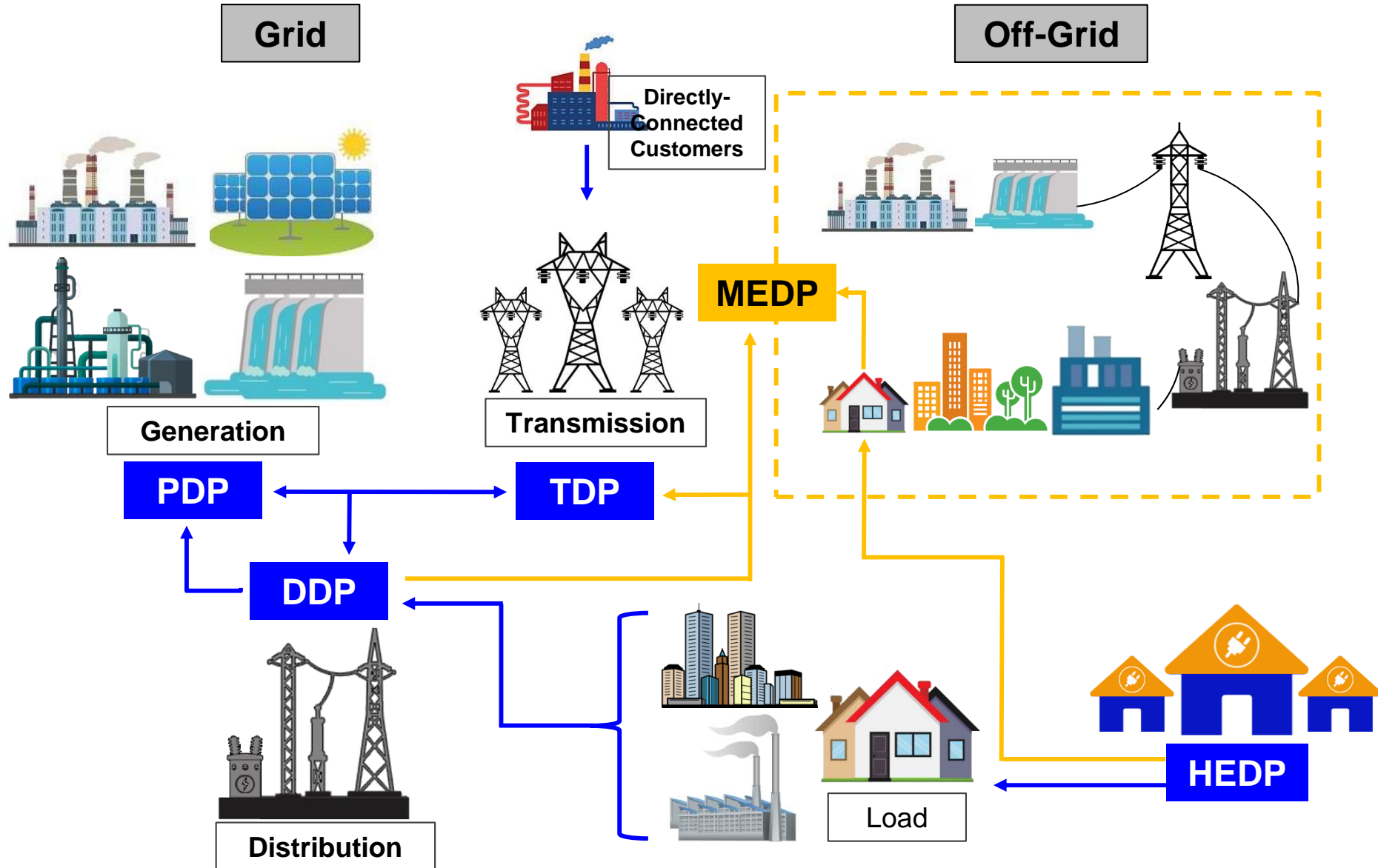
EPIRA, Sec. 37(c):



Prepare and update annually a **Power Development Program (PDP)** and integrate the same into the Philippine Energy Plan. The PDP shall consider and **integrate** the individual or joint **development plans** of the **transmission, generation**, and **distribution** sectors of the electric power industry, which are submitted to the Department

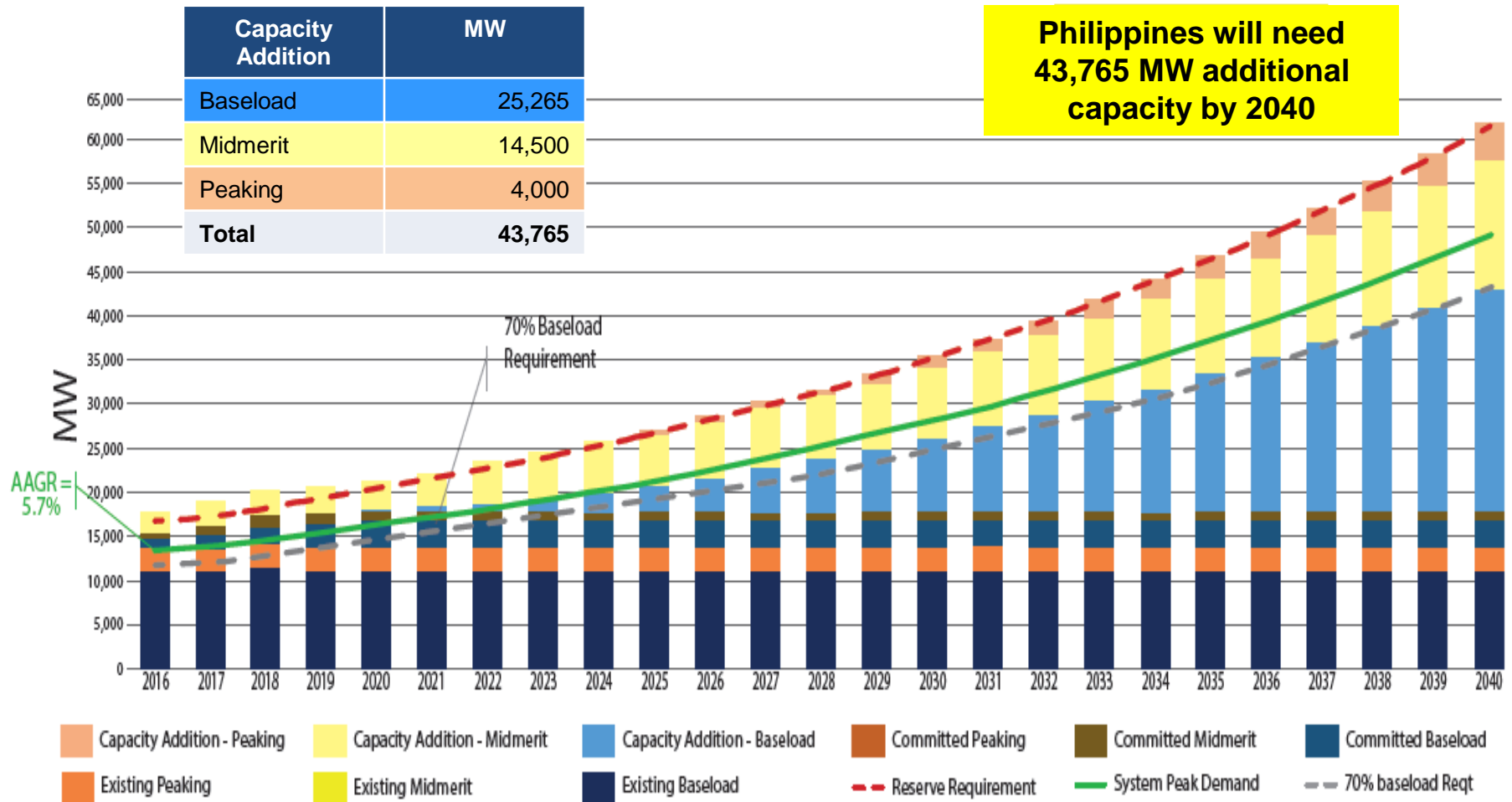


Power-Related Development Plans Linked



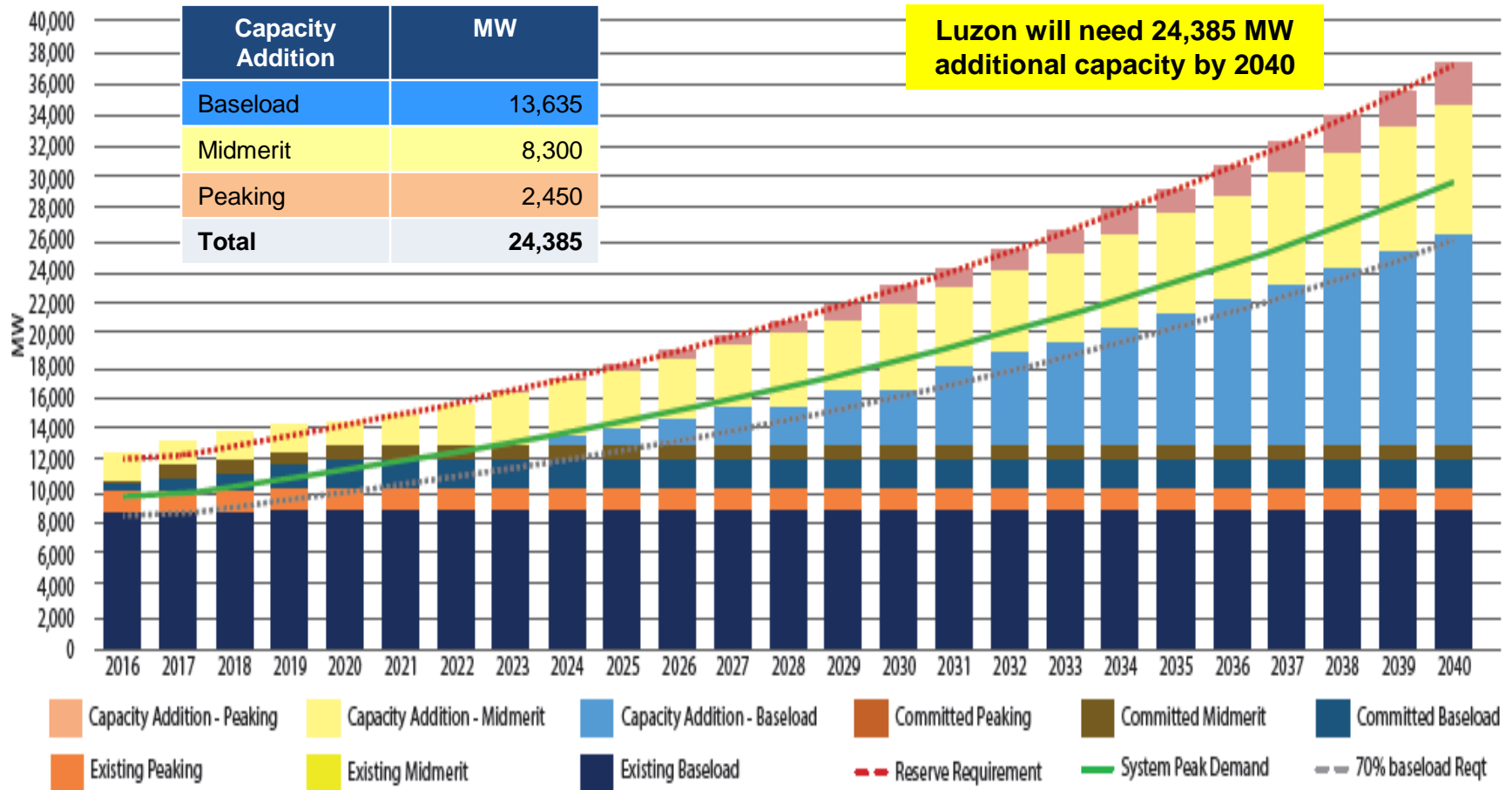
Power Demand and Supply Outlook

Philippines Demand and Supply Outlook, 2016-2040



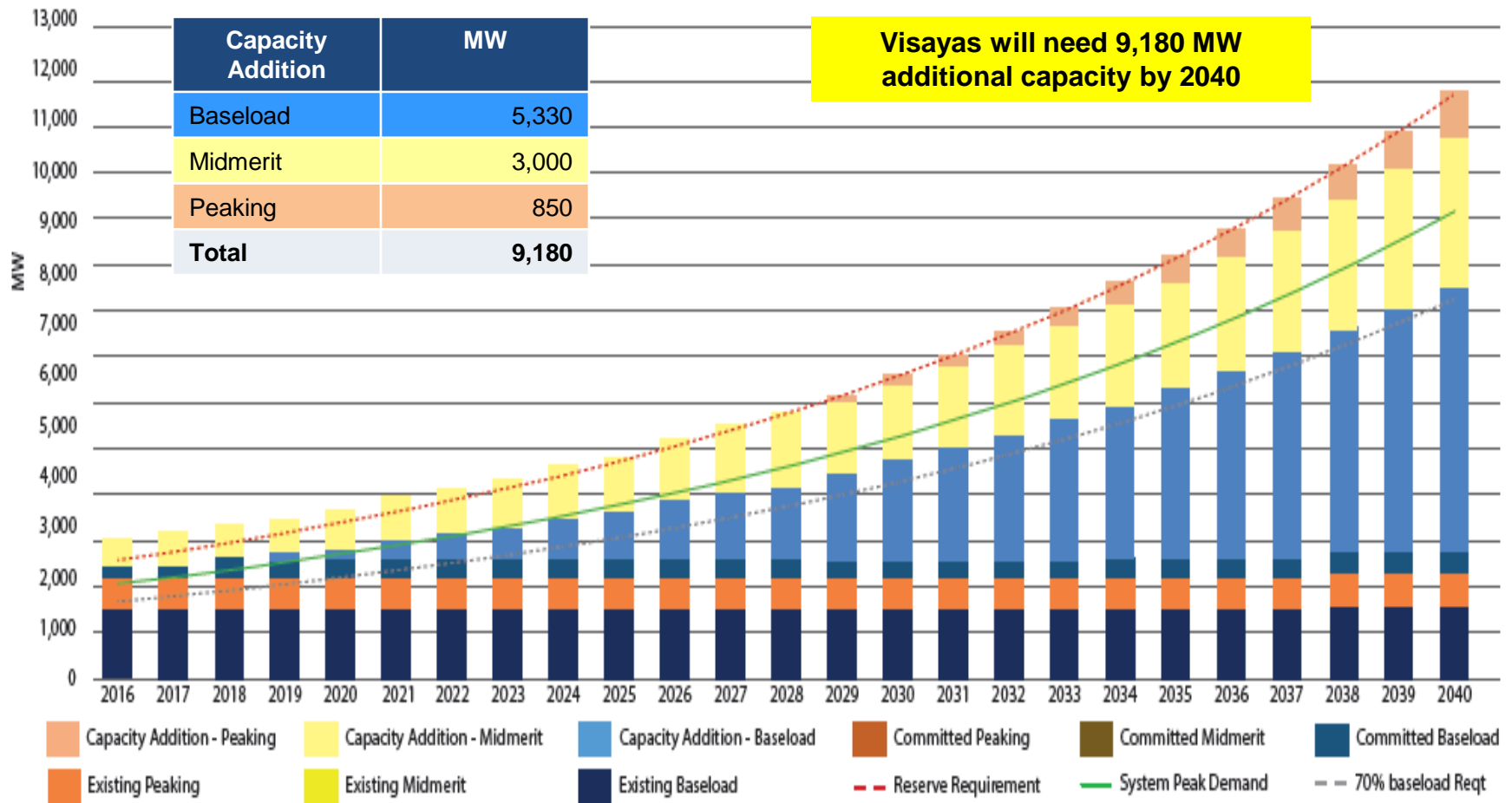
Power Demand and Supply Outlook

Luzon Demand and Supply Outlook, 2016-2040



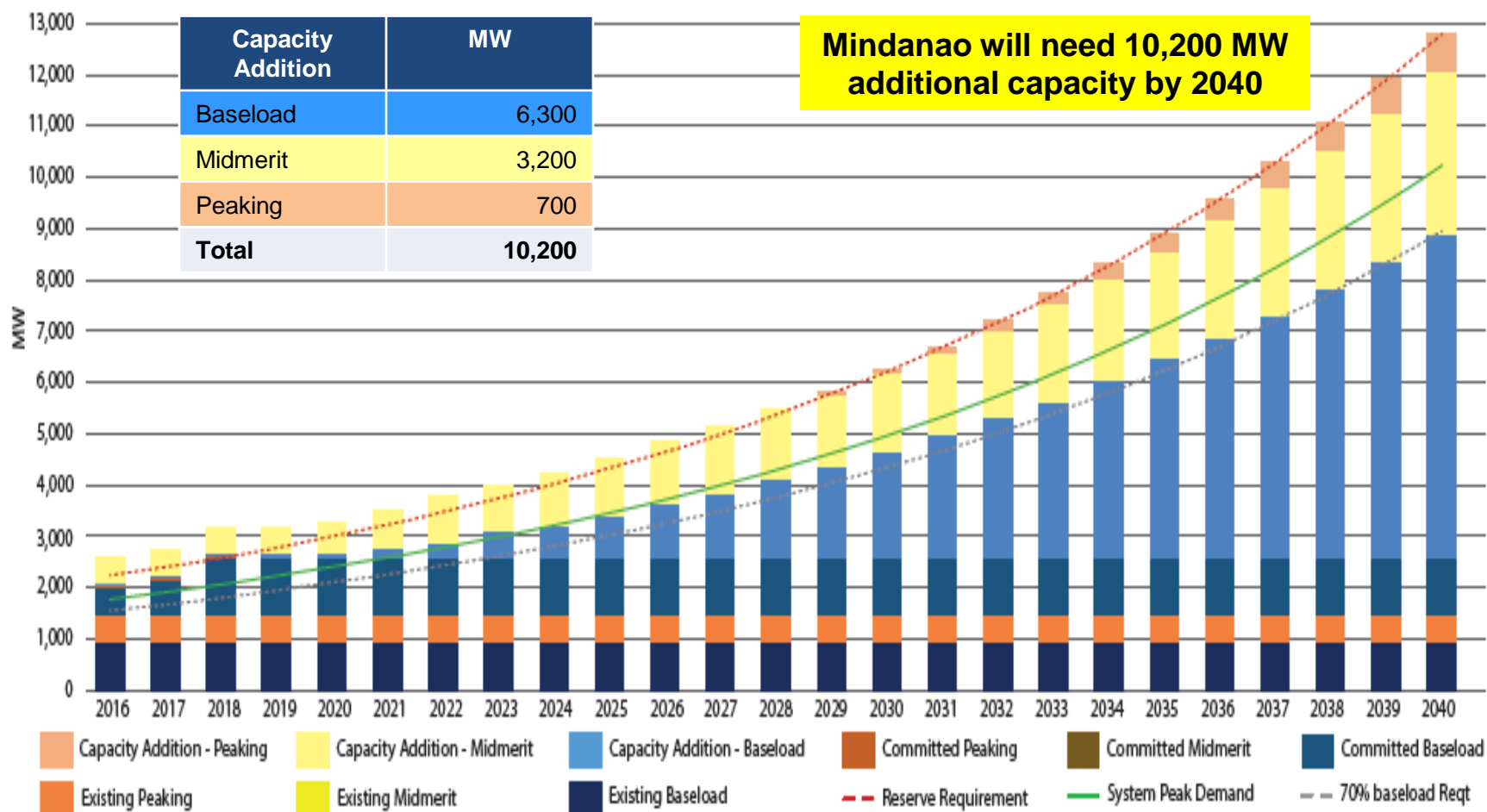
Power Demand and Supply Outlook

Visayas Demand and Supply Outlook, 2016-2040



Power Demand and Supply Outlook

Mindanao Demand and Supply Outlook, 2016-2040



Power Development Plan to 2040



Power Sector Roadmap

1 Generation

2 Transmission

3 Distribution and Supply

4 Market Development

5 Institutional and Support Mechanism

6 Missionary Electrification

7 Electrification





Policy Initiatives for the Implementation of Power Sector Roadmaps



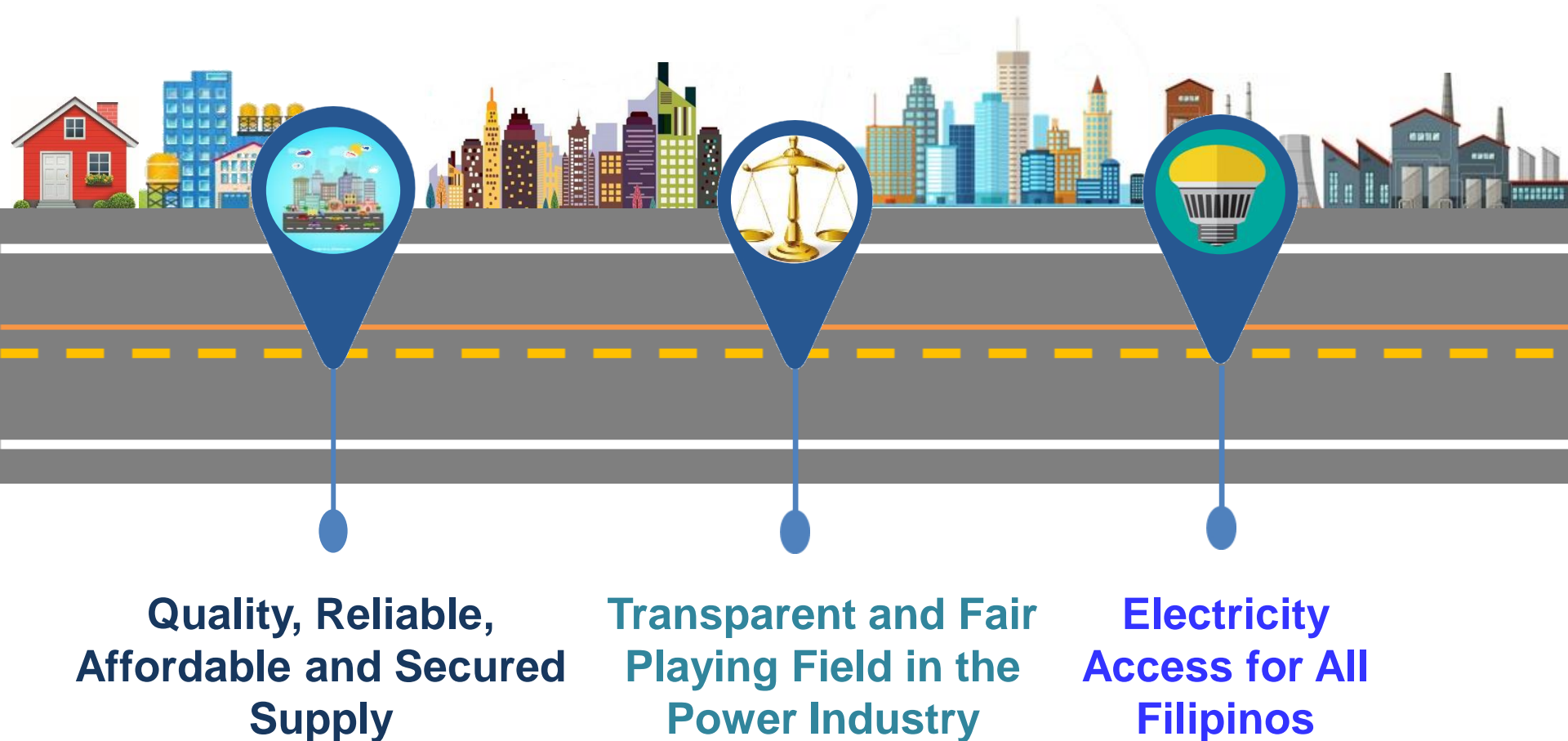
DOE Vision

“ A **globally-competitive DOE** powering up Filipino communities through **clean, efficient, robust and sustainable energy systems** that will **create wealth, propel industries** and **transform the lives** of men and women and the generations to come.

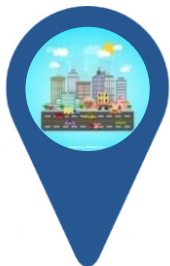
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Power Sector Roadmap Towards



DOE Major Accomplishments



Quality, Reliable, Affordable and Secured Supply

Formulated Power-Related Development Plans

Policy on Resiliency

EO 30 - Creation of the EICC



Transparent and Fair Playing Field in the Power Industry

WESM Mindanao Launch

WESM Design Enhancements

Governance and Market Audits



Electricity Access for All Filipinos

90% HH Electrification Achieved in 2016

NIHE Implementation

DOE-DPWH Joint Department Circular

EPIRA IRR Review

Policy on G, T, D Performance Assessment

EICC – Energy Investment Coordinating Council

GTD- Generation, Transmission, Distribution



Quality, Reliable, Affordable and Secured Supply



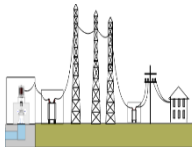
Policy for the integration of Energy Storage Systems (ESS) in the Power System



Policy Study on Electric Power Distribution Loss



Policy on Embedded Generation



Policy on Smart Grid

**Quality, Reliable, Affordable
and Secured Supply**

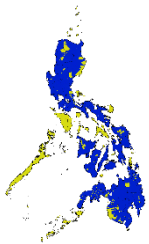
Transparent and fair playing field
in the power industry

Electricity Access for All Filipinos



Quality, Reliable, Affordable and Secured Supply

OFF-GRID



Policy Research/Study on Island Interconnection



RE Hybridization of NPC-SPUG Power Plants

**Quality, Reliable, Affordable
and Secured Supply**

Transparent and fair playing field
in the power industry

Electricity Access for All Filipinos



Transparent and fair playing field in the power industry



Policy on Causer Pays Mechanism for the proper utilization and fair recovery of the Ancillary Services



Providing policies on the implementation of Retail Competition and Open Access (RCOA) through Voluntary Participation of the Contestable Customer and effective participation of Retail Electricity Suppliers in the Retail Market

Quality, Reliable, Affordable and Secured Supply

Transparent and fair playing field in the power industry

Electricity Access for All Filipinos



Electricity Access for All Filipinos



Policy study on the allocation of PSALM capacity in Mindanao to marginalized customers and economic zones



Implementation of the Annual Work Program pursuant to Section 6a, Rule 29 (Part A) of the EPIRA IRR



Policy Review of the Implementation of the DILG-DOE Joint Circular 95-01 & 98-01 National Wealth Tax which is part of Rule 29 Part B of the EPIRA IRR

Quality, Reliable, Affordable and Secured Supply

Transparent and fair playing field in the power industry

Electricity Access for All Filipinos



Initial Assessment of Household Electrification

Based on 2015 Census

>2 Million Households
to be electrified by 2022
based on 2015 Census



Distribution Utilities (in Millions HH)	HH Population C2015	Served HH	Unserved HH	HH Electrification Level (%) June 2017
119 Electric Cooperatives	14.57	11.99	2.58	82.29%
MERALCO	6.48	6.48 (6.92)**	0	100.00%
Other Distribution Utilities	1.93	1.93 (1.95)**	0	100.00%
Philippines	22.98	20.41	2.57	88.77%

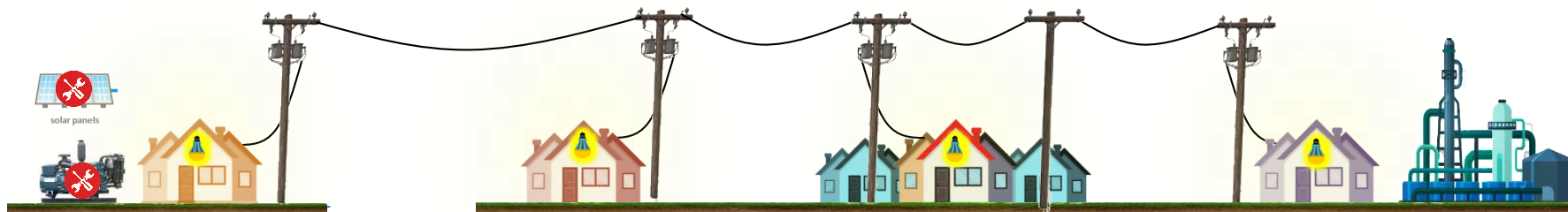
*Based on NEA Status of Energization Report as of June 2017

** Based on PIOUs and LGUOUs DDP 2017-2026 Household Electrification Level (%) as of Dec. 2016. Number of served households are already more than the number of household provided un Census 2015



Electricity Access for All Filipinos

GRID ELECTRIFICATION PROGRAMS AND PROJECTS



NEA- Barangay Line Enhancement Program (BLEP)

- Extension of DX lines to previous off-grid electrified areas, enhancement of lines and/or submarine cables

NEA- Sitio Electrification Program (SEP)

- Extension DX lines to far flung areas and sitios

Nationwide Intensification of Household Electrification (NIHE)

- Intensification of Household Electrification through grant house-wiring subsidy

ER 1-94 Electrification Fund Program

- Provision of electrification projects leading to 100% electrification of to Host Communities

Quality, Reliable, Affordable and Secured Supply

Transparent and fair playing field in the power industry

Electricity Access for All Filipinos



Electricity Access for All Filipinos

OFFGRID ELECTRIFICATION PROGRAMS AND PROJECTS

DOE-PV Mainstreaming Program (PVM)

- Provision of individual PV SHS to off-grid/unviable areas



Qualified Third Program (QTP)

- Provision of Generation to Distribution services to areas deemed unviable and waived by the DUs

DOE- Household Electrification Program using RE System (HEP)

- Provision of individual PV SHS if a hydropower resource is available within a reasonable distance from the clustered household beneficiaries.



NPC Missionary Electrification Program (MEP)

- Provision of Generation Capacity to Off-grid Areas

Quality, Reliable, Affordable and Secured Supply

Transparent and fair playing field in the power industry

Electricity Access for All Filipinos



Electricity Access for All Filipinos



Rationalization of UCME Subsidy System



Research on the Improvement of Private Sector Participation (PSP) Program for Missionary Areas



Preparation of Philippine Total Household Electrification Master Plan for Off-grid Areas

Quality, Reliable, Affordable and Secured Supply

Transparent and fair playing field in the power industry

Electricity Access for All Filipinos



Electricity Access for All Filipinos



Conduct series of Public Consultation together with NEA and NPC on Total Electrification by 2022



Issuance of detailed yearly plans & target for each of Electrification Programs to achieve Total Household Electrification target

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Transparent and fair playing field in the power industry

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Thank You!



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