The Philippine Downstream Natural Gas Industry

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A WEBINAR ON PHILIPPINES: TAPPING INTO THE WORLD'S LNG MARKET
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Presentation Outline

1. Overview of the Downstream Natural Gas Industry
2. Development Plans and Programs
3. Regulatory Framework
4. Way Forward

1 Overview of the Downstream Natural Gas Industry

NATURAL GAS MARKET

Location: Batangas City, Philippines

Malampaya
Gas-to-Power Project
2.7 TCF (2001)

500 MW
San Lorenzo
First Gen

1,000 MW
Sta. Rita
First Gen

1,200 MW
Ilijan Power Plant
NPC/BOT by
KEPCO

97 MW
Avion
First Gen

414 MW
San Gabriel
First Gen

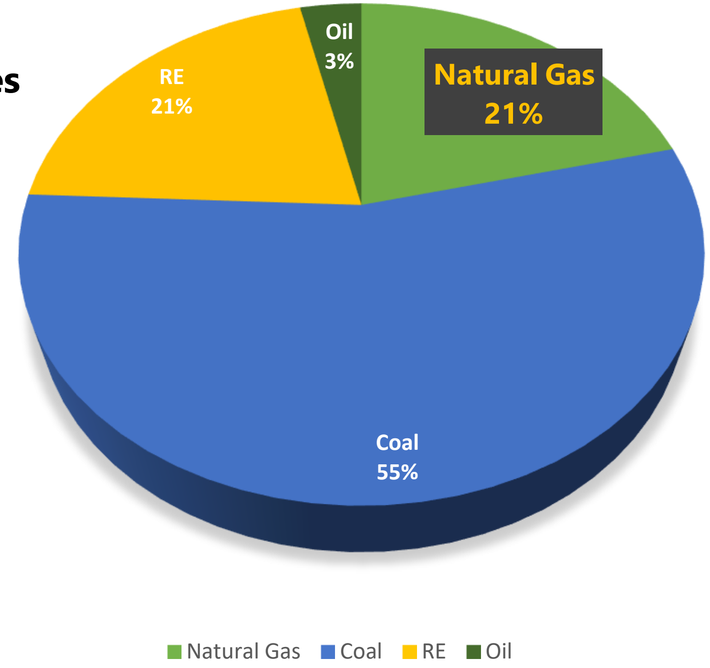
17MW
Own-Use
Shell Tabangao
Refinery

Total = 3, 200 MW

1 Overview of the Downstream Natural Gas Industry

❑ Share of Natural Gas, 2019 Gross Power Generation

Philippines

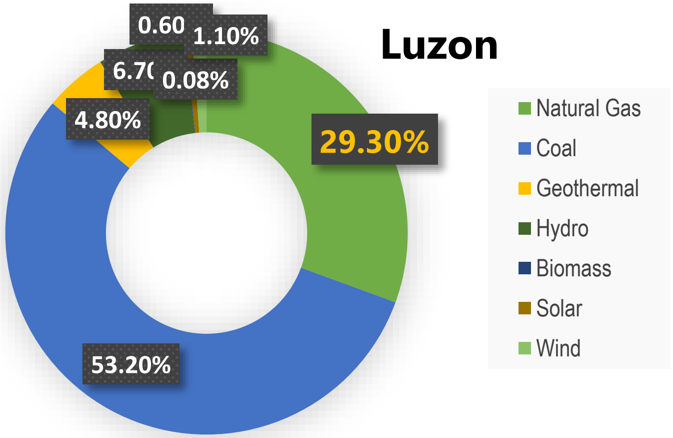


MALAMPAYA
DEEP WATER GAS-TO-POWER

The aggregate capacity of natural gas power plants is 3,200 MW.

Natural gas contributed 21.1% in the 2019 Gross Generation of the country.

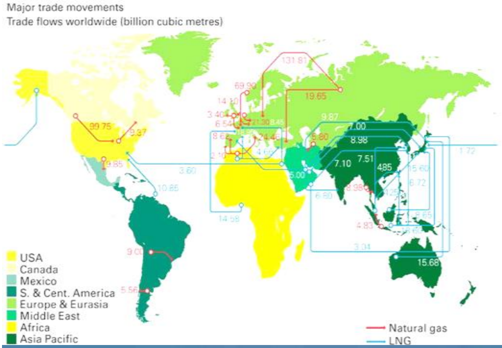
In Luzon, natural gas contribution is around 29.3%.



Reference: https://www.doe.gov.ph/sites/default/files/pdf/electric_power/2019-power-situation-report.pdf

1 Overview of the Downstream Natural Gas Industry

❑ Status of Natural Gas Supply



- Malampaya has existing six (6) gas sales and purchase agreements (GSPA) for a total of 3,200+ MW.
- GSPA's of said power plants will terminate starting 2022 until 2024.

Power plant	Validity of GSPA
1200 MW Ilijan PP (KEPCO)	Jan 1, 2022
1000 MW Sta Rita PP (First Gen)	Jan 1, 2024
414 MW San Gabriel PP (First Gen)	Feb 23, 2024
97 MW Avion PP (First Gen)	Feb 23, 2024
17 MW own-use and process for Shell Pilipinas Oil Refinery	Feb 23, 2024
500 MW San Lorenzo PP (First Gen)	Jul 1, 2024

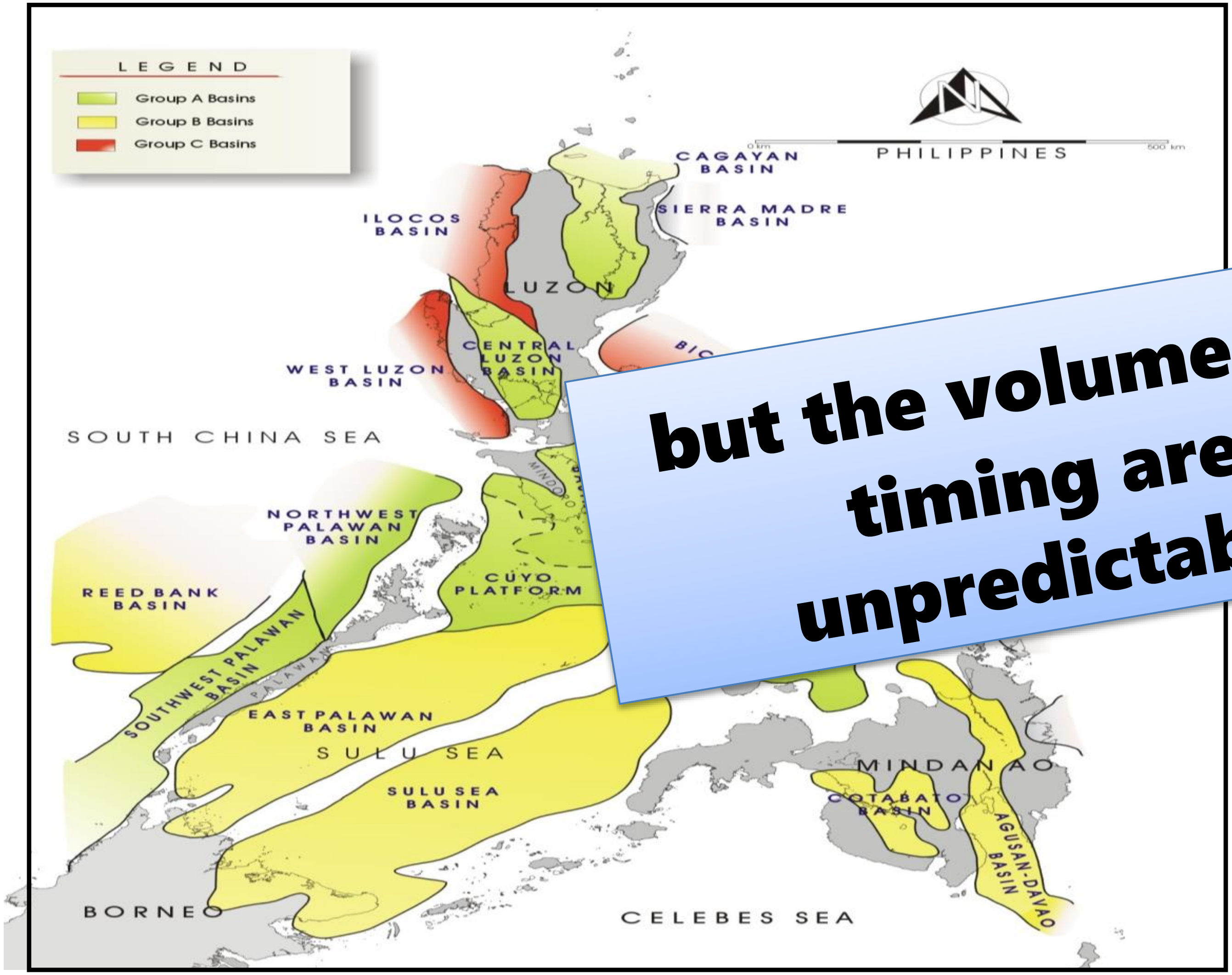
- Malampaya has an average production of 450 million standard cubic feet per day (450 mmscf/day).
- The Malampaya concession will expire in 2024 and drop in supply is expected to start by 2022.
- The supply can go as far as 2027 but it does not have enough gas for further expansion to provide the future natural gas requirements particularly on the plan to expand the application of natural gas in industrial, commercial, residential and transport sectors.
- There is no existing indigenous replacement for natural gas supply.

2 Development Plans and Programs

❑ To increase the utilization of natural gas . . .

- **Expand Supply Source** — intensifying exploration for indigenous gas deposits and consider the options for economically using imported LNG
- **Market Development** — vigorously promoting its use in the power generation. industrial, transportation, commercial and residential sectors
- **Develop Critical Infrastructures** — that will efficiently deliver gas to the demand centers
- **Establish Public-Private Partnership** — continue to encourage the private sector to assist government in developing the natural gas industry.
- **Capacity Building** — develop skills and competencies to manage the industry

➢ Expand Supply Source: Potential Domestic Natural Gas Supply



Petroleum Basin Prospectivity Map

Most Prospective Basins

1. NW Palawan Basin
2. SW Palawan Basin
3. Sulu Sea Basin
4. Cagayan Basin
5. Visayan Basin
6. Central Luzon Basin
7. Mindoro-Cuyo Platform

Prospective Basins

1. East Palawan Basin
2. Reed Bank Basin
3. SE Luzon Basin
4. Agusan-Davao Basin
5. Cotabato Basin

Frontier Basins

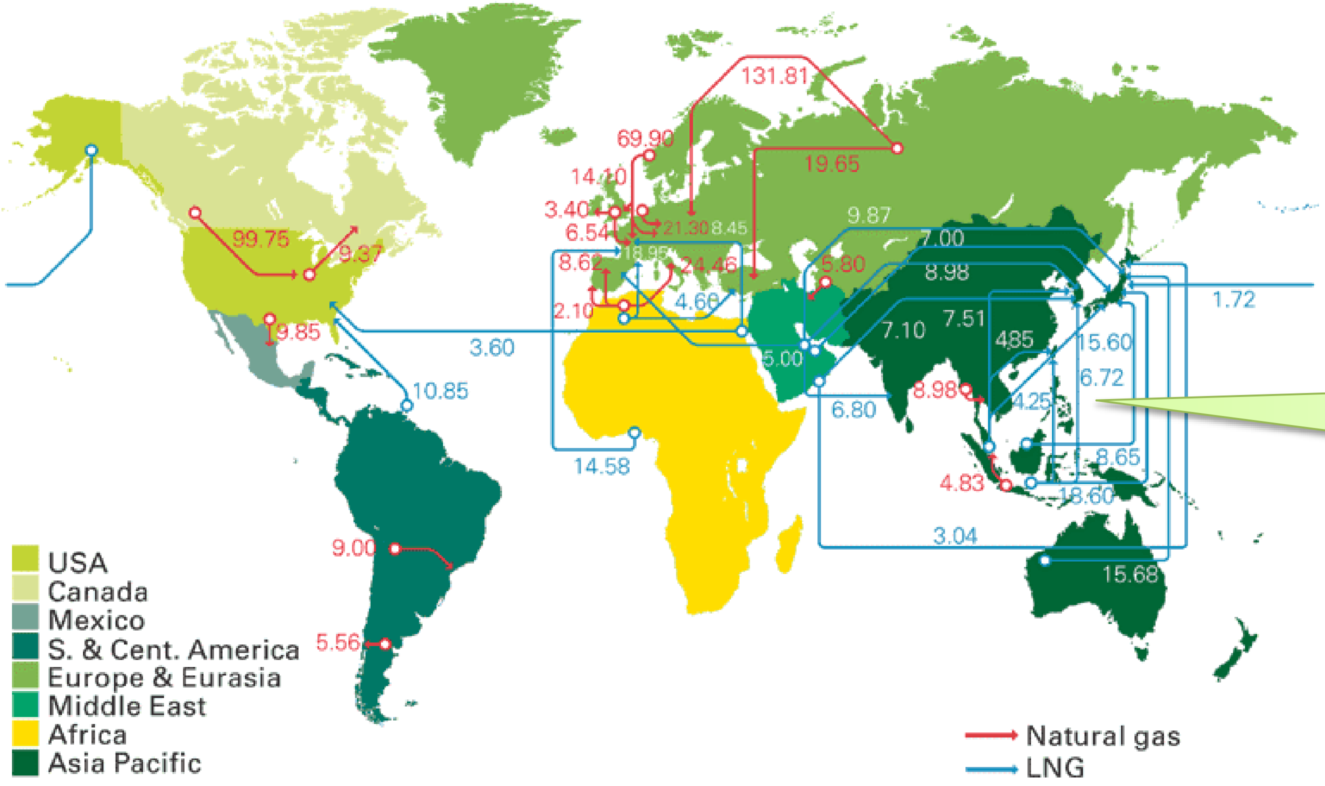
1. West Luzon Basin
2. West Masbate-Iloilo Basin
3. Ilocos Basin
4. Bicol Shelf Basin

but the volumes and timing are unpredictable

➢ Expand Supply Source: LNG Importation

❑ Access to Imported LNG

Major trade movements
Trade flows worldwide (billion cubic metres)



The Philippines sits in the middle of Asian LNG Trade.

Source: BP Statistical Review 2007

➢ Expand Supply Source: LNG Importation

❑ Necessity of LNG Importation

- In the short term, Philippines has no sufficient supply from Malampaya or other potential developments to justify new infrastructure development.

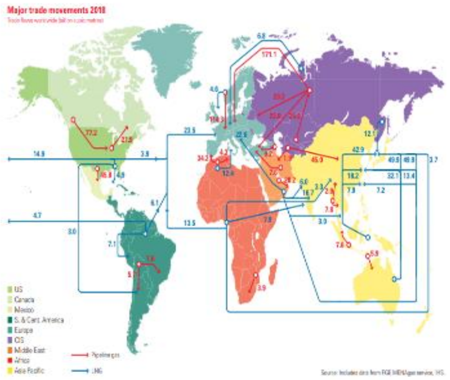
- The logical source of new gas would be the imported liquefied natural gas (LNG) to ensure supply security and sustainability of natural gas in the country.

- Global supply is adequate. Luzon might initially require 5 MTPA of LNG for the existing 3,200 MW gas-fired power plants, industrial, conversion of off-grid power plants and transport sector.

- Much cheaper than oil, competitive with coal in the mid-cycle, and once import facilities are built, industrial, commercial, transportation and residential users can also gain access to gas.

- The Philippine can easily have access to LNG supply as it is strategically located in the LNG trade route.

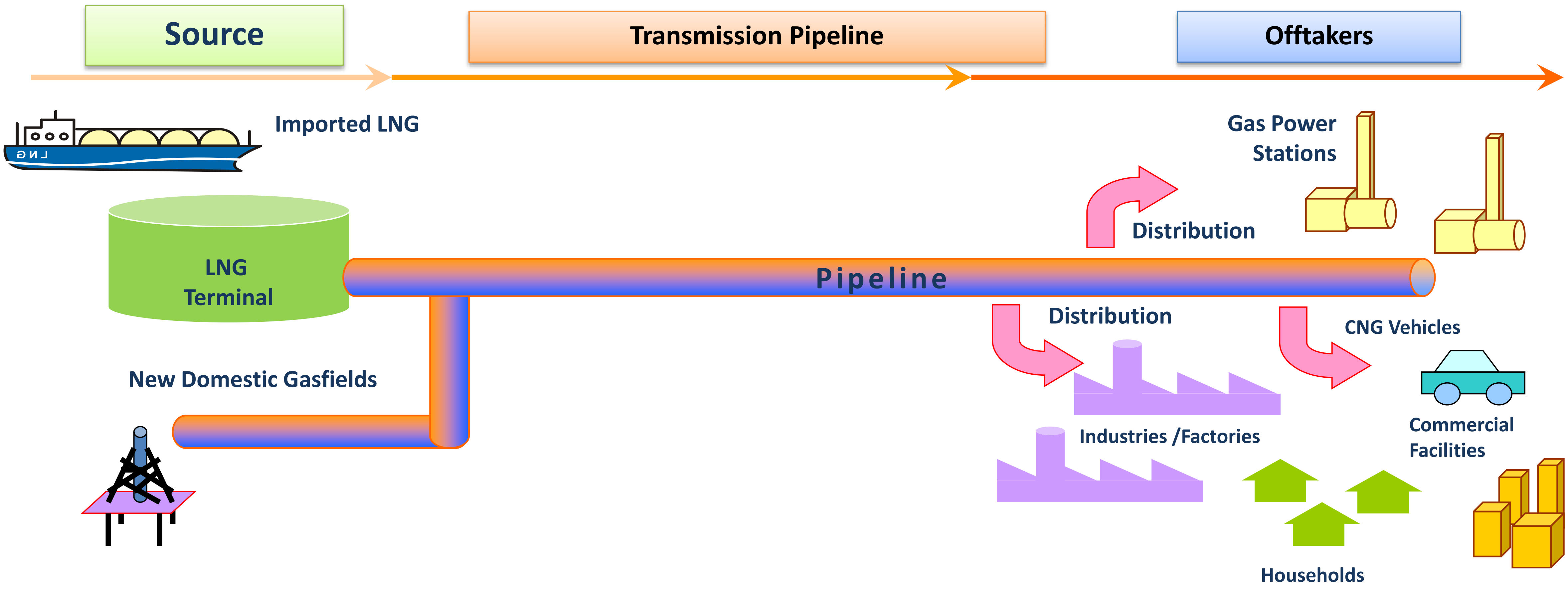
- The Philippines today cannot access the LNG market: There are no existing or operational import facilities.



➢ Potential Market for Natural Gas

Infrastructure Development

❑ Develop Critical Infrastructure in Luzon



➢ Infrastructure Development

Proposed Terminal Projects in Luzon

ProponentStatus	Project	Capacity	Location	Estimated COD[1]	Type of Permit Issued	Status
FGEN LNG Corporation	Interim Floating Storage and Regasification Unit (FSRU) Liquefied Natural Gas Terminal	5.26 MTPA	Barangays Sta. Clara, Sta. Rita Aplaya, and Bolbok in Batangas City	Q4 2022	• Notice to Proceed (NTP)[2] issued on March 7, 2019 • NTP Extension Letter issued by DOE on October 17, 2019, extending the validity of original NTP until March 8, 2020	• Permitting from Government Agencies and Construction prior Operation • Filed an Application for Permit to Construct on March 6, 2020 for ancillary facility for the interim FSRU
Excelerate Energy L.P.	Floating Storage Regasification Unit (FSRU) Liquefied Natural Gas Terminal	151,115 Cu m	About 9.5 km offshore in Bay of Batangas	Q3 2021	• NTP issued by DOE on September 20, 2019 • NTP Extension Letter issued by DOE on May 27, 2020 extending the validity of original NTP from March 21, 2020 until September 20, 2020	Permitting from Government Agencies and Financial Closing prior Construction
Batangas Clean Energy, Inc	LNG Storage and Regasification Terminal	3 .0 MTPA	Barangay Pinamucan-Ibaba, Batangas City	Q1 2025	• Notice to Proceed (NTP) issued on March 20, 2020	Permitting from Government Agencies and Financial Closing prior Construction
Energy World Gas Operations Philippines Inc.	LNG Storage and Regasification Terminal	3.0 MTPA	Barangay Ibabang Polo, Pagbilao Grande Island, Quezon Province	Q1 2021	Permit to Construct issued by DOE on December 21, 2018, valid for two (2) years	Permitting from Government Agencies and Construction prior Operation

3 Regulatory Framework

I. DOE Department Circular No. DC 2017-11- 0012 or the Philippine Downstream Natural Gas Regulation (PDNGR)

Issued on November 28, 2017

Provided a regulatory framework for the downstream natural gas industry in the Philippines:

1. Industry compliance to policies, rules, standards and best practices on siting, design, construction, expansion, modification, operation and maintenance of any gas related projects;
2. Industry compliance on importation of LNG, supply, and transport of natural gas ;
3. Provides for the legal, technical and financial documentary requirements, application procedure, evaluation process, criteria and permits;

Provided transparent guidelines for investors

Provided the creation of liberalize markets and entry of investment through TPA

1. Usher in the development of the natural gas industry to create more industry players

3 Regulatory Framework

II. Philippine National Standards/ DOE QS 011: 2016

Provides the quality specification for Natural Gas

Promulgated on June 20, 2016.

III. Executive Order No. 30

"Creating the Energy Investment Coordinating Council to Streamline the Regulatory Procedures Affecting Energy Projects"

Provided for energy projects amounting to at least US$70 million to be classified as Energy Projects of National Significance (EPNS)

Mandated the streamlining of permitting process of all government agencies under the Energy Investment Coordinating Council (EICC) to act on proposal within 30 days if the project is considered an EPNS, otherwise, the proposal is deemed approved

Issued on June 28, 2017

IV. Republic Act 11032

Ease of Doing Business and Efficient Service Delivery Act

Set a standardized deadline for government transactions

- 3 days - Simple transactions of business entities
- 7 days - More substantial transactions
- 20 days - Highly technical transactions

Issued on 28 May 2018

4 Way Forward

GAS POLICY DEVELOPMENT PROJECT

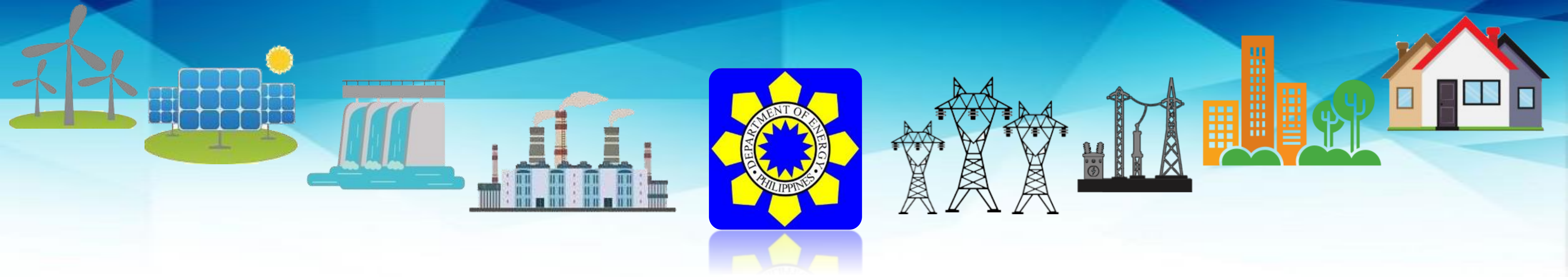
The Project provided **Technical Assistance** to the Department of Energy (DOE) in implementing the Philippine Downstream Natural Gas Regulation (PDNGR) or Department Circular DC2017-11-0012

Supported the **capacity building** of the DOE and other government partners in regulating the LNG industry through various trainings and workshops

Conducted a **research study** providing a better understanding of the sector

Extended **policy recommendations** on PDNGR and related bills

Continuation of the Gas Policy Development Project



Thank You!

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