

# Development Plans in the Emerging Downstream Natural Gas Industry

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# Presentation Outline

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- I. Overview of the Downstream Natural Gas Industry
- II. Policy Thrust/Directions
- III. Development Plans and Programs
- IV. Challenges in the Development Plans



# Overview of the Downstream Natural Gas Industry



414 MW San Gabriel  
First Gen/ IPP



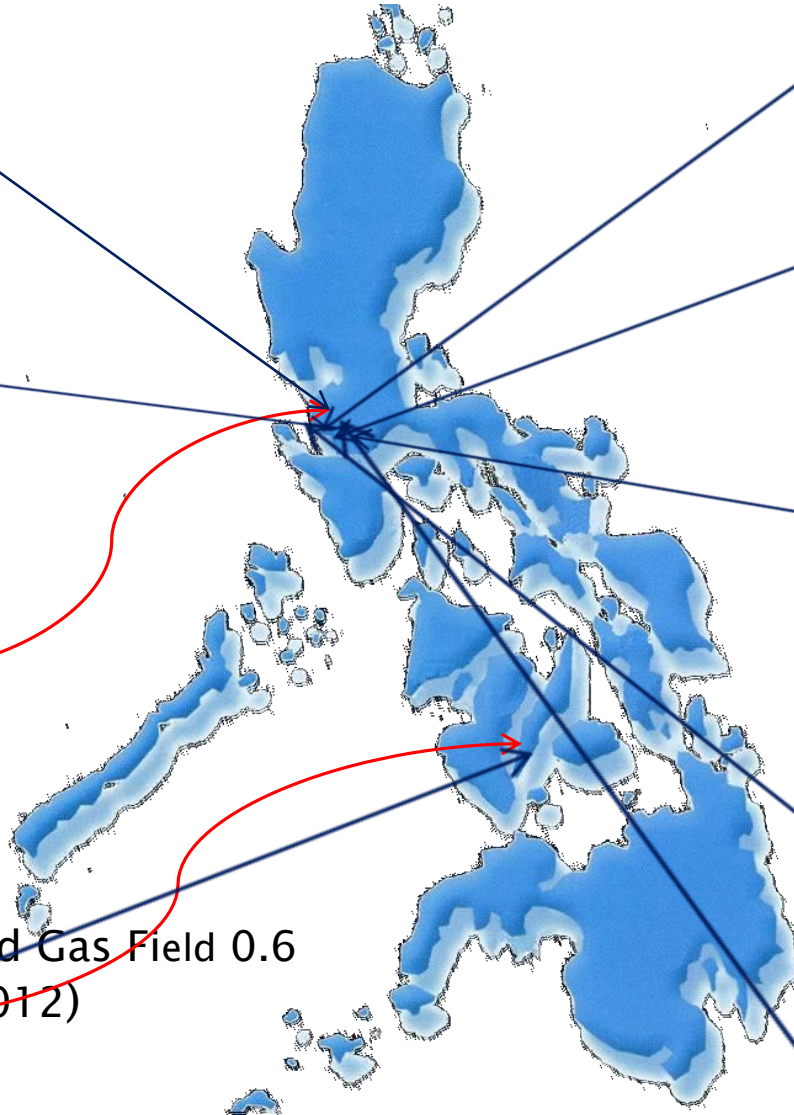
Shell Refinery



Malampaya Gas Field  
2.7 TCF (2001)



Libertad Gas Field 0.6  
BCF (2012)



97 MW Avion  
First Gen/ IPP



560 MW San Lorenzo  
First Gen/ IPP



1,000 MW Sta. Rita  
First Gen/ IPP



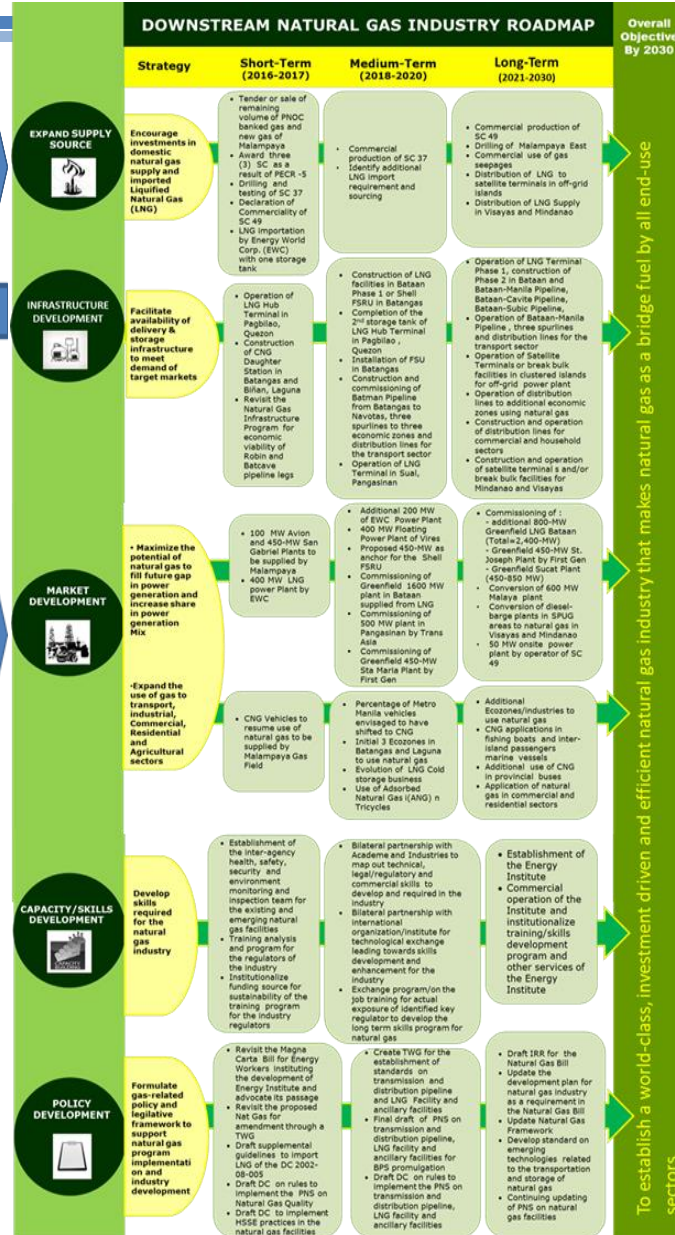
1,200 MW Ilijan Power Plant  
NPC IPP(KEPCO)



CNG Bus (2008)



# Policy Thrust/Directions



# Development Plans and Programs

To increase the utilization of natural gas :

- **Expand Supply Source**

- intensifying exploration for indigenous gas deposits and studying options for economically using imported LNG

- **Market Development**

- vigorously promoting its use in the 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



# Development Plans and Programs

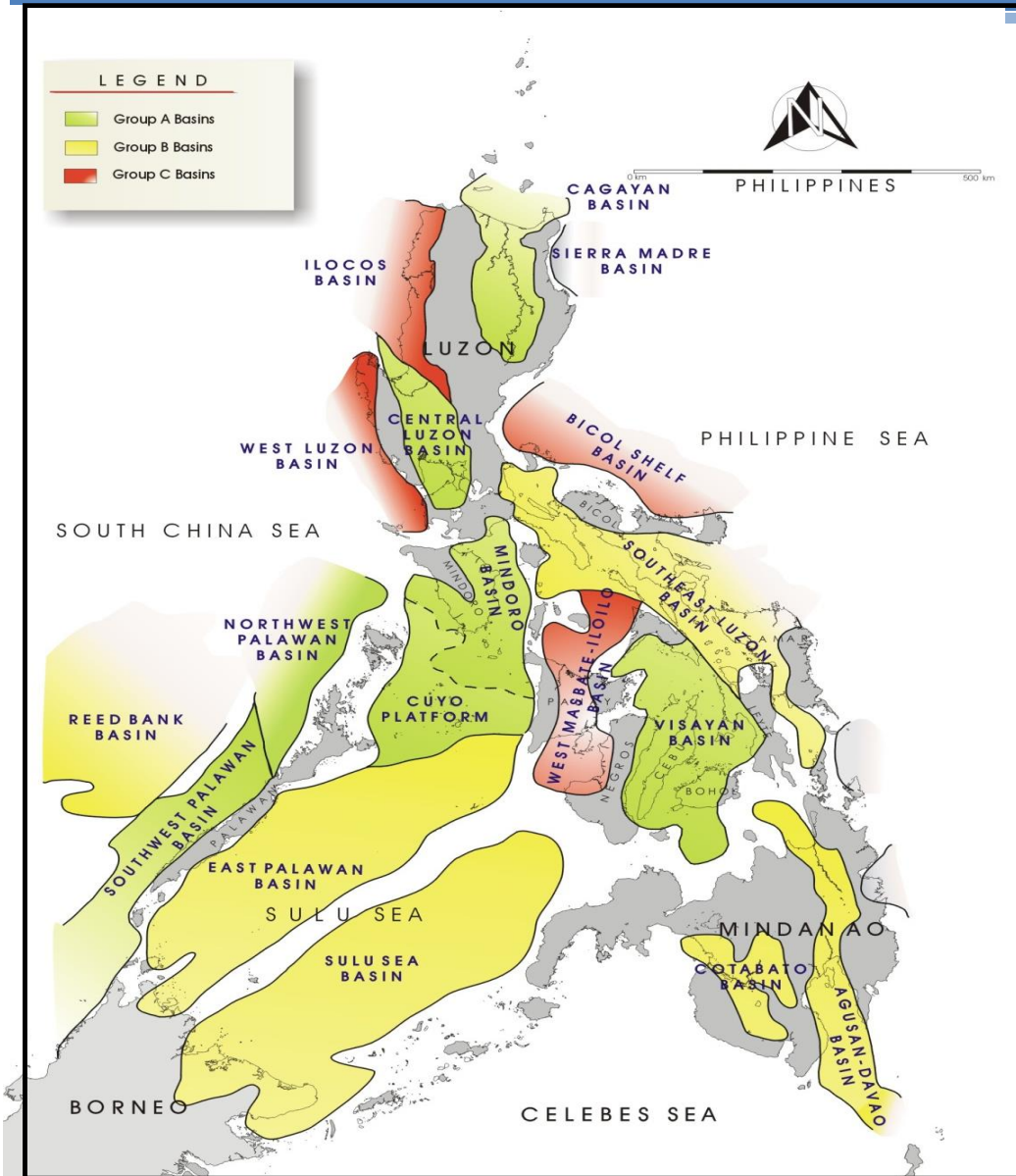
- ▶ Malampaya has six gas sales and purchase agreements
- ▶ Inflexible output from Malampaya with an average production of 380 million standard cubic feet (mmscf) per day
- ▶ Fuels 2,700 MW of power stations as baseload resources for the most part and additional 500+ MW operating as mid-merit and peaking plants and a refinery
- ▶ Given the production level and continuous drop in pressure, Malampaya gas field is expected to deplete in 2022.



- Recoverable Reserve end of field life is 3.08 to 3.29 TCF
- The Malampaya concession expires in 2024 and while it may have enough gas for some further expansion, this is not considered sufficient for more than about 5 years 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.



# Development Plans and Programs



## 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

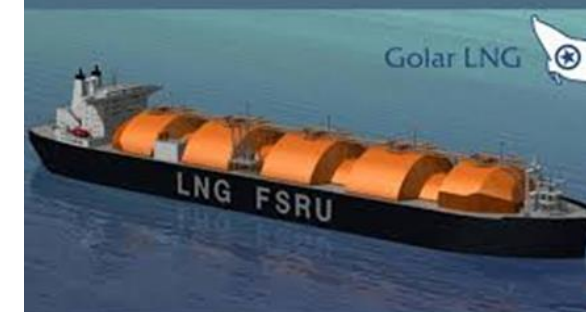
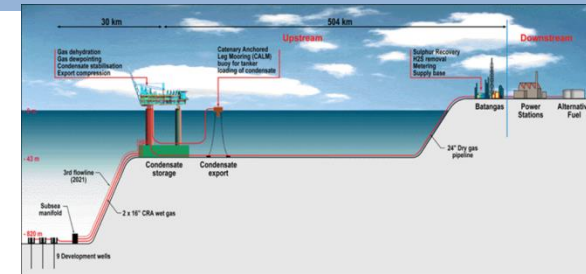
1. West Luzon Basin
2. West Masbate-Iloilo Basin
3. Ilocos Basin
4. Bicol Shelf Basin



# Development Plans and Programs

- ▶ In the short term, there are not sufficient resources from Malampaya or other potential developments to justify new infrastructure development
- ▶ New gas might come from domestic resources, but the volumes and timing are unpredictable
- ▶ The only sure source of new gas in the medium term (through 2020) would be imported liquefied natural gas (LNG) to ensure supply security and sustainability of natural gas
- ▶ The Philippines today cannot access the LNG market: there are no existing or operational import facilities
- ▶ Much cheaper than oil, competitive with coal in the mid-cycle, and once import facilities are built, industrial, commercial, and transportation users can also gain access to gas

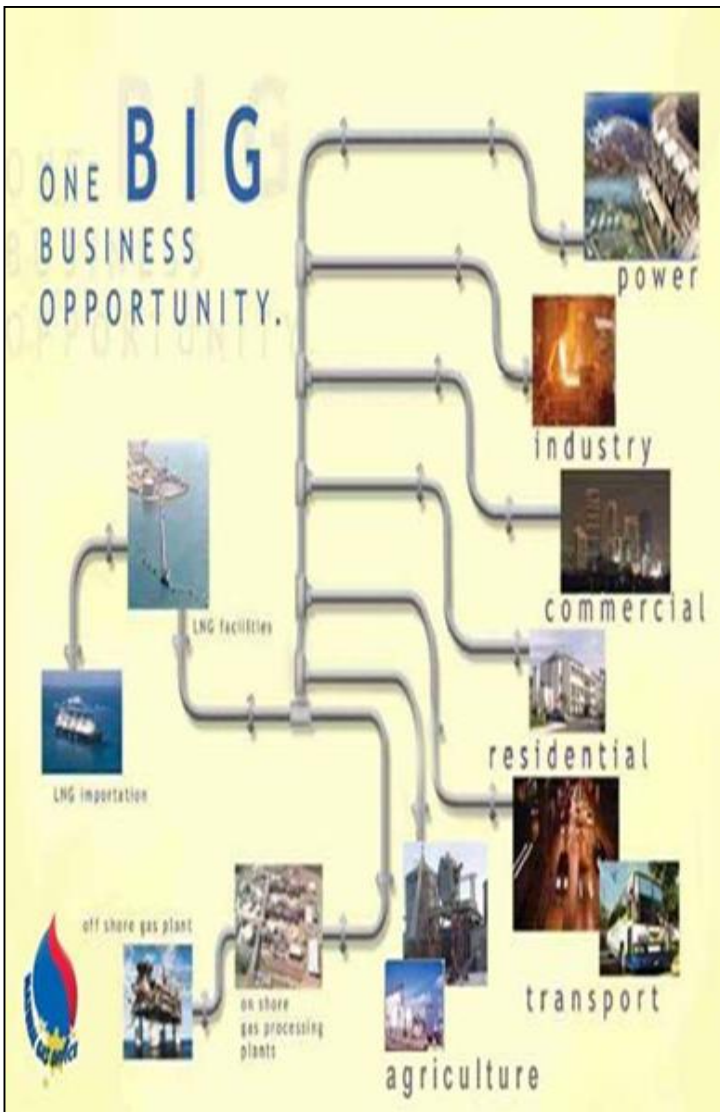
The commercialization challenge : develop a market for LNG that can justify the investment in the LNG importation facilities



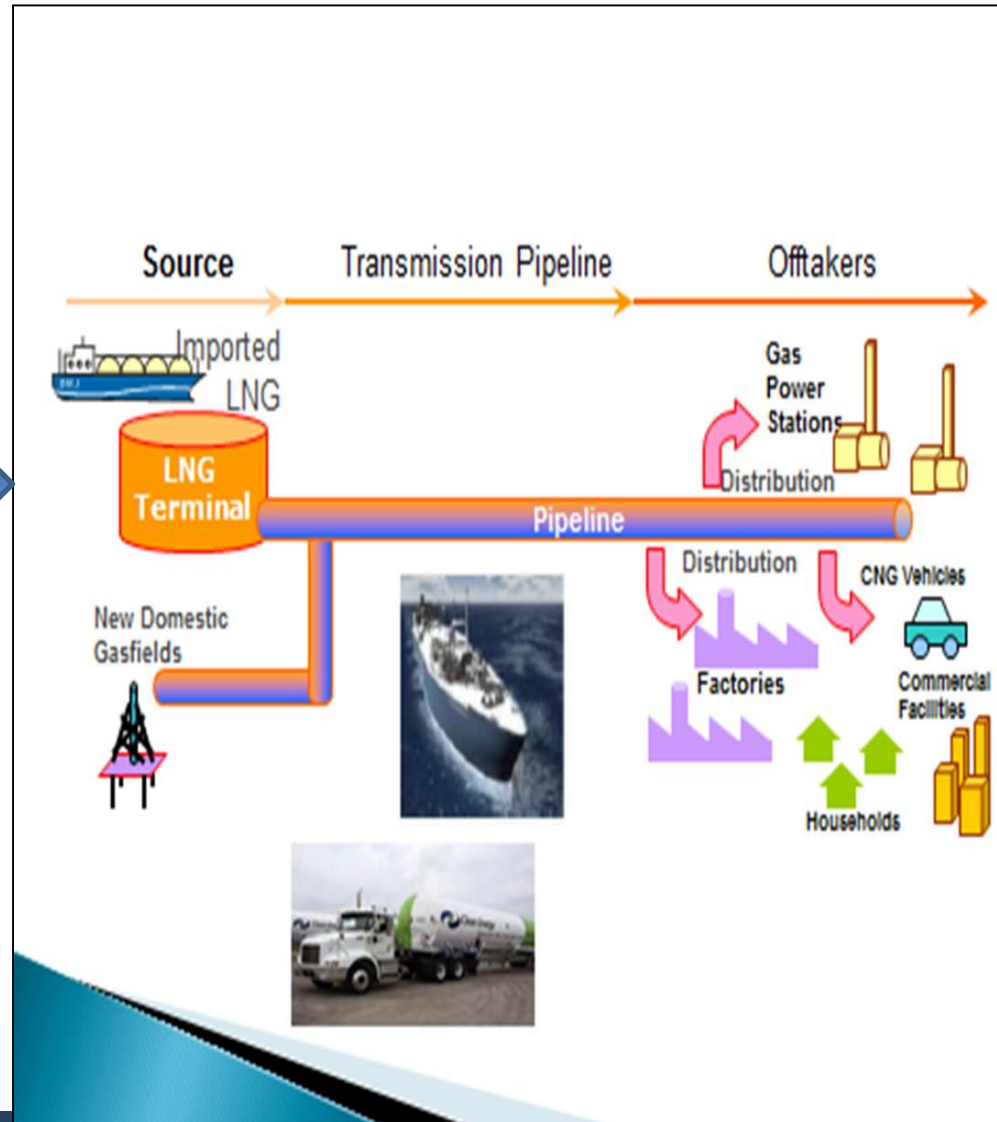


# Development Plans and Programs

## Potential Market for Natural Gas



## Strategic Infrastructure in Luzon



# Development Plans and Programs

## Integrated LNG Terminal



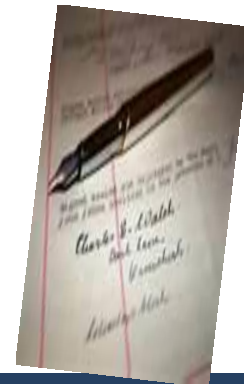
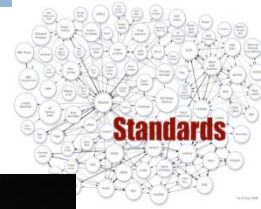
Project Cost: **PHP 100 billion**  
Targeted Completion: **2020**

- 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.



# Development Initiatives

- Natural Gas Quality Standard
- Creation of Inter-Agency Health, Safety, Security Environment (HSSE) Inspection Team
- Organized the Natural Gas Coalition Group
- Ongoing drafting of the LNG Department Circular



# Challenges in the Development Plans

- Limited supply of Natural Gas
- Power generation sector remains to be the main driver to natural gas industry development
- Lack of Available Natural Gas Infrastructure Network
- Absence of Natural Gas Law
- Lack of Gas Related Policy and Legislative framework
- Shortcomings of current Regulatory framework
- Lack of Locally Industry Standards
- Capacity build-up for the DOE and the natural gas industry



# Thank You !



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