



PETROLEUM POTENTIAL AND OPPORTUNITIES IN THE PHILIPPINES

Singapore, April 20, 2016

By:

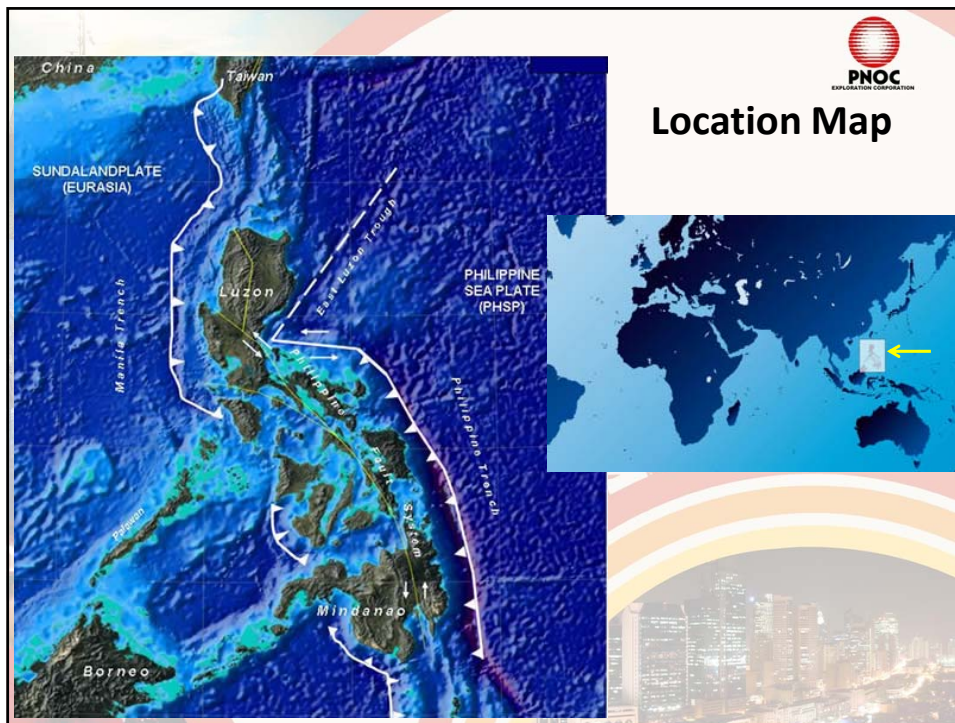
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Energizing
Change

Outline

- Introduction
- Philippine Energy Requirements
- Philippine Oil Scene & Gas Scene
- Strategies
- E&P Opportunities
- Natural Gas



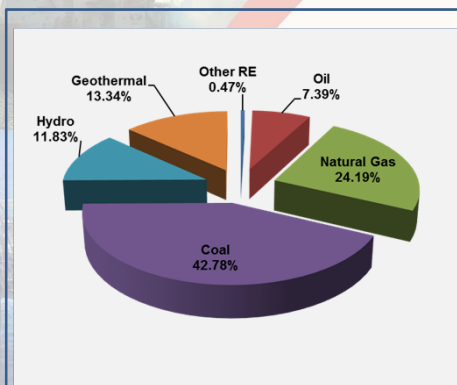


Philippines : At a Glance



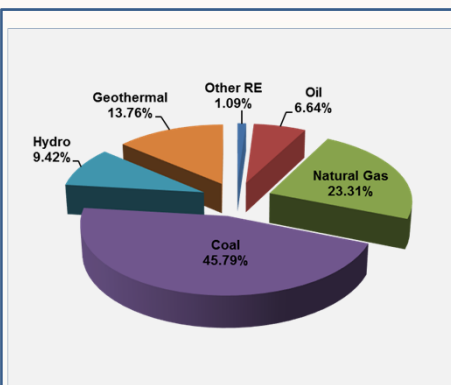
- Economic growth is at 7% - one of the highest in Asia
- Population is 100 million and growth at 2% per year – also one of the highest
- Need a lot of **energy** to sustain growth and supply the needs of a growing population
- Otherwise – expected shortfall by in the next few years

POWER GENERATION MIX



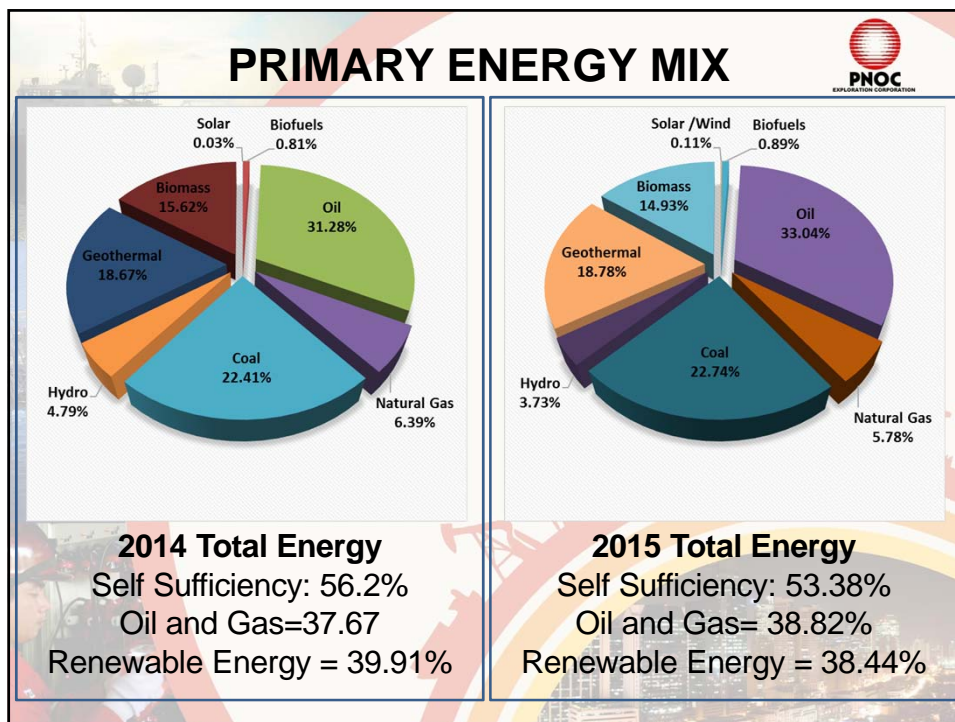
2014 Total Generation

Oil & Gas = 31.58%
Renewable Energy = 25.64%



2015 Total Generation

Oil & Gas = 29.95%
Renewable Energy = 24.27%



Philippine Oil Scene



- Consuming 325,000 BOPD
- Local production 7,000 BOPD from several small fields mostly from Galoc
- 2% from local production
- All production from NW Palawan
- Oil will be depleted soon

Platform (Matinloc Oil Field)



FPSO Galoc Field



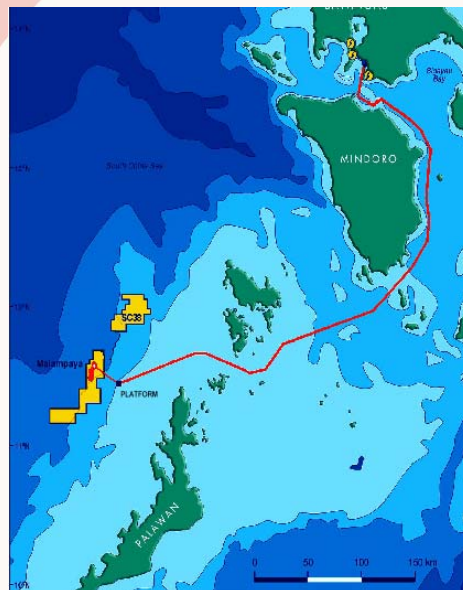
Photo courtesy of Rubicon

Philippine Gas Scene

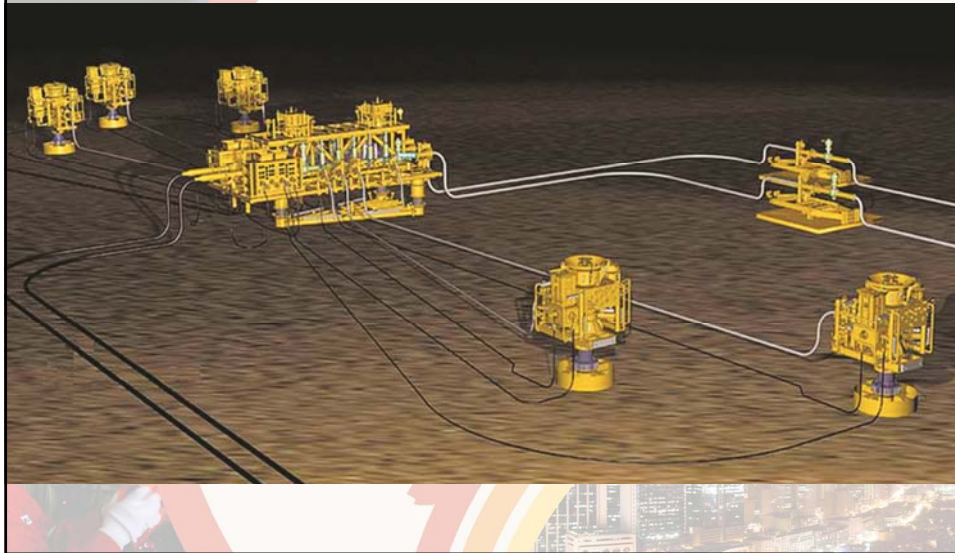


- Producing 450 MMSCFD gas and 12,000 barrels condensate produced from the Malampaya Gas Field
- Gas generates 2,700 MW of electricity supplying around 40% of power requirement of Luzon where 50% of Filipinos reside
- Only one gas field – Malampaya located in NW Palawan
- Ageing asset – to be depleted in about 10 years time

Philippines' Only Gas Field



Malampaya Subsea Facilities



Malampaya Platform



Photos courtesy of SPEX

Onshore Gas Plant



Consists of two redundant trains, each capable of handling 500 MMscfd of gas

Can accommodate gas with H_2S levels of up to 1,000 ppm

Power Plants

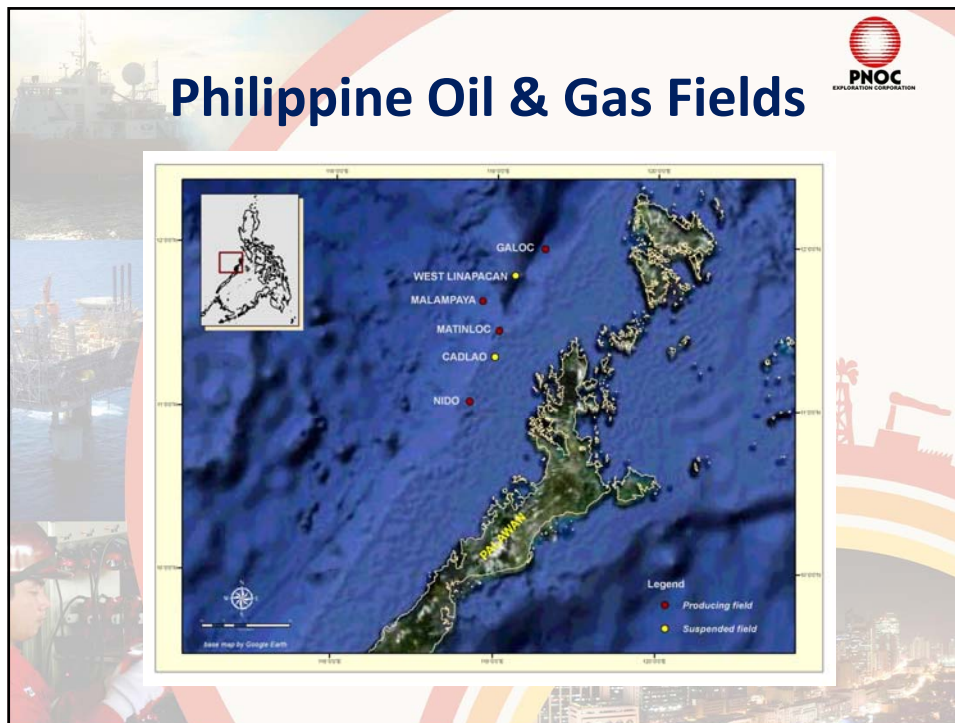


**1,000 MW Sta. Rita &
500 MW San Lorenzo**



1,200 MW Ilijan

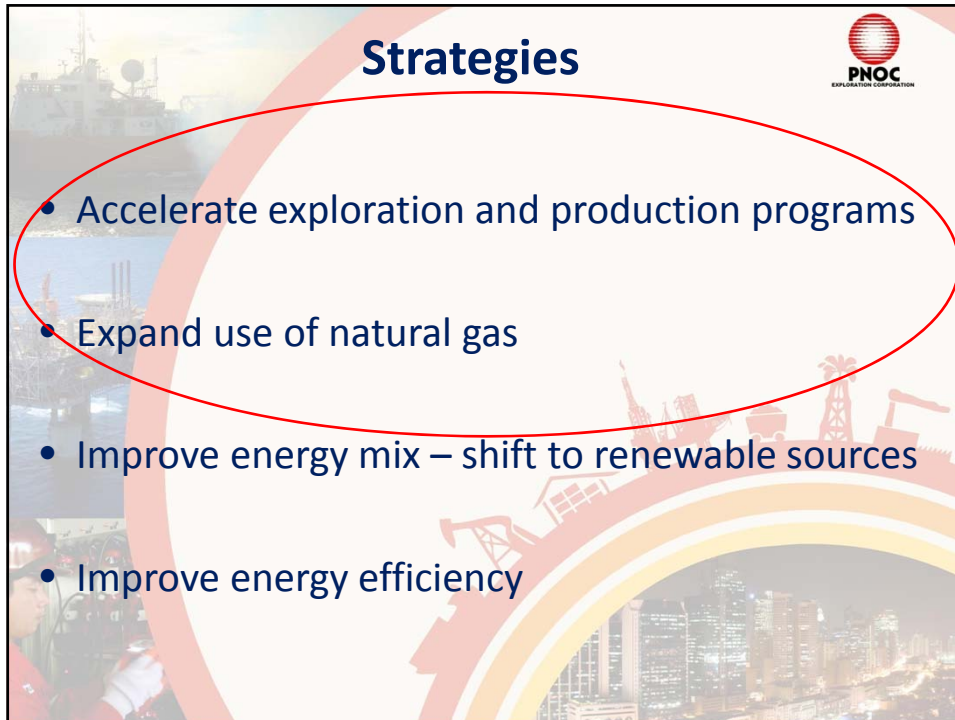
Photos courtesy of SPEX




The Realities:

- All oil production from NW Palawan – 2% of needs
- Gas production only from one field in NW Palawan
- Oil and gas will still be a major component of the energy mix - need a lot of these resources to sustain growth
- Coal “dirty”
- Both oil and gas will be gone in a few years


PNOC
EXPLORATION CORPORATION




Strategies



- Accelerate exploration and production programs
- Expand use of natural gas
- Improve energy mix – shift to renewable sources
- Improve energy efficiency

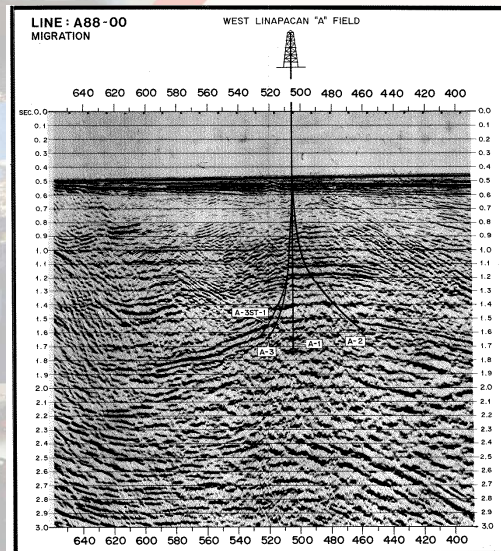


Accelerate E&P



- Make terms even more attractive – lessen permit requirements and legislate new laws
- Re-evaluate marginal Nido reefs – what was uneconomical before may not be today
- Re-enter suspended fields and old discoveries
- Drill untested folded Nido platform limestone and develop syn-rift sequence as possible target horizon
- Venture in deep to ultra deepwater NW Palawan
- Explore for small gas accumulations in highly populated onshore areas

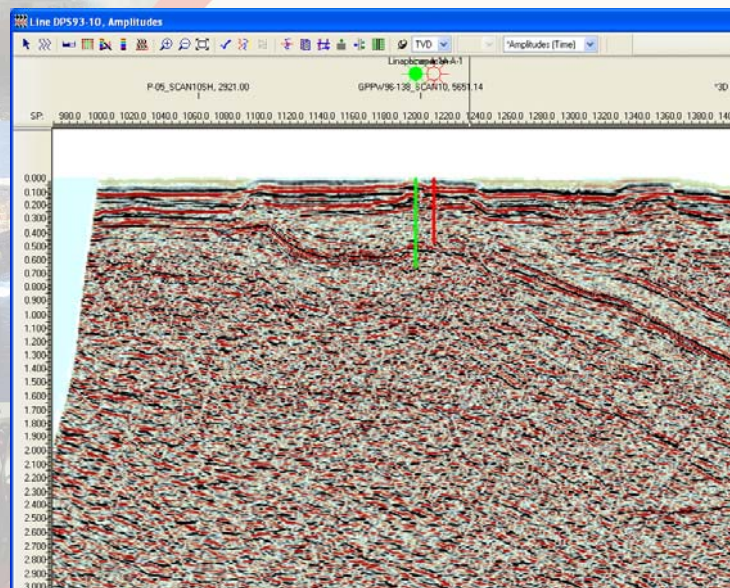
Re-enter Old Fields

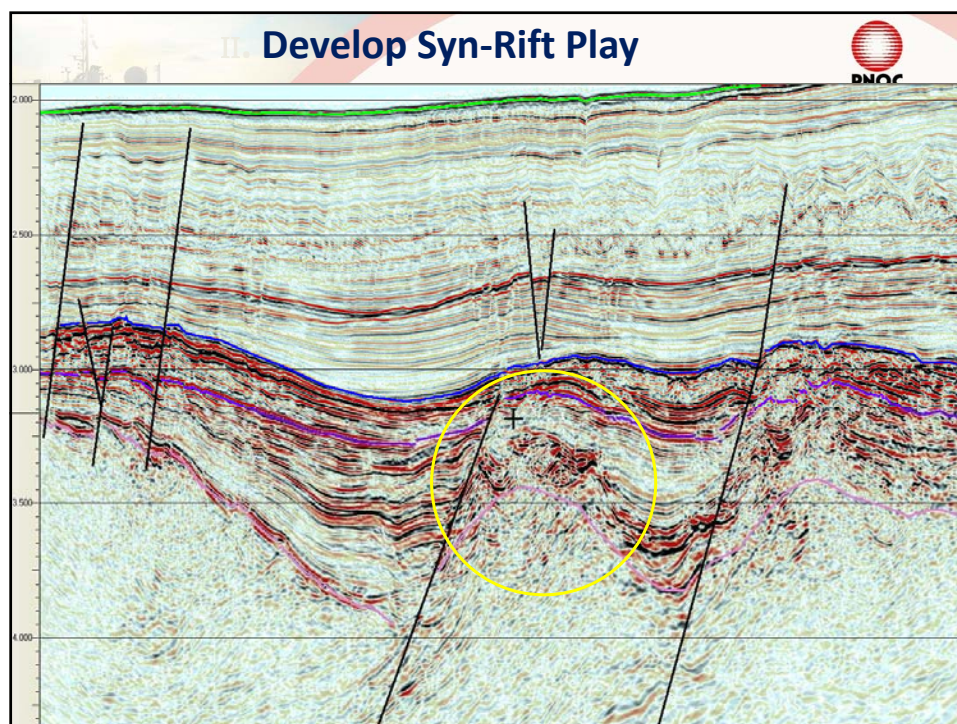
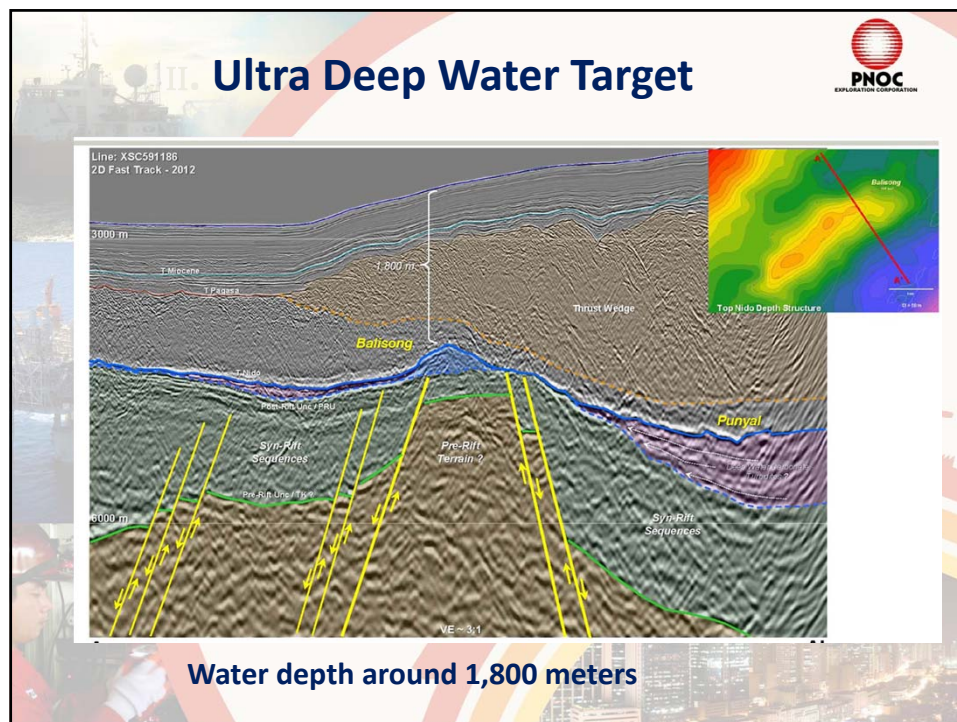


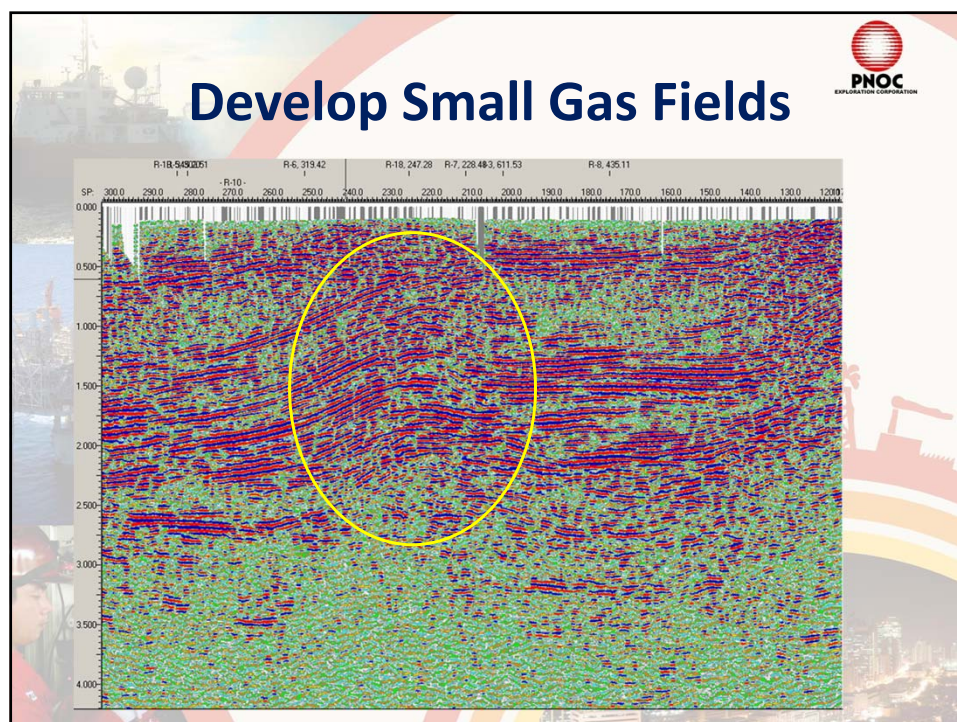
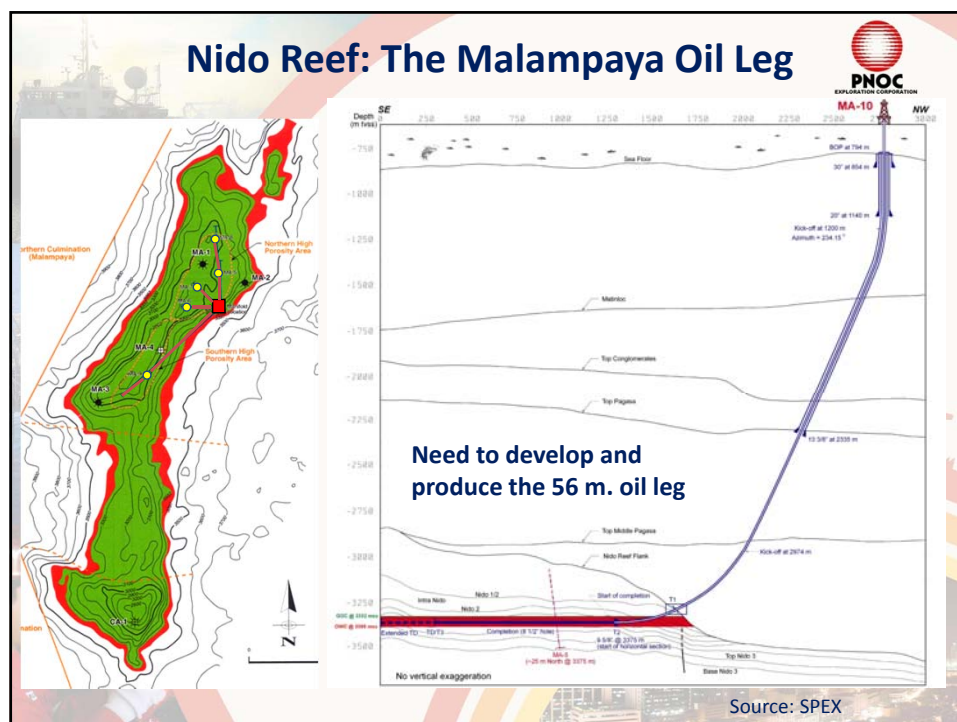
West Linapacan
Discovered in 1989
Produced from 1992-1996

Source: Alcorn Production Phils.

Re-evaluate Old Discoveries







Mangosteen 1 Discovery



E&P Playground



Offshore NW
Palawan still
the most
attractive
exploration
playground



Expand Natural Gas



- Acceptable – considered a “green fuel”
- Committed to reduce CO2 emissions by 70% in 2030
- Ideal for power and transport
- Import LNG - nearby sources within the region
- Ideal for archipelagic setting - one central floating facility to supply the needs of the islands

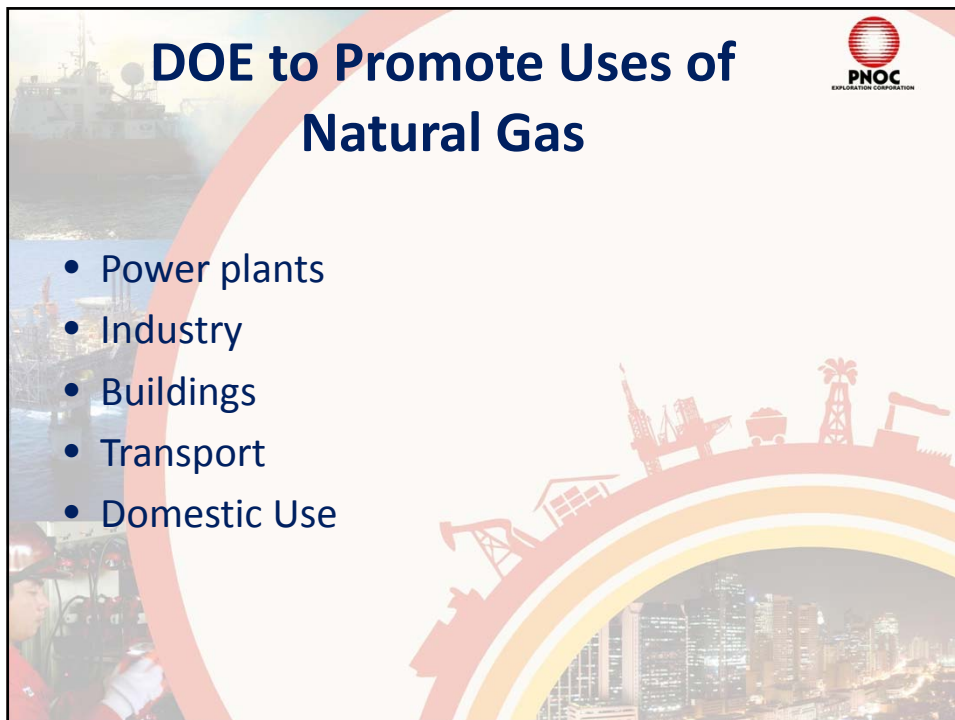
LNG will play an important role in securing the country's future energy needs

LNG Potential




Densely populated centers and an archipelagic setting makes it ideal for floating facilities





DOE to Promote Uses of Natural Gas



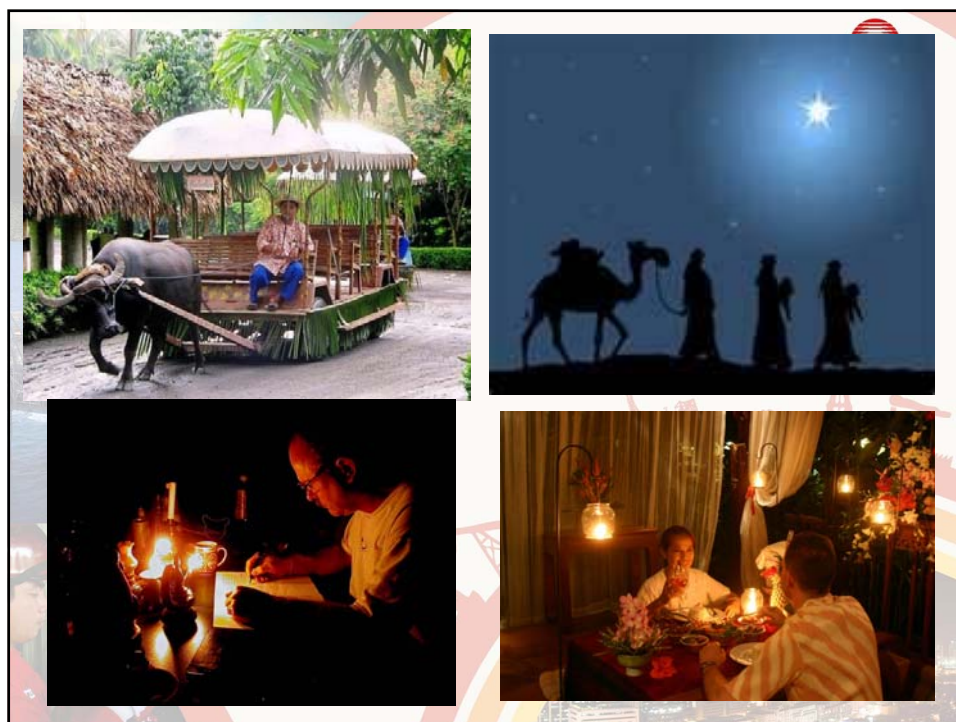
- Power plants
- Industry
- Buildings
- Transport
- Domestic Use


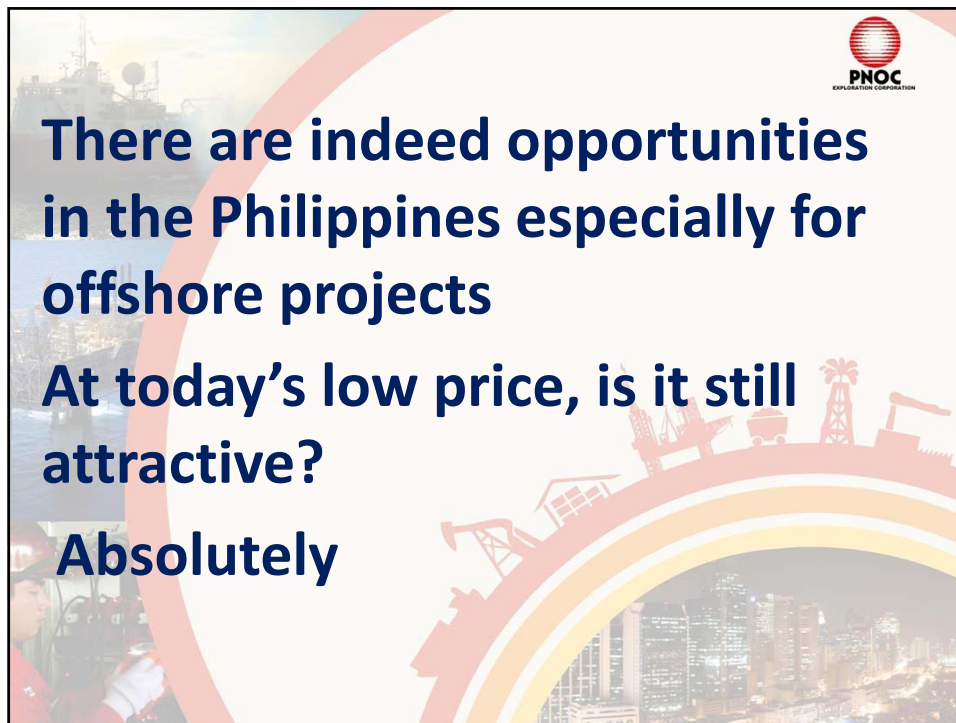


What is needed?



- Incentives for players
- LNG Infrastructures
- Transmission and distribution pipelines
- LNG Terminals





**There are indeed opportunities
in the Philippines especially for
offshore projects**

**At today's low price, is it still
attractive?**

Absolutely



angela santiago

**It's more fun in the
Philippines**