



# ENERGY TRANSITION

January 27, 2021

# 1. Overview



- 60 years of experience in petroleum industry in Vietnam
- PVN is assigned by the Government to carry out oil and gas exploration and production activities
  - ✓ 60.000 employees
  - ✓ Total revenue ~ 30 billion USD in 2021
  - ✓ Top 30 world's largest oil and gas reserves

## Before 2015

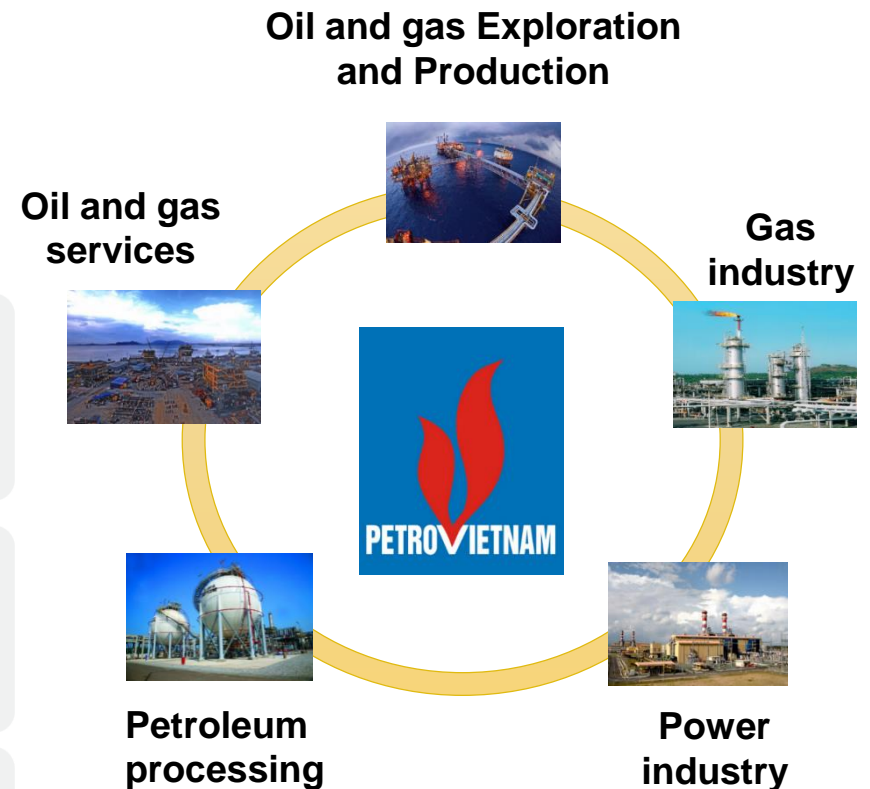
20 - 25% total state budget contribution  
18 - 25% GDP

## 2016-2020

9-11% total state budget contribution  
10 - 13% GDP

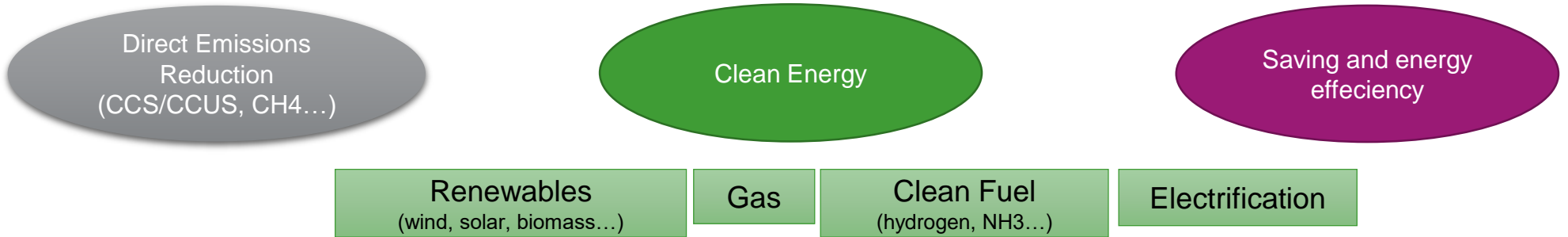
Supply 100% dry gas, 70% petroleum products, 60% LPG, 70 - 75% fertilizer, 8% of power generation in Vietnam

## Core businesses



# 2. Energy transition

Energy Transition ↔ Green house gas emissions reduction



## Resolution 55

National energy security

Fast and sustainable energy development associated with environment protection

**ENERGY TRANSITION IN VIETNAM**  
(reduction of GHG by 15% in 2030, 20% in 2040)

Priority of renewable energy, new energy, clean energy

(15-20% by 2030, 25-30% by 2045)

Exploitation and rational use fossil fuels

(Prioritize development of gas power, appropriate roadmap for coal power reduction)

Energy efficiency

(7% by 2030; 14% by 2045)

Energy market boosting towards competitiveness and transparency



November 2021, PM's ambitious statement at COP26:

"Vietnam will take stronger measures to achieve net-zero emissions by 2050"

### 3. PVN's strategy



## Transition to a leading energy group

#### Oil and gas Exploration Production

- Promotion of exploration and production
- Seek for other available energy sources.

#### Gas industry

- Stable gas supply, becoming main fuel for thermal power plants (gradually replacing coal fired power plants).
- Facilities upgrade to develop LNG, hydrogen and other clean fuel

#### Power industry

- Development of power plants with clean fuel (gas, hydrogen...).
- Development of renewable energy, prioritizing offshore wind.
- **2021-2030:** 7 – 8% of national installed capacity, RE 5 – 10%.
- **2031-2045:** 7 – 8% of national installed capacity, RE 10 – 20%.

#### Petroleum processing

- Deep processing and petrochemistry.
- Products quality diversification and improvement

#### Oil and gas services

- Capacity building to meet clean energy projects requirements.

# 4. New technology – Driven future vision

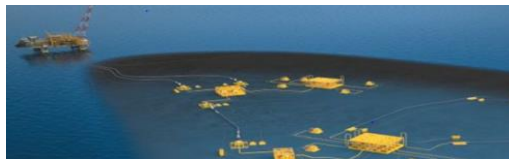
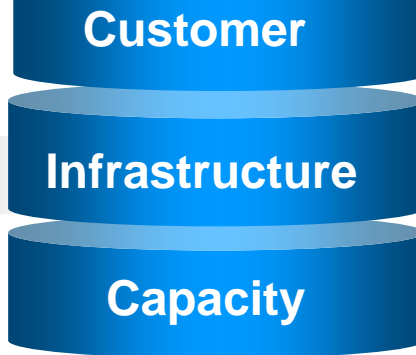
## 4.1 Nature Gas - LNG

Diverse customers: Power plants, fertilizers, industrial households, low pressure consumers...

Ownership of complete gas processing and distribution system in Vietnam



Ownership of complete system of oil and gas infrastructures.



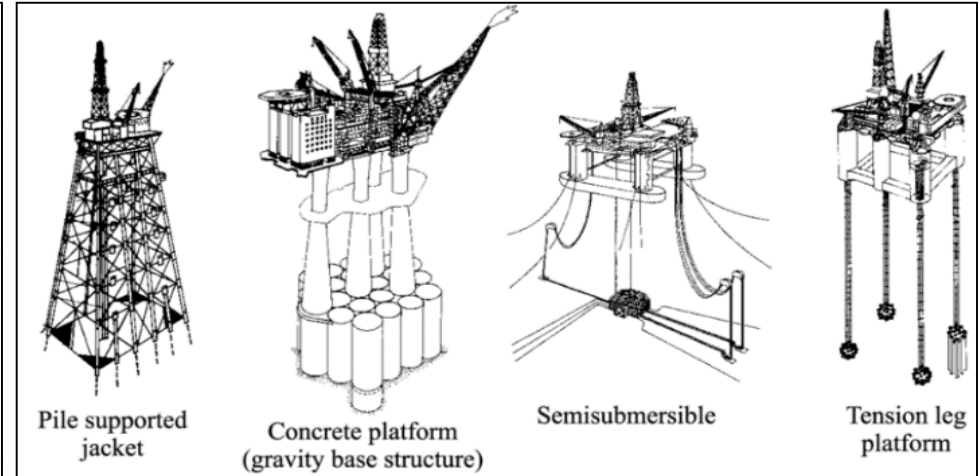
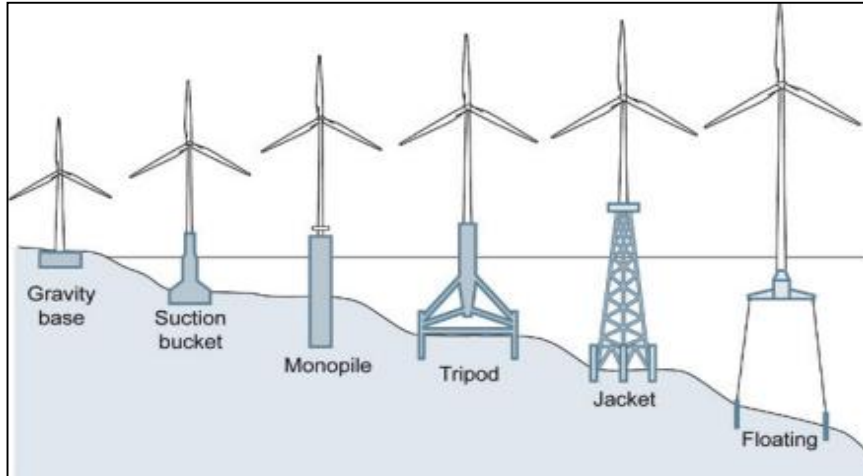
Major gas projects developers: Block B, CVX, LNG Thi Vai, LNG Son My...



**PVN plays a key role: Form & develop gas market; large-scale LNG import facilities development, gas supply for power generation nationwide.**

# 4. New technology – Driven future vision

## 4.2 Offshore Wind PVN's capacity in oil and gas projects



### OSW foundation

### Production facilities foundation

Offshore projects of national records: Tam Dao 03, 05 jack-ups (water depth 90-120 m), Sao Vang project (26.600 tons), Hai Thach project (25.000 tons)

Many rigs with total weights ranging from 2.000 to 10.000 tons

International projects: Qatar's largest oil rig in Gallaf (26.000 tons), Brunei's EPCC Maharaja Lela South project for Total E&P (2.000 tons), Taiwan's Hai Long project: offshore wind substations)

>100 large projects

# 4. New technology – Driven future vision

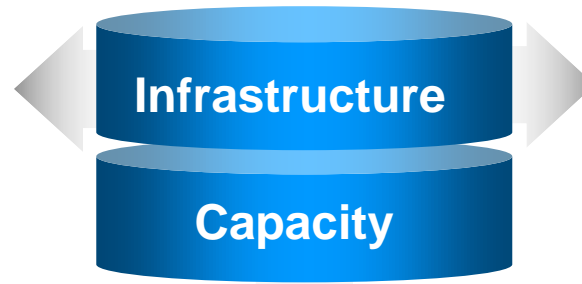
## 4.2 Offshore Wind

### PVN's capacity in offshore wind power projects

Services ships (nearly 100 units) of diverse capacities and types



Services ports nationwide



#### Survey

Seabed survey, geotechnical survey...)

#### EPC

- Design
- Procurement
- Onshore fabrication and manufacturing
- Offshore transportation and installation

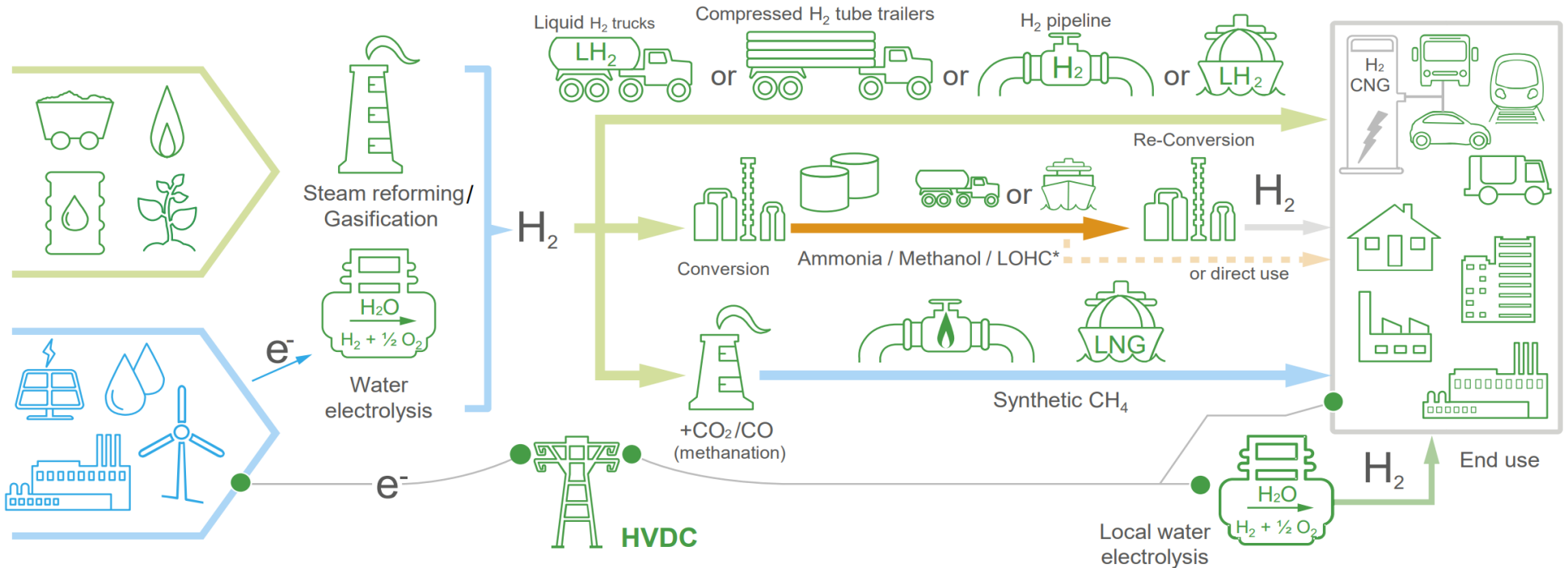
#### O&M

- Offshore oil and gas projects
- Gas power, coal power, hydropower, onshore wind

**PVN is the leading major in Vietnam in mechanical engineering, onshore fabrication and offshore transportation and installation**

# 4. New technology – Driven future vision

## 4.3 Hydrogen



- Grey hydrogen production in refinery BSR, petrochemical complex NSRP and fertilizer plants (PVFCCo, PVCFC)
- Existing natural gas facilities (transportation, storage, distribution) can be converted for hydrogen system with appropriate upgrade of economic viability
- Expected future demand for green hydrogen in petroleum processing and fertilizer facilities to produce synthetic fuels

**PVN has enormous advantage in creating a hydrogen value chain from production, storage, transportation to distribution**





***Thank you!***