



# **ENERGY POLICY & LNG SUPPLY AND DEMAND in TAIWAN**

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**CPC CORPORATION, TAIWAN**

# Outline

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# CPC Corporation, Taiwan:

## Leading energy company in Taiwan



- ◆ CPC, established in 1946, is an integrated oil & gas company.
- ◆ Ranking 337<sup>th</sup> in the world and 3<sup>rd</sup> in Taiwan on the Fortune 500 list.



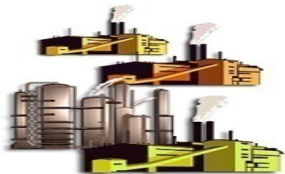
### Exploration & Production

- 21 fields in 7 countries



### Natural Gas

- 2 LNG re-gasification terminals



### Refinery & Petrochemicals

- 3 refineries (capacity: 720,000 barrels/d)
- 1 petrochemical plant (ethylene: 850,000 ton/y)
- Filling-Station (market share: 77%)
  - CPC-owned: 639
  - franchise: 1,382



### Fuels Marketing LPG Lubricants

# Taiwan's Energy Policy

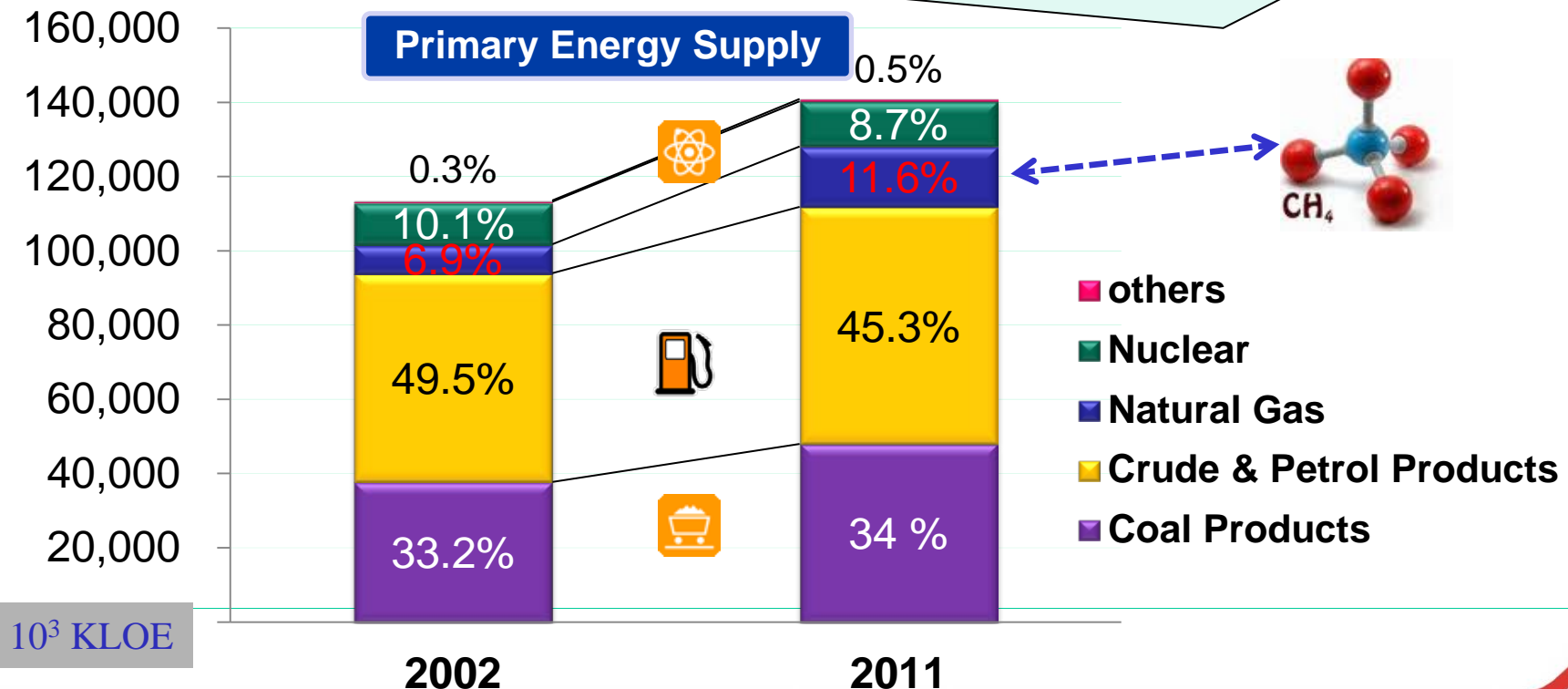


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# Energy Overview in Taiwan

- ◆ In last decade: Primary Energy grew 24%
  - Natural Gas increased 109%
- ◆ In 2011: Crude & Coal shared **79.3%** of Primary Energy Supply
  - Natural Gas 11.6% & Nuclear **8.7%** respectively
  - 99.33% of total energy supply imported



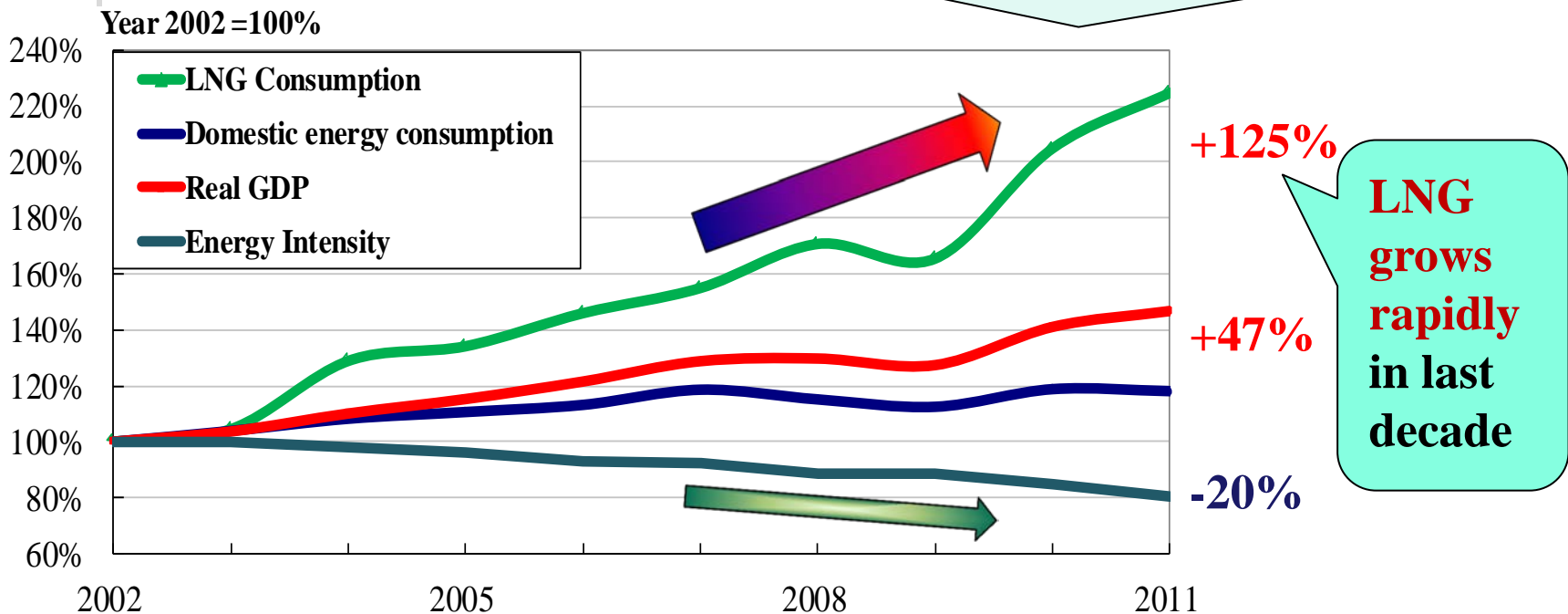


# Energy & GDP Growth Rate

In last decade(2002-2011):

- Energy Intensity: 20% decreased
- LNG Consumption: 125% increased
- Real GDP : 47% increased

2012 Estimated GDP growth rate is 1.66%



Source: Directorate General of Budget, Accounting and Statistics, ROC

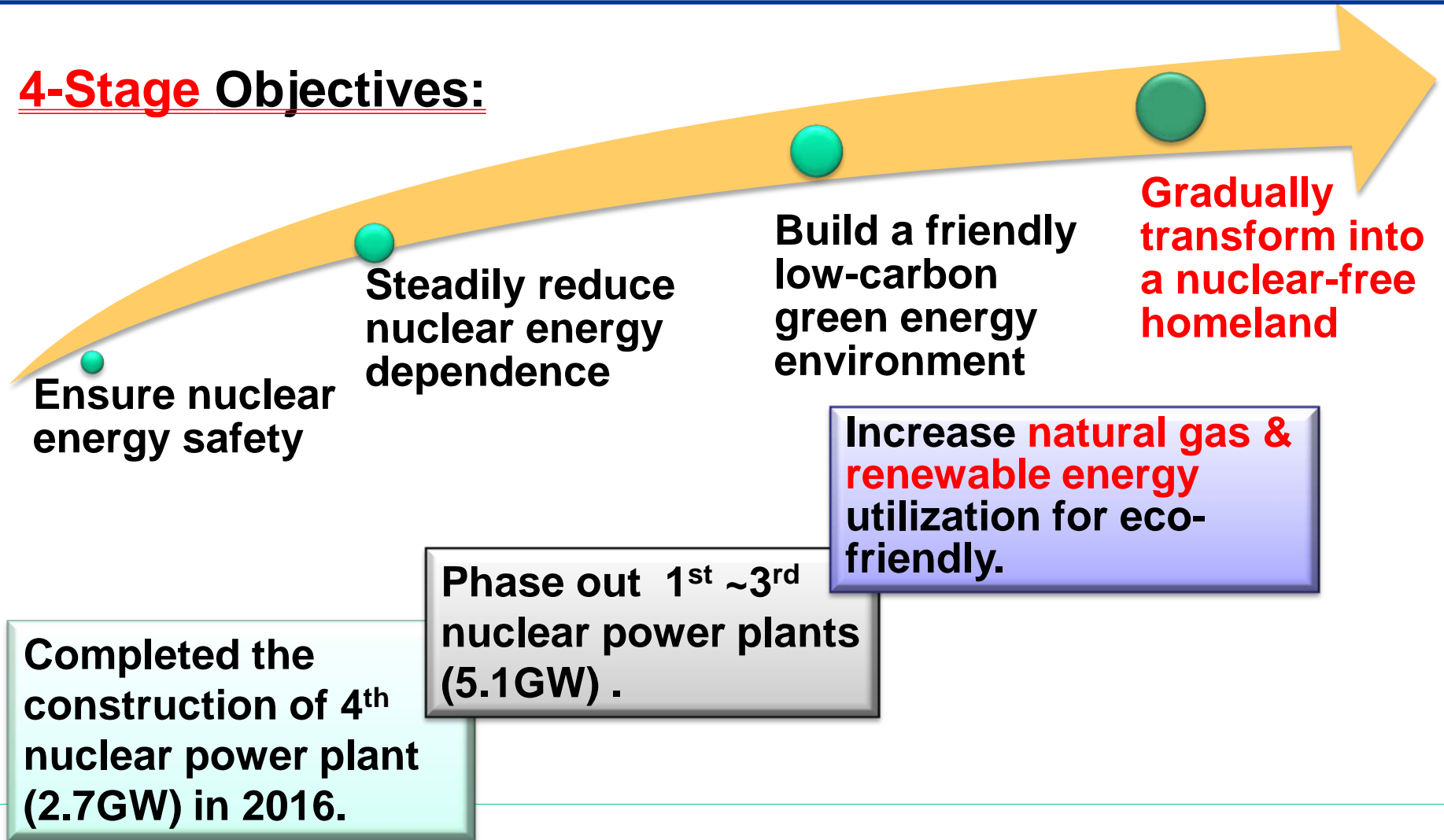
\* Energy intensity, defined as Domestic energy consumption divided by Real GDP.





# New Energy Policy in Taiwan

## 4-Stage Objectives:



# LNG Supply and Demand in Taiwan



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# LNG/NG Facilities

**CPC owns and operates 2 receiving terminals.**



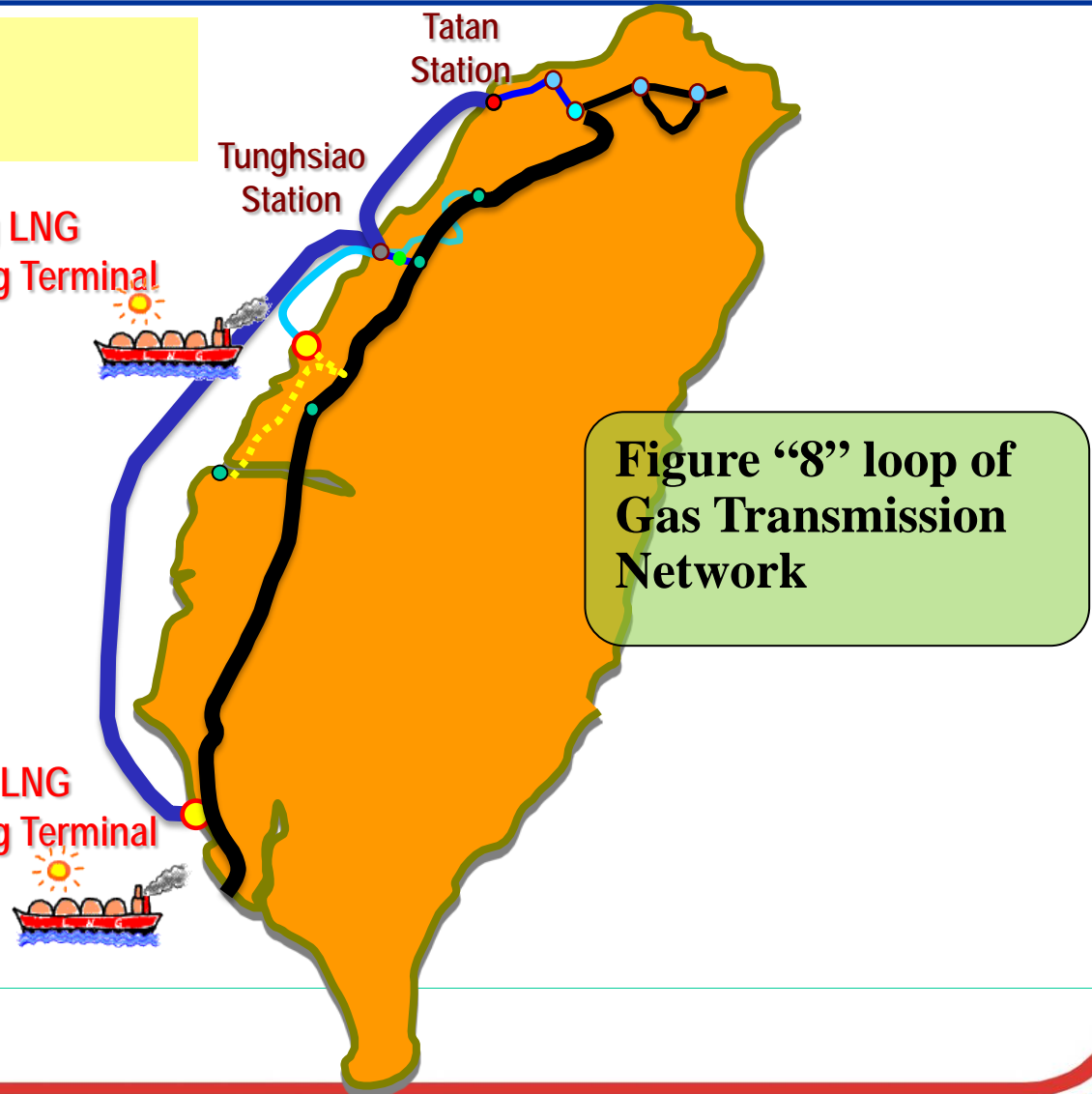
**Taichung LNG Receiving Terminal**

**Tank storage: 480,000 KL**  
**Capacity of unloading: 4.5 mtpa**



**Yung-An LNG Receiving Terminal**

**Tank storage: 690,000 KL**  
**Capacity of unloading: 9 mtpa**



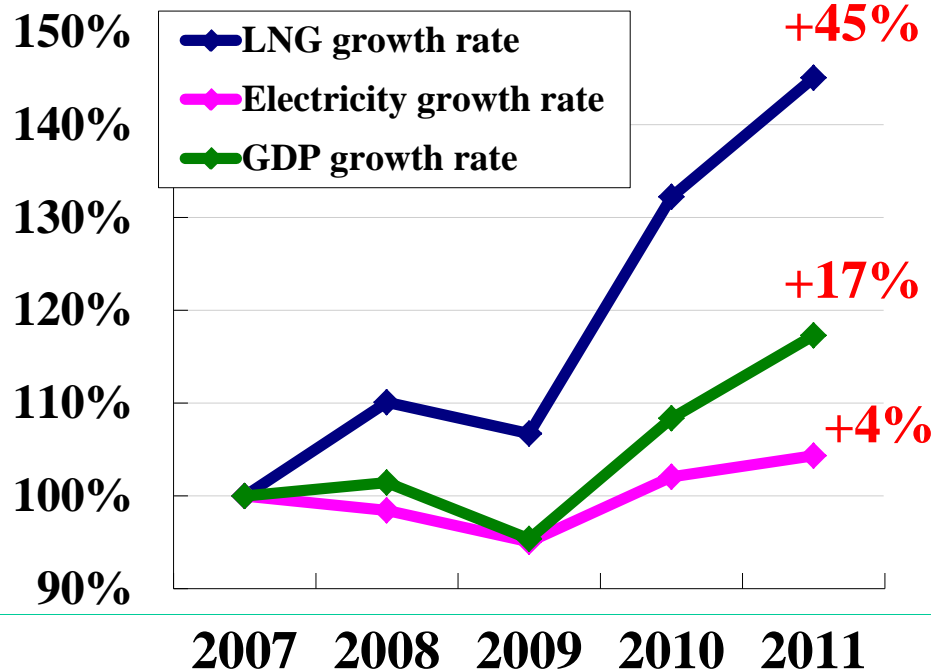


# LNG Supply:

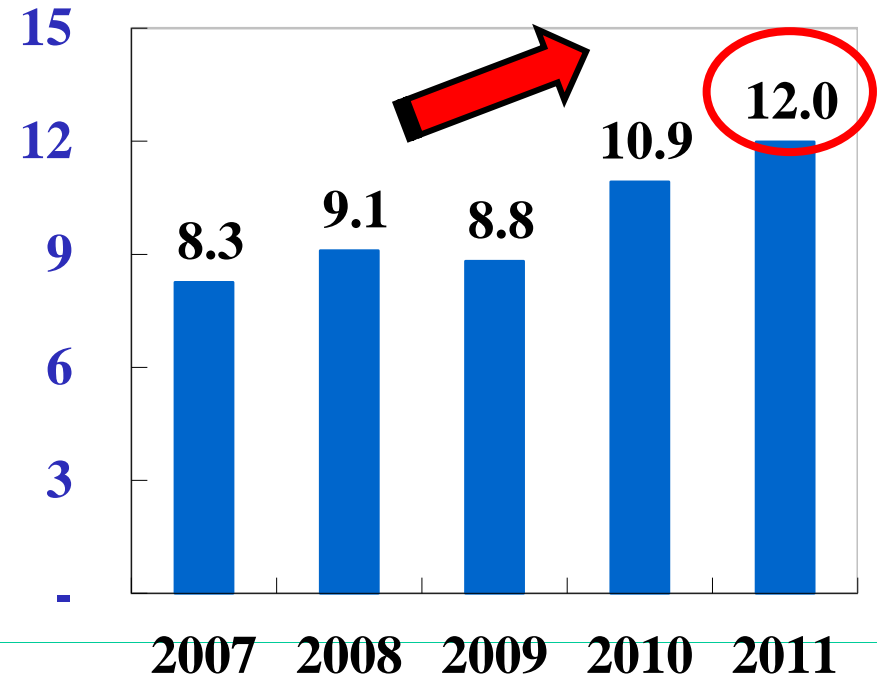
## Historical imported volume

- 98% Natural gas imported.
- 6<sup>th</sup> largest LNG importing country in the world.
- Rising demand of LNG results from the growth of electricity and industry.

Y2007=100%



Unit: MTPA



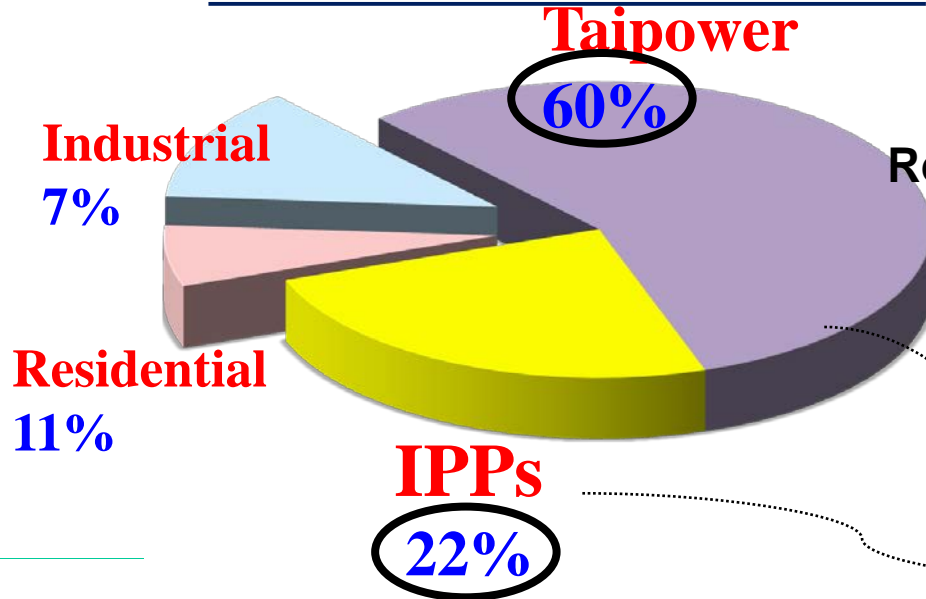


# LNG Demand:

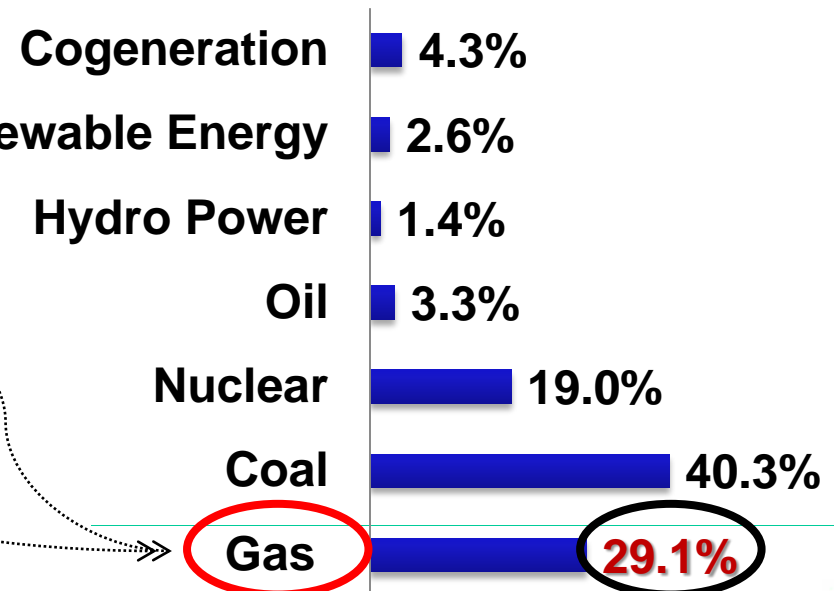
## Main customers & electricity mix

- ◆ **82 %** gas for power generation (Taipower & IPPs) in 2011
- ◆ **29 %** electricity from gas-fired generators (15GW)
- ◆ LNG as main substitute for nuclear when existing plants decommissioned

### Gas Customers Mix



### Electricity Mix





# LNG Procurement Strategy

## Security

- Purchase from reliable & stable sources at reasonable price
- Major volume from long-term contracts

## Diversity

- Allocation to worldwide supply sources
- Interest in new supply sources from USA, Canada and Australia

## Competitiveness

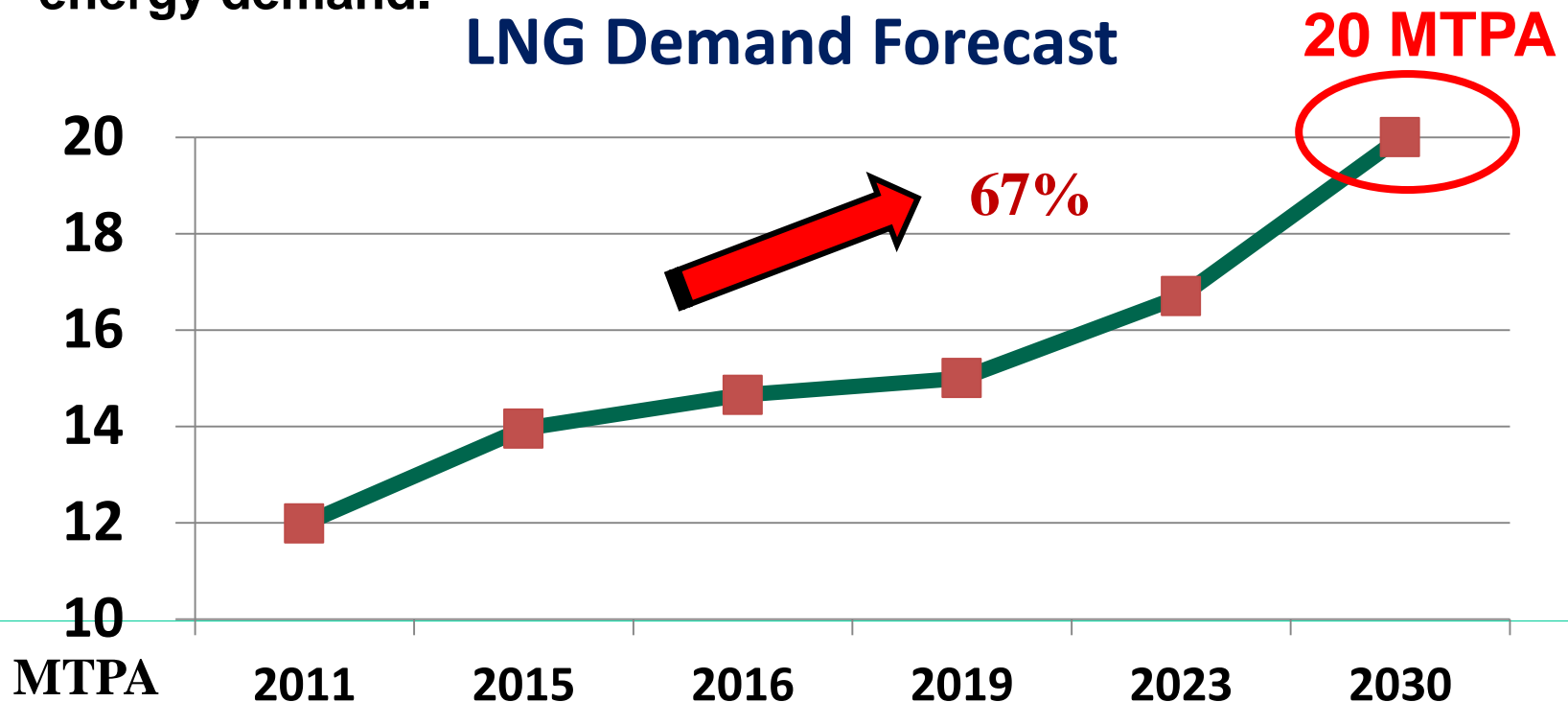
- Portfolio of pricing index, Oil-linked & US Gas-linked
- Participation in upstream



# LNG Demand on New Energy Policy

- To reach the goal of low-carbon green energy environment, Taiwan government has drawn an ambitious plan to increase LNG consumption.
- LNG demand may increase from 12 million ton in 2011 to **20 million ton in 2030** depending on economic situation and energy demand.

## LNG Demand Forecast





# Consumers Expectations

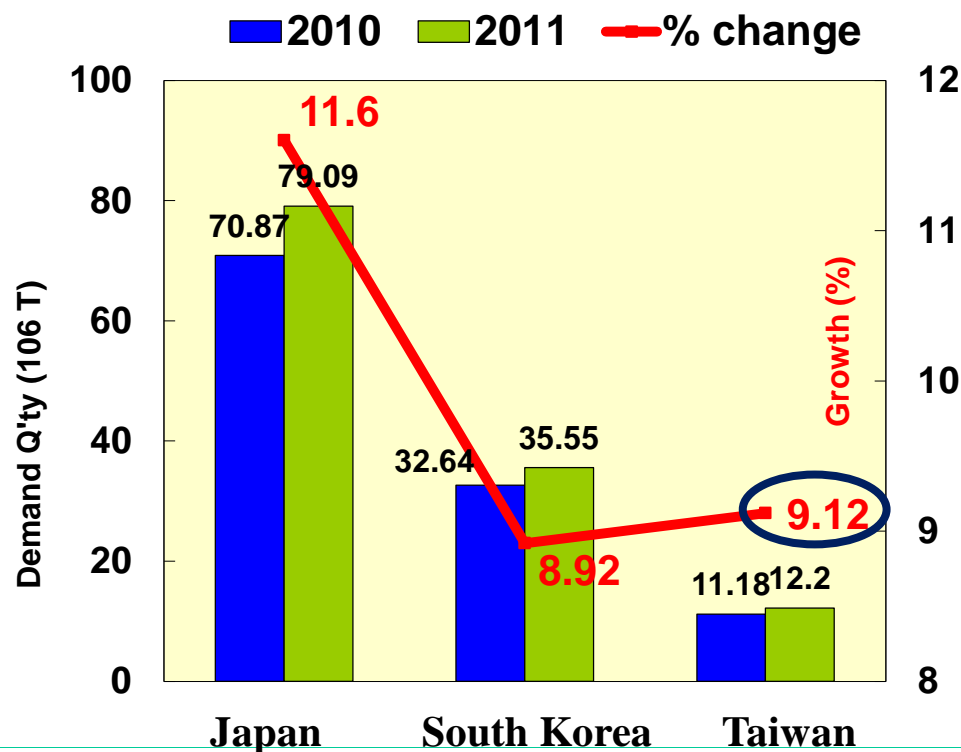
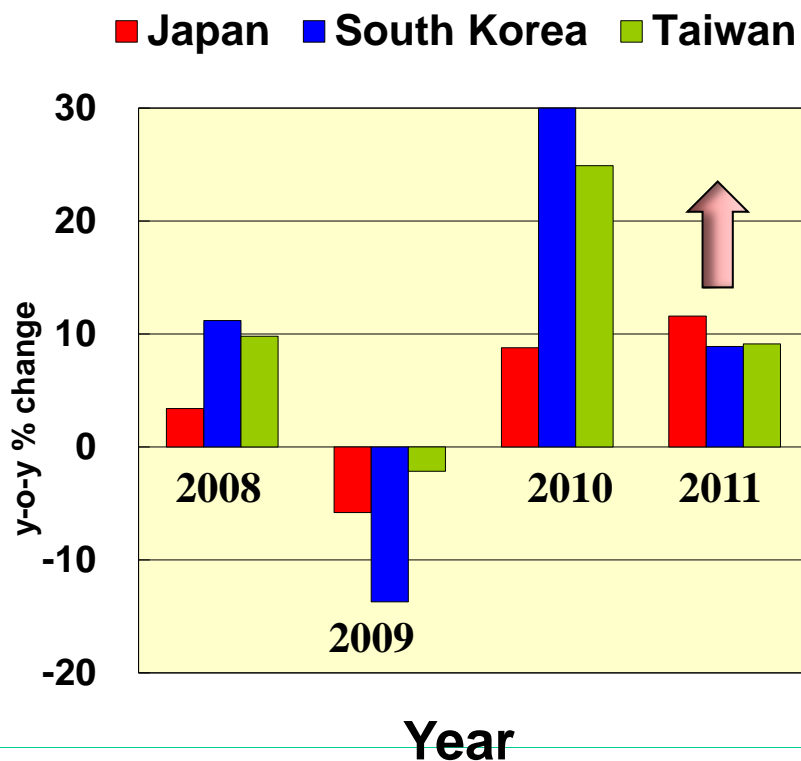


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# Main LNG Consumers

- ◆ Three major LNG importing countries, Japan, South Korea and Taiwan (JKT), account for **53%** global LNG trade in 2011.
- ◆ JKT increase LNG import by **9.9%** in 2011.



Source; The LNG Industry, 2011 & 2011, GIIGNL



# Consumers Expectations

## More Supply & More Flexibility = More Competition

### More Supply

To meet increasing global demand, it requires more investment on LNG supply chain and unconventional production technology.

Government policy to encourage LNG export and import, including application of LNG as fuel for marine tankers and land vehicles.

Fair treatment to all importing countries and eliminate free-trade obstacles.

### More Flexibility

Diverse gas price indexation, oil-linked and gas-linked, to allocate risk of pricing fluctuation.

More flexibility on destination to invigorate market.



# Conclusion

## **LNG demand steadily increases**

- **LNG/NG plays a critical role in the global energy market as the primary alternative for crude and nuclear.**
- **Taiwan's new energy policy promotes LNG utilization.**

## **More LNG supply is expected**

- **Qatar & Australia are major supply countries for its abundant natural source and stable environment.**
- **Asian market is looking forward to US and Canada LNG without trade restriction.**

## **Prepare for the coming Golden Age of Gas**

- **For above purpose, support for and investment in LNG supply chain are continually required from government and LNG industry.**
- **LNG market is drastically changing; all players need more communication and cooperation.**

**Thank You for Your Attention**

