

# LNG: Demand opportunities and supply challenges

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# The energy challenge

## 1. RISING DEMAND



- Population growth
- Economic growth
- More affluent society

## 2. SECURITY OF SUPPLY



- End of 'easy oil'
- Resource nationalism
- More unconventional

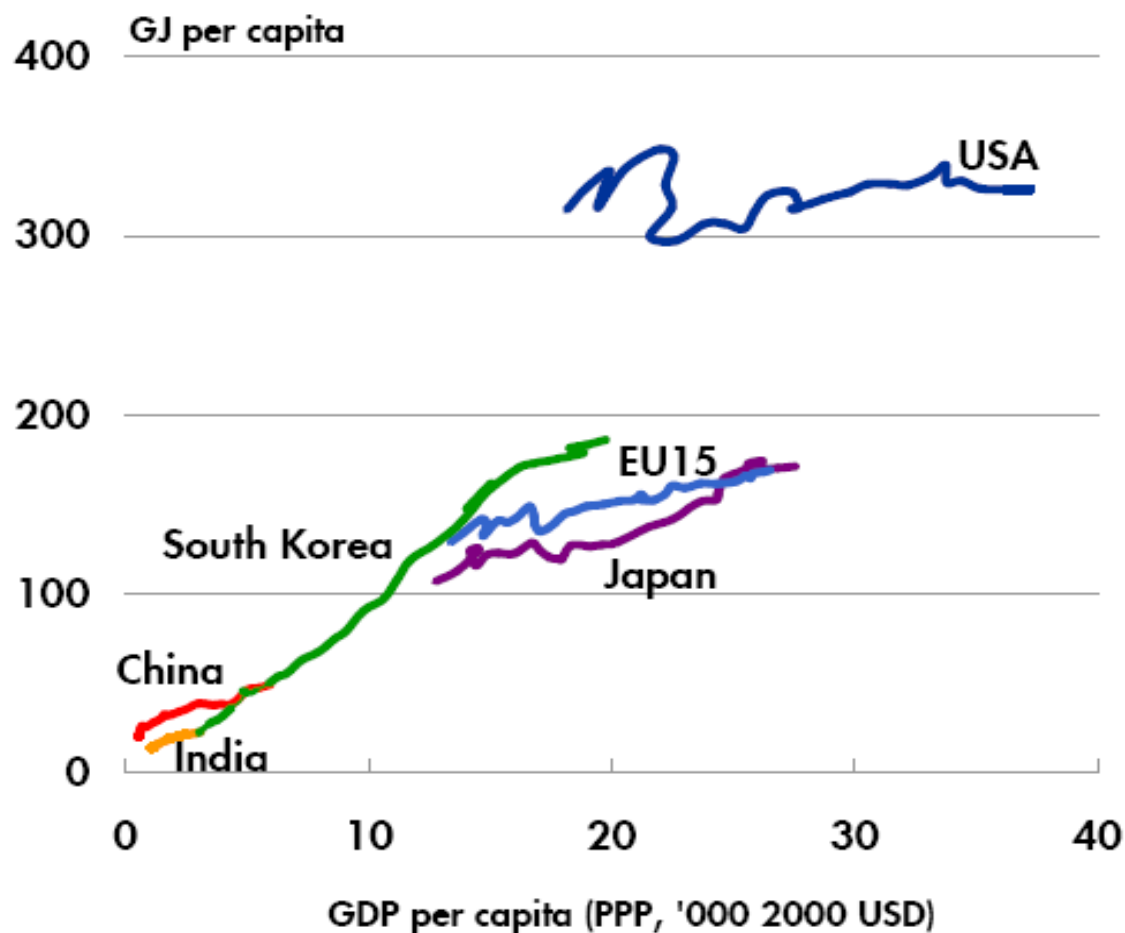
## 3. ENVIRONMENT & SOCIETY



- Hydrocarbons remain dominant
- CO2 consequences



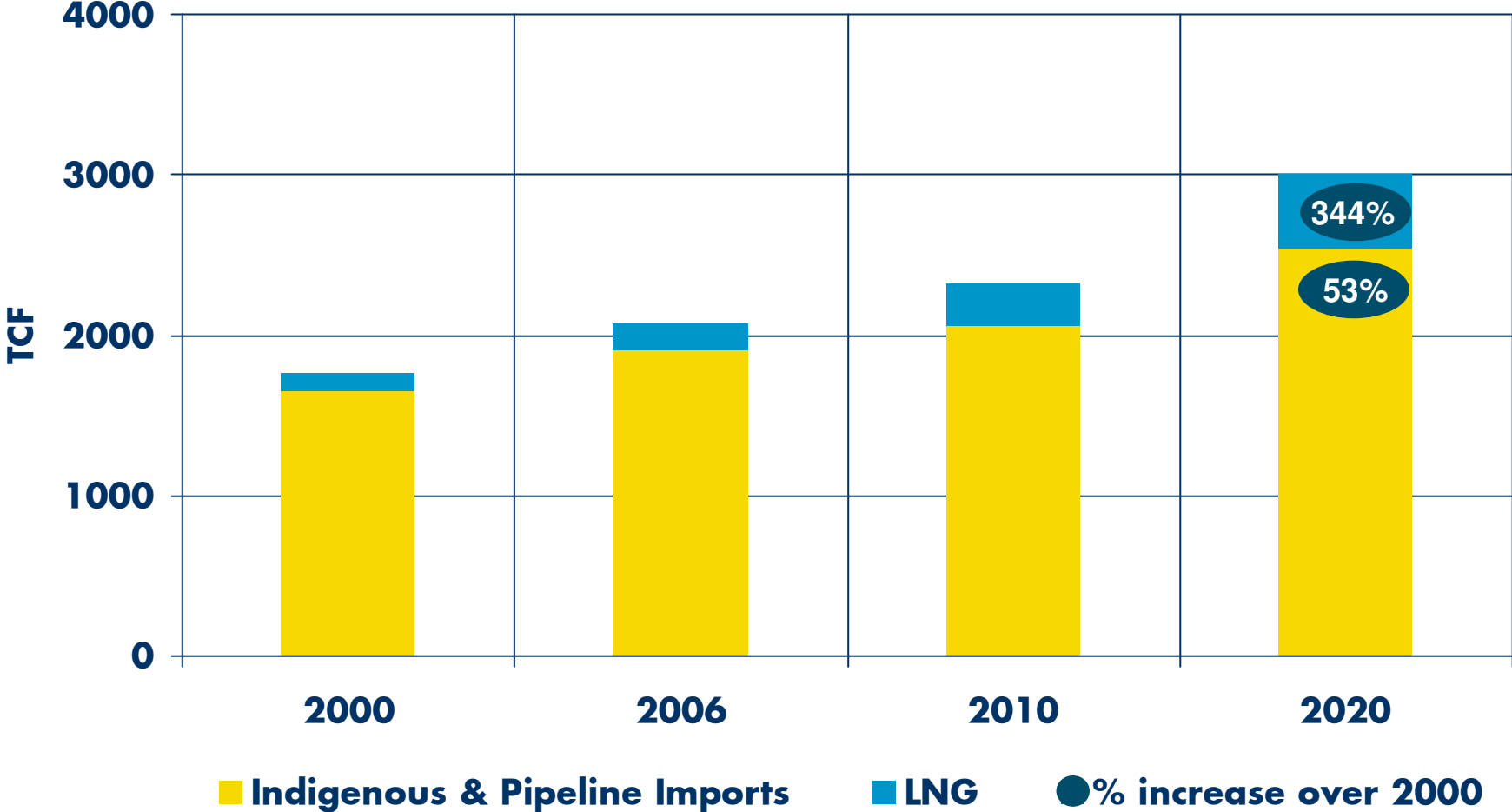
# Major economies are climbing the energy ladder



Source: Data to 2003, Oxford Economics, Shell International BV



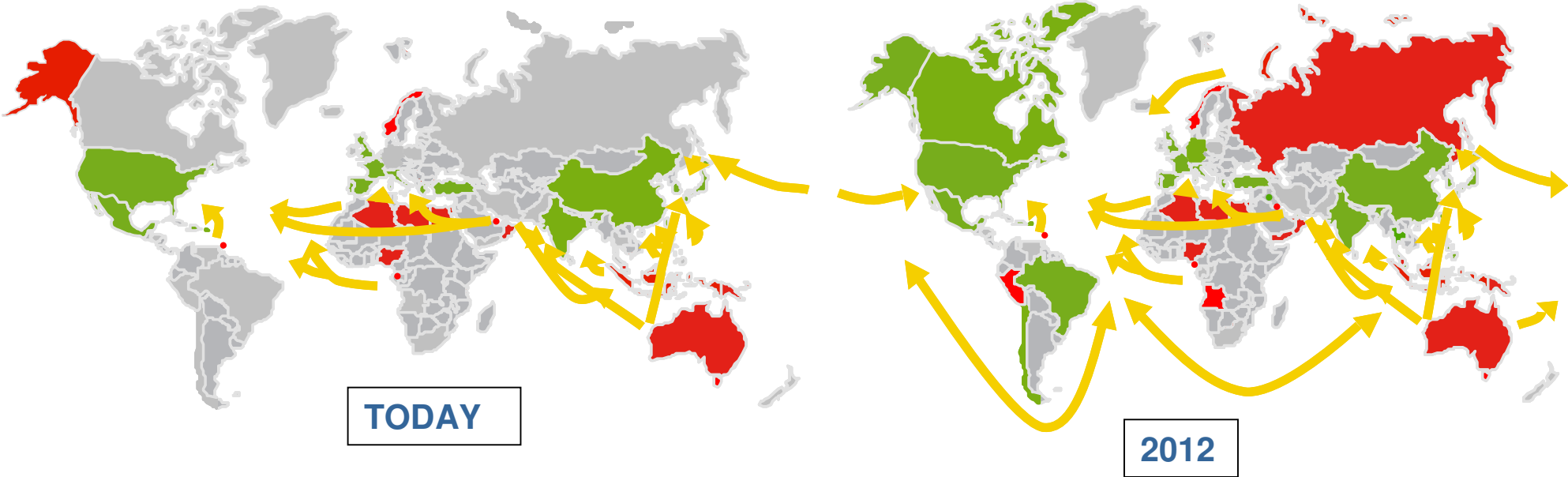
# The growing role of LNG



Sources: BP Statistical Review 2007, CERA 2006, EIA 2006



# Global market developments



# Countries	TODAY	2012	% increase
LNG importers	17	29	70.6%

■ LNG importers  
■ LNG exporters



# Supply challenges

## 1. DOMESTIC DEMAND



- Growing energy demand
- Natural gas exporting countries
- Competition with exports

## 2. HIGH EPC COSTS



- Skyrocketed costs
- Construction delays

## 3. PEOPLE AND SKILLS

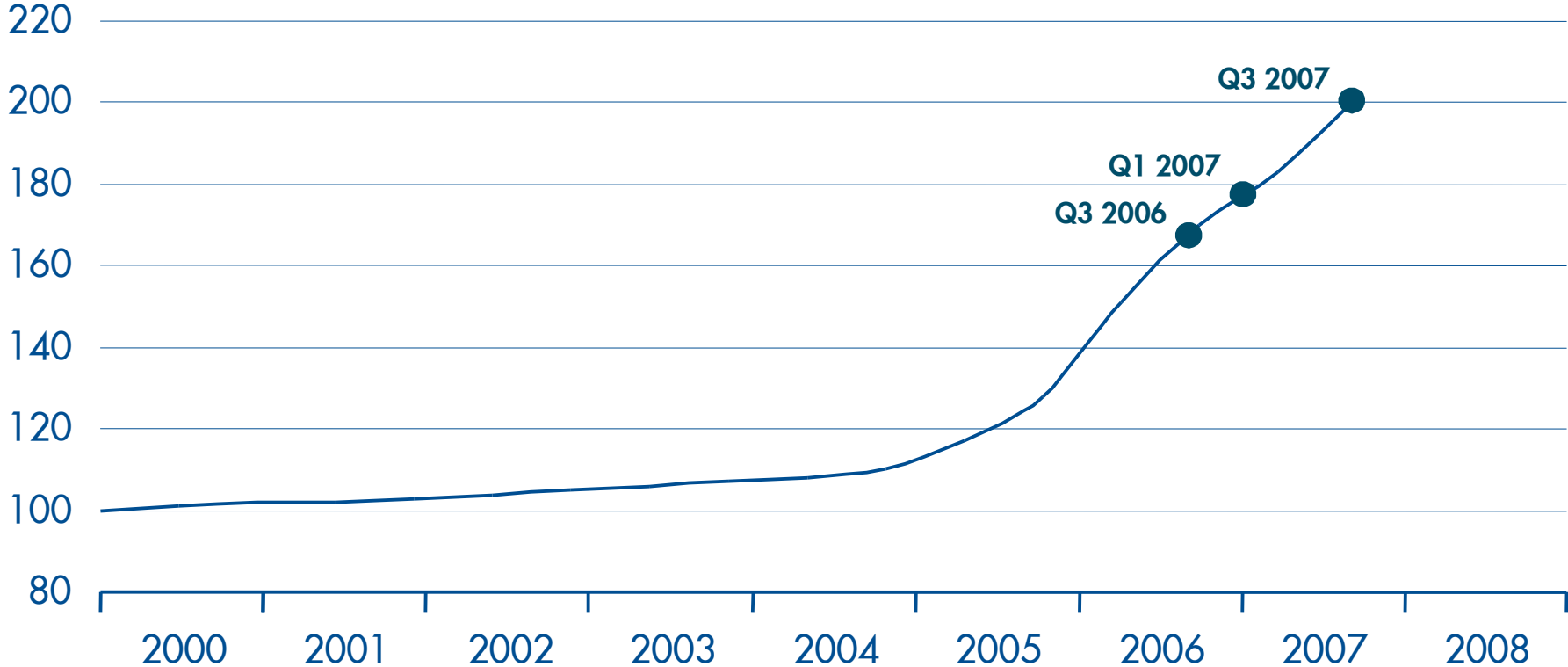


- More complex projects
- Large integrated projects
- Technical and project management challenges



# Energy sector inflation

**INDEX** (2000 = 100)



CERA Upstream Capital Cost Index (UCCI)





# People and skills to deliver complex projects

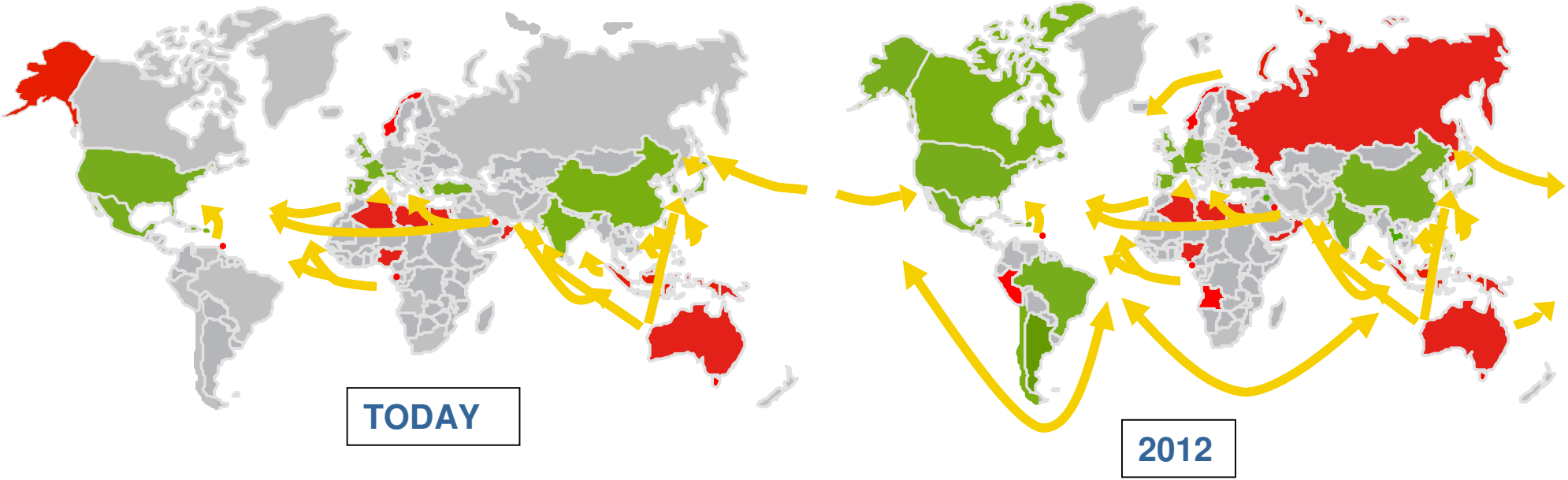


Construction of Pearl GTL at Ras Laffan Industrial City in Qatar





# Global market developments



# Countries	TODAY	2012	% change
LNG importers	17	29	70.5%
LNG exporters	15	18	20%

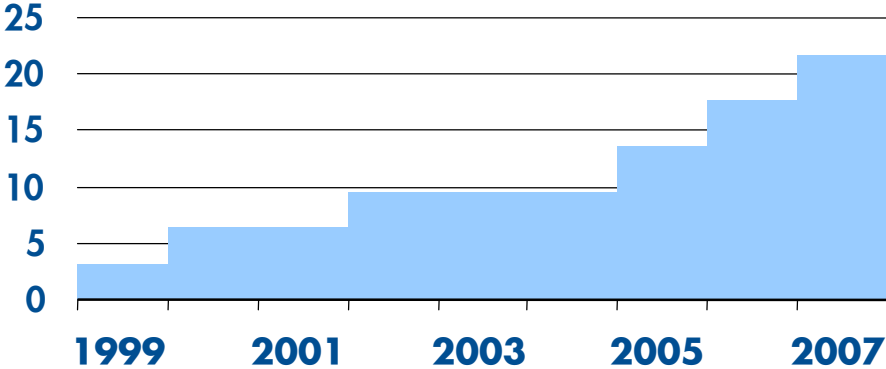
■ LNG importers  
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Shell analysis



# Nigeria LNG: Rapidly growing capacity

PLANT CAPACITY (YEAR END 100%, MTPA)





# Sakhalin II: World's largest integrated oil and gas project





# Floating LNG (FLNG)

- Unlocking stranded offshore gas accumulations
- Small environmental footprint
  - No pipeline or dredging
  - Limited onshore support base
- Cyclone tolerant
- Redeployable



# Shell's global LNG portfolio

Leading position ... and 5 new trains under construction

**NLNG T6**

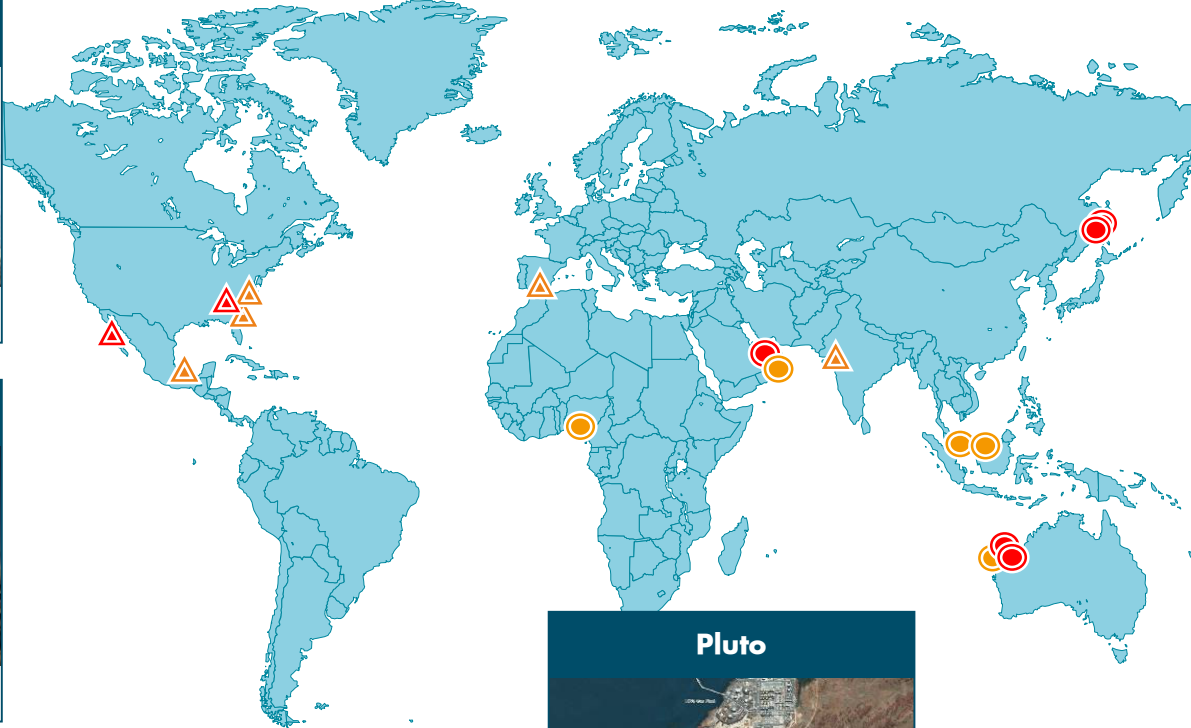


Start up 2008

**Qatargas 4**



Start up 2010+



**Sakhalin T1 & 2**



Start up 2008-09

**NWS T5**



Start up 2008

**Pluto**



Start up 2010+

	OPERATION	CONSTRUCTION
LNG SUPPLY:		
IMPORT CAPACITY:		



