



# New horizons for LNG



**Thierry Pilenko**

14<sup>th</sup> International Gas and Electricity Summit

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**Technip**

# Qatar Mega LNG Projects: a technological and project management success

## 6 x 7.8 Mt/y Trains

- ▶ **3 Trains in operation**
  - QatarGas 2 Trains 4 and 5
  - RasGas 3 Train 6
- ▶ **3 Trains to go**
  - RasGas 3 Train 7
  - QatarGas 3 & 4 Trains 6 and 7
- ▶ **Multi-Center Engineering by Technip's offices**
  - Paris
  - Abu Dhabi
  - Chennai (India)



# Qatar Mega LNG Projects: some exceptional numbers

## Unprecedented Challenges

- ▶ **Huge quantity of materials & equipment**
  - 133 000 tons of steel framework (13 times Eiffel tower)
  - 270 000 tons of machinery (950 Airbus A380 planes)
- ▶ **75 000 people at peak**
- ▶ **700 millions construction man-hours**
- ▶ **Sheer size required new construction methods**
- ▶ **Construction subcontractors low productivity**





## Qatar Mega LNG Projects: 3 Trains successfully delivered at client satisfaction

### ▶ Ching Thye Khoo, COO, Qatargas 2, at World Gas Conference 2009

- *“the first of the large LNG trains, Train 4, began producing LNG in March, 2009 and has already reached full capacity. The second train, Train 5, produced its 1st LNG in September and production ramp up is in progress.”* **The Peninsula -10/9/2009**

### ▶ Faisal AL-SUWAIDI, Chairman-CEO, Qatargas, at World Gas Conference 2009:

- *“I am confident that each of the mega trains could give us at least another 2 million tons (per annum)”* **Upstream -Thursday, 10/08/2009**

### ▶ Hamad Rashid Al Mohannadi, Managing Director - CEO, RasGas

- *“Train 6 is a clear demonstration of RasGas' confidence and ambition” “As the inauguration [of Train 6] approaches, it's time to recognise the skill, determination and sheer hard work of everyone involved in delivering, safely and within budget, a very successful project outcome.”* **Zawya- RasGas Press release-12/08/ 2009**

# Floating LNG– New opportunities for oil and gas producers

- ▶ Floating LNG becoming reality
- ▶ Open sea transfer of LNG solved (e.g. Technip ALLS)
- ▶ Industry experience with large FPSO's
- ▶ Processing on moving platforms is understood

## Opportunity Stand-alone gas reserves

- ▶ No immediate delivery infrastructure or local market
- ▶ Insufficient reserves to support onshore LNG
- ▶ Difficulty in landing gas onshore

## Opportunity Associated gas disposal

- ▶ Enable oil field developments
- ▶ Monetize gas rather than re-injection or flaring

# Floating LNG- An innovative solution

## Unique Combination of Skills and Technologies

- ▶ LNG process
- ▶ Large FPSOs
- ▶ Subsea infrastructures

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## Shell FLNG

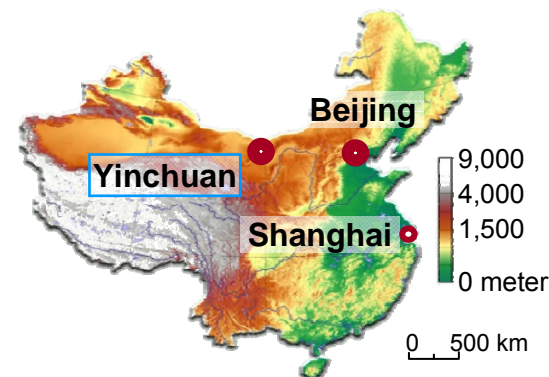
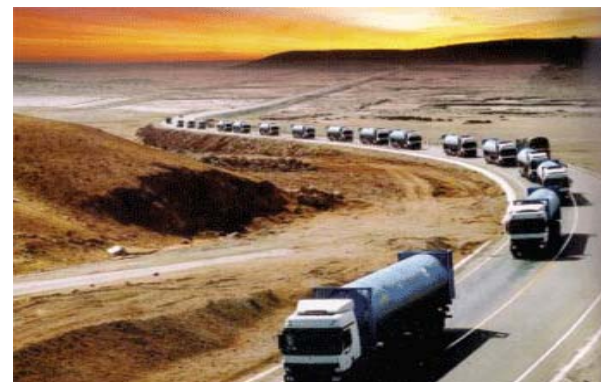


- ▶ **Contract awarded by Shell to consortium Technip & Samsung**
  - *FEED on a reimbursable basis*
  - *Master agreement for design, construction, installation of multiple FLNG, facilities including riser system interface, for up to 15 years*

# Mini LNG : an alternative for monetizing inland stranded gas

## A niche, but growing market

- ▶ **Capacity : 0.2 Mt/y to 0.5 Mt/y**
  - Liquefaction of gas from remote inland fields
- ▶ **Increasing activity in remote areas**
  - Stranded Gas
  - Communities which are isolated
  - Where installing a distribution grid is too costly
- ▶ **China will extend this scheme with numerous projects planned**
  - e.g. Ningxia Yinchuan Hanas ( 2 x 0.4Mt/y)



# Evolution toward a zero flaring future

## Worldwide Gas Flaring

- ▶ About 150 bcm per year of Flared Gas worldwide
- ▶ Flared Gas = consumption of Germany + Japan



## Possible alternative to associated gas flaring

- ▶ Offshore methanol
- ▶ Offshore GTL



# THANK YOU



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