

中国石油集团寰球工程公司认购澳大利亚LNG有限公司19.9%股权框架协议签字仪式  
Signing Ceremony of Strategic Private Placement of 19.9% Shares of LNG Limited Australia to CNPC HQCEC



**LIQUEFIED NATURAL GAS LIMITED**

**ASX: LNG**

**CNPC HQCEC: Company Making Transaction**

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# LNG Limited – An Overview “Post” CNPC HQCEC

**ASX Code** LNG

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**Shares on Issue** 266 million

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**Market Capitalisation** AUD 160 million (at AUD 0.60/share)

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**Cash Reserves** AUD 34 million (at 31 March 2011), no debt

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**Top 5 Shareholders** 45.88% ownership

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**Major Shareholders** CNPC HQCEC (19.90%)  
Copulos Group (10.18%)  
Dart Energy Limited (6.01%)  
P W Bridgwood (4.99%)  
F M Brand (4.80%)

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- KEY MESSAGES:**
- ▶ Strategic Partner with global expectations for LNG
  - ▶ Endorsement of business model and technology
  - ▶ CNPC HQCEC committed to deliver Gladstone LNG
  - ▶ Tight Capital Structure
  - ▶ Directors’ commitment to shareholder value
  - ▶ Strong and experienced board and executives

# Key Features of HQCEC & LNG Limited Term Sheet

- ▶ Legally binding subject to definitive agreements and satisfaction of conditions precedents
- ▶ Conditions precedent include HQCEC obtaining FIRB and Chinese Government approvals and LNG Limited obtaining shareholder approval
- ▶ 19.9% (post placement) share placement to HQCEC, raising ~AUD 25 million
- ▶ Funds allocated to development of LNG Limited's Gladstone LNG Project at Fisherman's Landing, Port of Gladstone, Queensland (***Gladstone LNG Project***)
- ▶ HQCEC to nominate a non-executive director and executive director (joint CEO) to the Board of LNG Limited
- ▶ HQCEC to submit a fully termed engineering, procurement, construction and commissioning proposal for the Gladstone LNG Project, based on LNG Limited's OSMR® LNG process technology
- ▶ HQCEC and CNPC to be provided preferential rights to use LNG Ltd's OSMR® technology
- ▶ HQCEC and CNPC to consider direct investment in and purchase of LNG from the Gladstone LNG Project

# Who is China National Petroleum Corporation (CNPC)?

- ▶ China's largest oil (54% share) and gas (82% share) producer and supplier
- ▶ Ranked 10 in revenue amongst 2010 Fortune Global 500 companies
- ▶ Owns 92% of PetroChina Company Limited, 2<sup>nd</sup> largest global company by market capitalisation (~\$250b) and most profitable company in Asia
- ▶ Oil and gas assets and interest in 29 countries and presence in almost 70 countries
- ▶ Businesses covering petroleum exploration & production, natural gas & pipelines, refining & marketing, oilfield services, engineering construction, equipment manufacturing, R&D, capital management, finance and insurance services.
- ▶ Top 5 global oil and gas company
- ▶ 1.6 million employees

# Who is HQCEC?

- ▶ Wholly owned by CNPC
- ▶ Technology focussed engineering, procurement, construction, consulting, R&D, manufacturing, project management group
- ▶ Delivered more than 2000 projects in over 50 years of operation
- ▶ Executed and delivered China's first LNG receiving terminal
- ▶ EPC contractor for Jiangsu LNG receiving terminal near Shanghai
- ▶ EPC contractor for Dalian LNG receiving terminal using own technology
- ▶ Likely EPC contractor for Tangshan LNG receiving terminal near Beijing
- ▶ EPC contractor for 500,000 tonne per annum Ansai LNG plant in China using own technology
- ▶ Over 9,500 employees

## Shared Global Vision

- ▶ LNG Limited to become a global LNG developer and owner
- ▶ HQCEC to become the global LNG EPC contractor of first choice
- ▶ LNG Limited's OSMR<sup>®</sup> technology to become the global LNG process technology of first choice
- ▶ LNG Limited's Gladstone LNG Project to showcase CNPC, HQCEC and LNG Limited capability

## Immediate Objectives

- ▶ Secure gas supply and develop LNG Limited's Gladstone LNG Project
- ▶ Develop and market LNG Limited's OSMR<sup>®</sup> technology
- ▶ Progress evaluation of other LNG project opportunities

# Business Model...What Attracted CNPC & HQCEC?

**OSMR<sup>®</sup> liquefaction technology is central to LNG Limited's strategic focus in developing LNG projects**

## ***Technical highlights of LNG Limited Approach***

## ***Benefits for LNG Project Development***

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Simple and efficient process  
Using proven liquefaction technology  
Low equipment count

Higher efficiency and less emissions by 20-40%  
Lower project cost by 30-50%  
Higher availability  
Easier installation, operations & maintenance  
Fast shut down and start up  
Faster construction schedule

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Smaller land area requirement  
Smaller risk contours

Increases ability to strategically locate LNG projects  
Potential to site closer to gas supply  
Potential to site closer to existing infrastructure

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Use of proven membrane tank technology

Lower construction cost of 20-50%  
Faster construction by around 10 months

## **Gladstone LNG Project to Prove the Business Model**



**OSMR<sup>®</sup> Process**

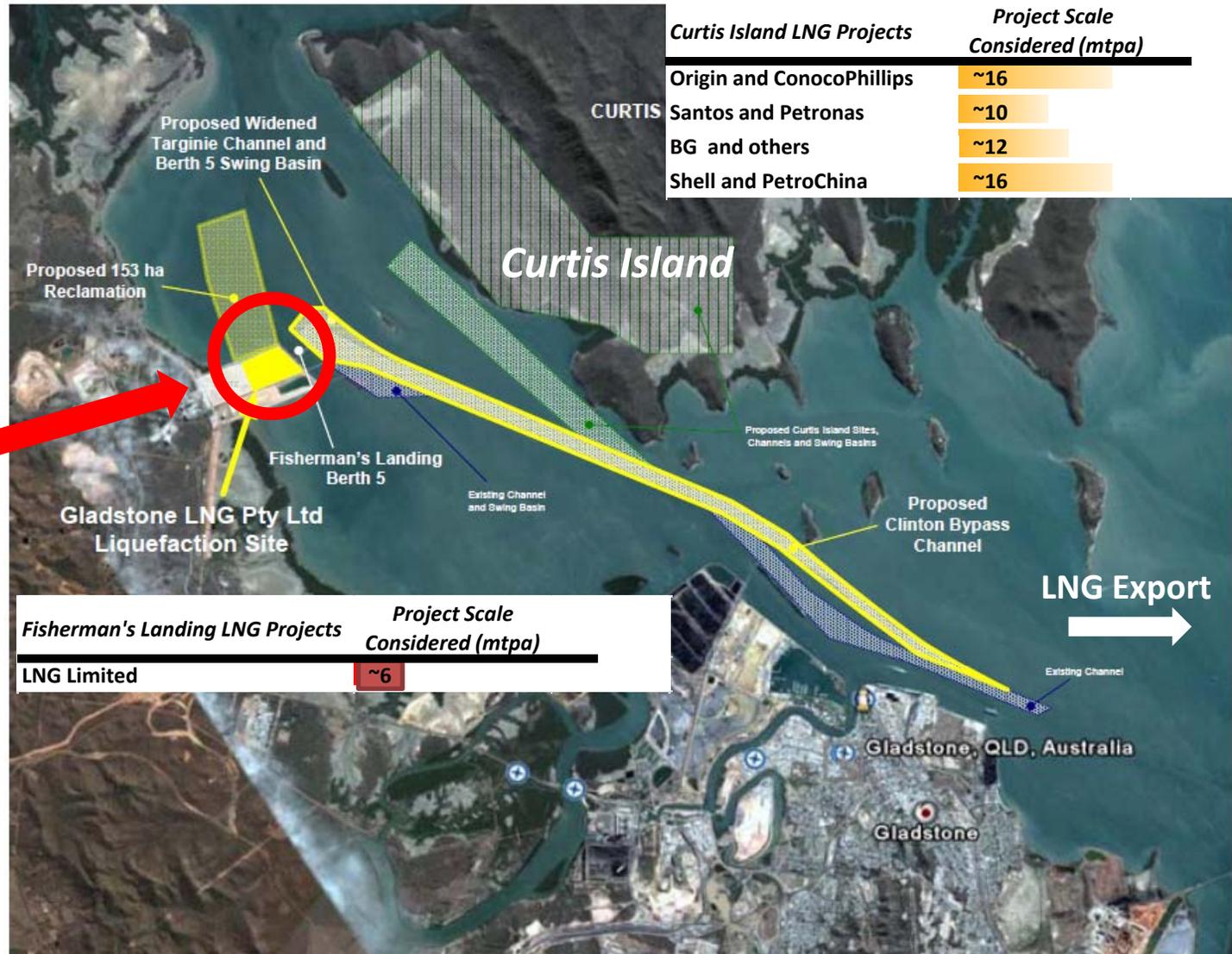
***Developed and owned by LNG Limited***

# Gladstone LNG Project “Fisherman’s Landing”



Proposed Design & Layout

# Gladstone LNG Project Location



**GLADSTONE LNG**  
*Fisherman's Landing*

# What do we have in Gladstone LNG

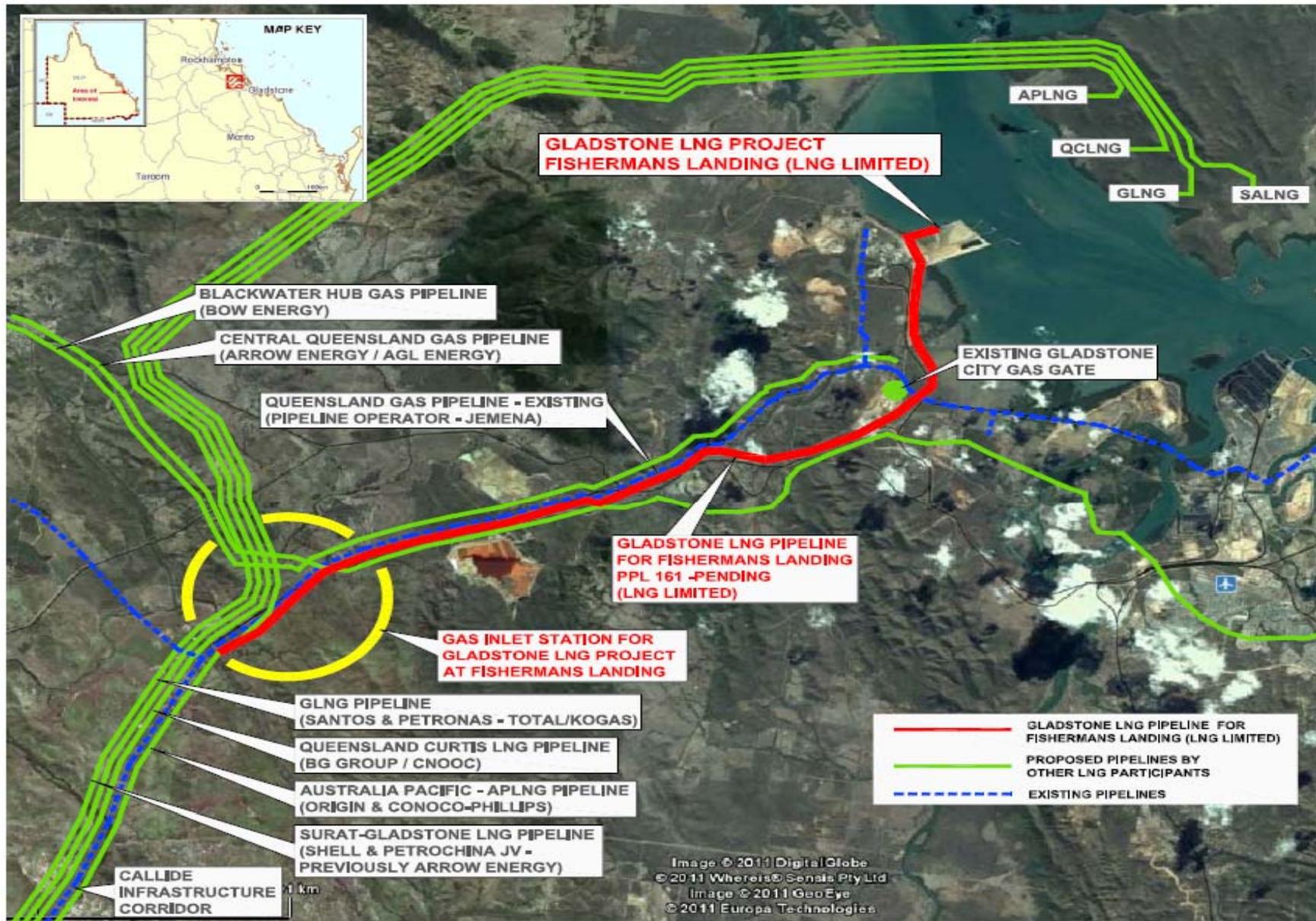
- ▶ Site Agreement for Lease executed
- ▶ Superior mainland site with access to existing infrastructure
- ▶ Site area can potentially accommodate 4 LNG trains at guaranteed 6 mtpa
- ▶ Environment approval (2x1.5mtpa LNG trains: OSMR<sup>®</sup> and membrane tank)
- ▶ Stage 1 dredging and disposal approval received
- ▶ FEED completed by LNGL/SKEC/LOR and detail design commenced
- ▶ Fixed price EPC proposal submitted (low cost)
- ▶ Access to OSMR<sup>®</sup> and membrane tank technology
- ▶ Most efficient LNG process by 30% (~6.5% of feedgas used for fuel)
- ▶ Lowest capital cost LNG project in Gladstone (~US\$300/tpa for 2 LNG trains)
- ▶ Fastest project schedule of ~30 months (usually 40+ months)
- ▶ Construction started (\$50m spent; 5 months of EPC program completed)
- ▶ Potential LNG end buyer (with terminals) and financing capabilities
- ▶ Gas supply plan
- ▶ Gas spur pipeline approval application lodged (refer to slide 12)

# What does Gladstone LNG finally need?... Gas Supply

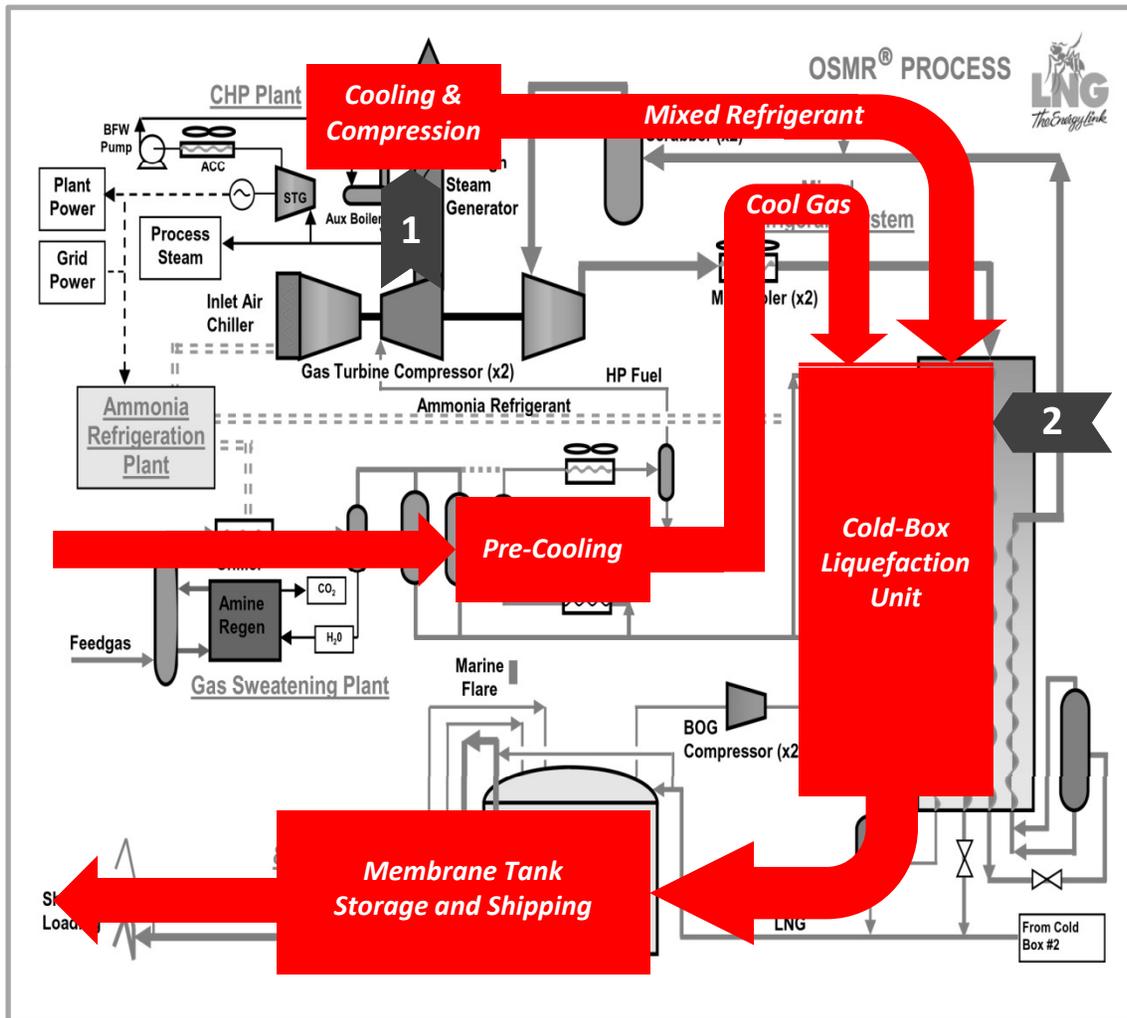
- ▶ 18,000 PJ\* risked forecast 2P reserves uncommitted in Queensland
- ▶ Key focus on coal seam gas companies for gas supply of ~4,500PJ for 3 mtpa
- ▶ Gas supply plan now focused on **SIX** suppliers, including Metgasco
- ▶ Gladstone LNG project a potential option for ramp-up gas supply from the planned larger scale LNG projects on Curtis Island, Port of Gladstone
- ▶ Gas supply plan is supported by strategic partner CNPC HQCEC
- ▶ Gas supply inlet point for all LNG projects ~ 21 km from Fisherman's Landing
- ▶ Gas suppliers timetable to supply now fully defined

\*Company: internal independent report

# Gladstone LNG "Spur" Pipeline



# Technology and OSMR<sup>®</sup> Benefits



## OSMR<sup>®</sup> KEY DESIGN FEATURES

### Simplicity in design, construction and operation

- ▶ Faster build
- ▶ Reduced capital intensity

### Mid-scale

- ▶ Location flexibility
- ▶ Reduced capital requirement

### High efficiency and low emissions

- ▶ Better economics
- ▶ Reduced emissions

**Total energy efficiency improvement of 30% over conventional LNG processes results from OSMR<sup>®</sup> process innovations:**

- 1** Gas turbine inlet air cooling improves plant capacity by 15%
- 2** Supplementary cold-box cooling improves plant capacity and efficiency by 25%

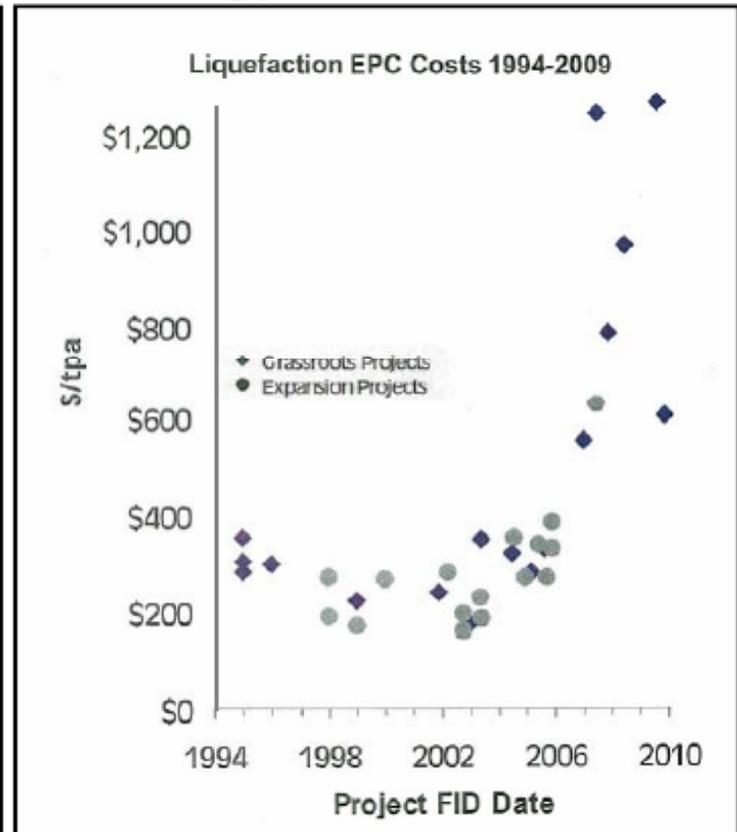
## Commercial Benefits of LNG Ltd's Technology and Methodology

### Project cost breakdown (USD):

|                               |                 |
|-------------------------------|-----------------|
| ▶ Engineering                 | \$29m           |
| ▶ Procurement                 | \$210m          |
| ▶ Construction                | \$374m          |
| ▶ Other (incl contingency)    | <u>\$107m</u>   |
| Total EPC (1 train)           | <u>\$720m</u> ↓ |
| Marine Works                  | \$85m           |
| Additional train              | <u>\$300m</u>   |
| <u>Total cost for 3.5mtpa</u> | <u>\$1,105m</u> |

Efficiency benefit (2.5% more  
LNG sales) at \$10/MMbtu NPV<sub>10</sub> \$387m

**EPC cost index for 3.5mtpa \$300/tpa**  
Project cost using cascade  
or other process >\$600/tpa >\$2,100m

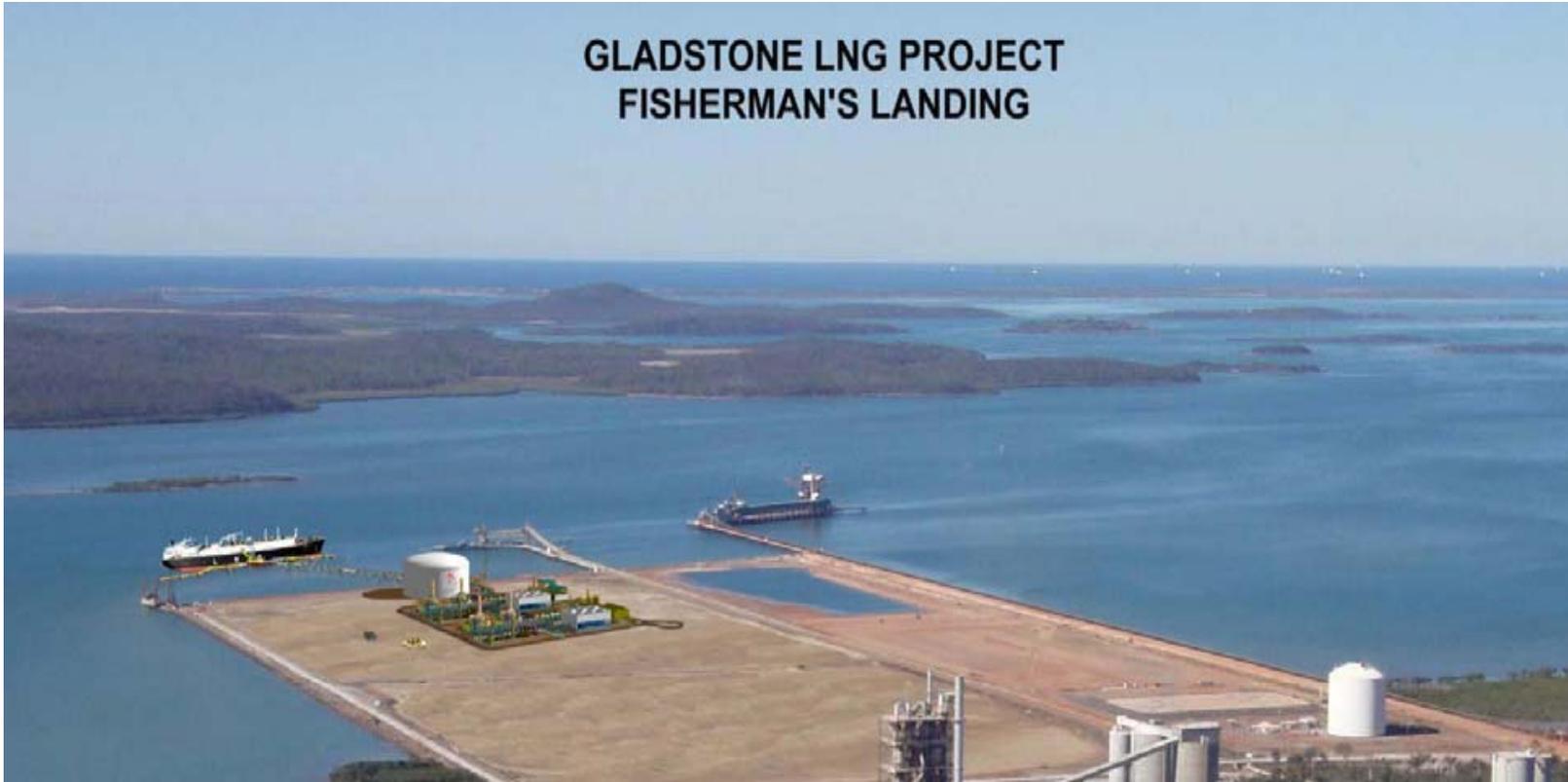


**Commercial Benefit at FL alone  
>\$1,400m for 3.5mtpa**

# Summary of OSMR<sup>®</sup> Benefits

- ▶ Best solution - all aspects of the plant including gas pre-treatment, liquefaction, storage, utilities, construction techniques etc optimised and integrated. Numerous industry experts (consultants, process licensors, equipment suppliers, contractors, operators etc) engaged to accomplish the best techno-economic solution, Ability to operate at approx. 70 TJ/D (apprx. 30 PJ/PA)
- ▶ Liquefaction system - single mixed refrigerant composition, flowrate and pressures optimised to match cooling curve and best fit standard available equipment. Proven SMR process used with numerous reference sites
- ▶ Efficient process - only ~6.5% of feedgas used as fuel for the process. Modern high efficiency gas turbines (MR compressors) and CHP plant utilised for utility power
- ▶ Simple process – less equipment items required per train compared to alternative processes, resulting in low capital and low operating/maintenance costs
- ▶ High train availability – parallel compressors (MR and ammonia) used compared to compressors in series for alternative processes
- ▶ Fast start-up time – only 24 hours compared to up to 72 hours for alternative processes
- ▶ Modular construction technique - minimises site construction/commissioning work, improves quality and reduces costs
- ▶ LNG storage tanks – membrane tanks and concrete slip form construction technique to minimise construction time (critical path) and reduce costs

**GLADSTONE LNG PROJECT  
FISHERMAN'S LANDING**



**“Gladstone LNG Project & OSMR®”  
Shared Vision**

by

**CNPC, HQCEC and LNG Limited**



**Our Logo:**

We chose the red ant as our logo because it is distinctive and bold and represents strength, energy, hard work and perseverance – characteristics we aim to make trademarks of our corporate culture.

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