



ZR-LNG Technology

Small to Mid-Scale Liquefaction of Natural Gas





LNG is a Growth Market

Shell 2018 LNG Outlook:

2017 demand 293 million tonnes/y

2030 demand 500 million tonnes/y

Requires investment of \$200 billion

\$35 billion through to 2030 suited to ZR-LNG technology

(after allowance for other project scope and pre-committed projects)

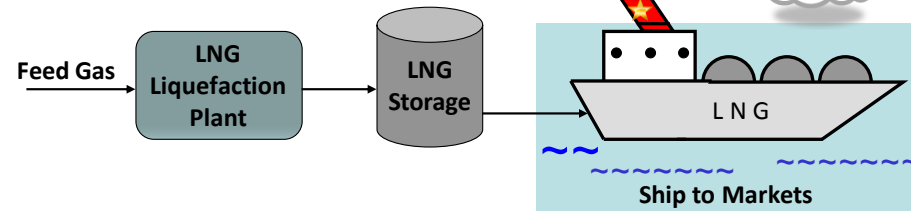
Gasconsult Share at 15% market share = \$5.25 billion



ZR-LNG fits both Liquefaction Markets

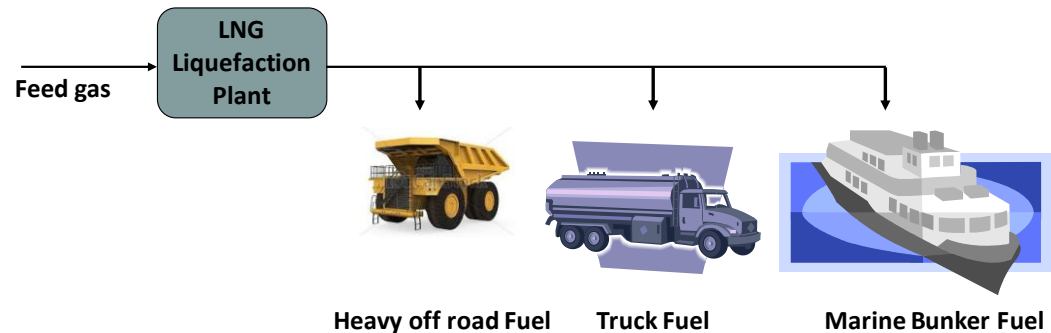
Large-scale and Mid-scale:

Moves gas to market where a pipeline is uneconomic or politically problematic



Small-scale:

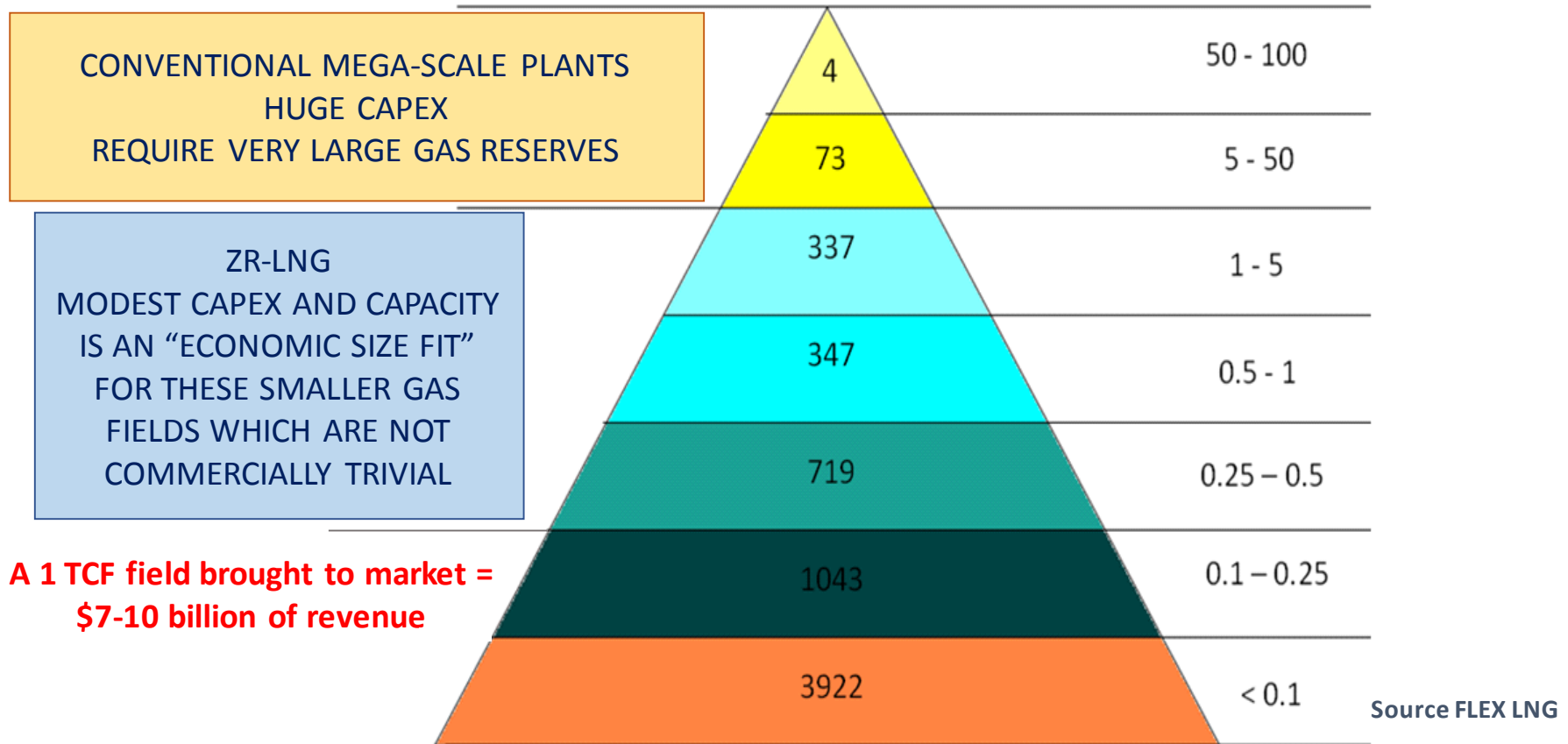
Transportation fuel substitution (rail, trucking and marine)





Target – Mid-scale through smaller gas fields

Distribution of stranded gas fields by size





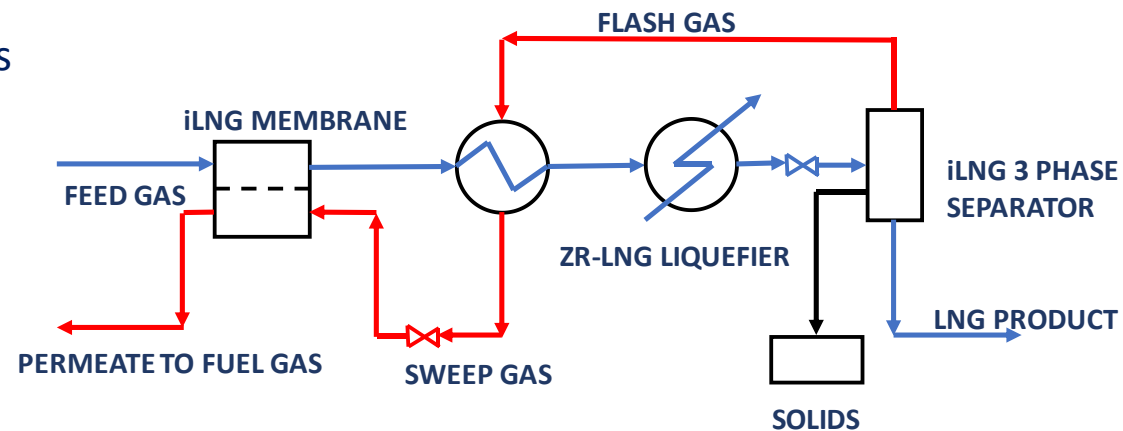
Target – Small scale fuel substitution

ZR-iLNG¹ is a combination of:

- Gasconsult's ZR-LNG liquefaction technology (elimination of refrigerant infrastructure) +
- Osomo/iLNG's membrane sweep technology (order of magnitude improvement over conventional CO₂ and water removal) +
- Osomo/iLNG's CO₂ freeze out technology

ZR-iLNG eliminates a large amount of equipment, eliminates heat sources and energy requirement, eliminates waste liquid streams. Described by industry expert as a potentially **disruptive** technology

ZR-iLNG CONCEPTUAL FLOWScheme



1 - a joint development by Gasconsult with Osomo Projects/iLNG, the Netherlands



ZR-LNG differentiators and benefits

Conventional technologies use external refrigerants, either hydrocarbon liquids/gases or nitrogen

significant cost to replace lost refrigerant (plant upsets, ongoing seal leaks)

refrigerant storage and transfer equipment

supply logistics issues

ZR-LNG uses no external refrigerant and requires no refrigerant storage or transfer equipment

saves capital and operating cost

Energy Efficiency

ZR-LNG is best in class mid-scale scheme, less energy use and lower CO₂ emissions



Patent Protected Technology

ZR-LNG has patent protection in UK, Australia, S. Korea, Japan, China and Mexico.

ZR-LNG patents pending in USA, Canada, Malaysia and India

Additional patents on process variants submitted which will provide additional protection and value

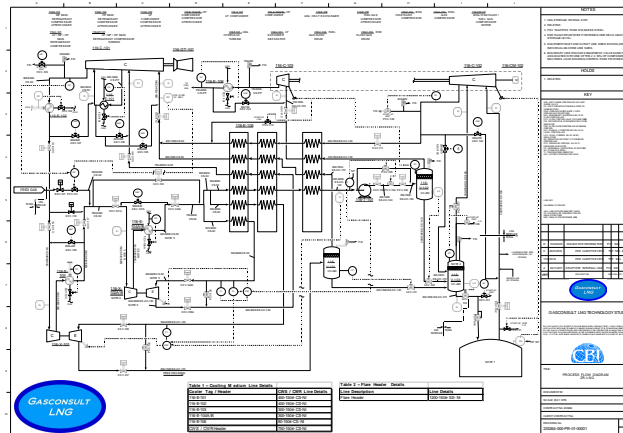
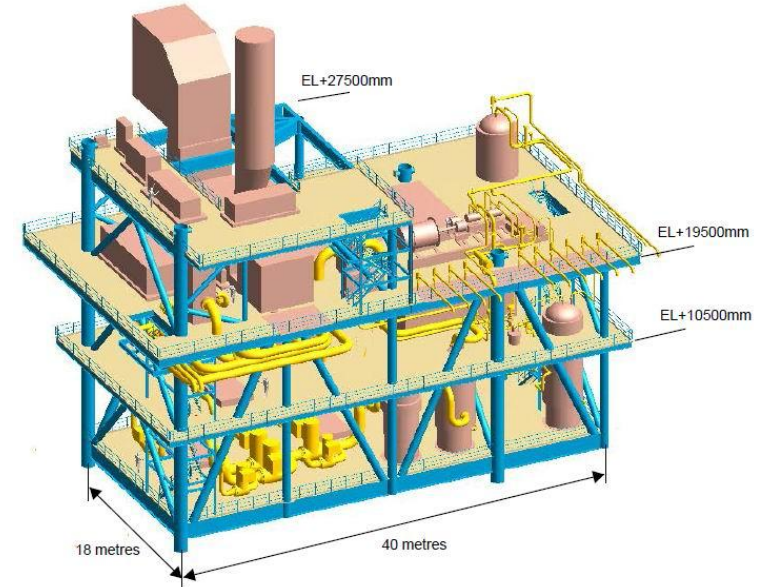


ZR-LNG Design has been Validated

Design validated by:

Shell
BP

CB&I (now McDermott)
Thyssenkrupp
Other EPC companies





Gasconsult Team

Existing 5 man team has extensive first division experience in the EPC sector:

Bill Howe > 20 experience with the Foster Wheeler group

Geoff Skinner > 30 years experience with Foster Wheeler group

Tony Maunder > 30 years with Foster Wheeler, BP and ICI

Joseph Barba > 30 years with Foster Wheeler, Lummus, Hitachi

Mike Sterne > 30 years with Fluor, Bechtel, Amec

In total > 200 man-years relevant experience

Excellent business connections into the target market



Funding Requirement

Seeking £920,000

Covers 2 years opex including 2 new recruits:

Salaries including payroll burden £318,000 p.a.

Office and infrastructure £96,000 p.a.

T&L £41,000

Total p.a. = £455,000

Note: The Gasconsult Board and officers have invested circa £200,000 cash plus 10 man-years of time into the development of the ZR-LNG technology



Business Model and Income Stream

Operate as technology Licensor:

Small core team, low overhead, no manufacturing, no expensive bidding and high risk contracts

Gasconsult Share at 15% market share = \$5.25 billion

Revenue on licence fee business model at 3% of project cost through to 2030 = \$157 million

Average revenue p.a. through to 2030 = \$13 million

Average company costs p.a. through to 2030 = \$1.7 million (years 1 & 2 \$0.62 mil)

Overall company valuation NPV10 over 15 years = £48 million

Overall IRR over 15 years = 345%

Based on initial investment of £0.92 million for 18% of business (15% post dilution arising from ESOP)

Investor Return NPV10 = £6.6 million (post ESOP dilution and pre-exit)

Investor Return IRR = 87% (post ESOP dilution and pre-exit)



Exit Strategy

Potential Acquirers of Gasconsult

Targets can leverage the technology beyond licensing operations and secure greater share of project scope

EPC contractors seeking better returns through exclusive access to a superior technology
More projects, better margins, full EPC scope

OEMs with major equipment integral to the ZR-LNG process
e.g. BHGE, Siemens, Mitsubishi. Potentially supply >70% of all equipment in ZR-LNG schemes;
Less competitive environment, better margins

Oil major seeking market advantage (access to gas reserves) through exclusive availability of superior technology. Monetize the full value chain through gas production

Existing LNG licensor seeking competitive advantage
e.g. Air Products, Linde, Conoco, Chart. Potentially greater market share



Contact

bill.howe@gasconsult.com

+44 790 827 2681