

### The Energy Link

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#### CAPITAL STRUCTURE

ASX code (tbc)	LNG
Price	A\$0.20
Shares on issue	17,000,100
Performance shares	36,000,000
IPO shares	40,000,000
Total shares on issue	93,000,100
Market cap.	A\$18m

#### SHAREHOLDERS

	%
IPO Public	43
Seed Shareholders	18
FM Brand*	14
PJ Bridgwood*	14

\*performance shares post IPO

#### DIRECTORS

Chairman	P J Harvey
Managing	FM Brand
Non-Executive	RJ Beresford
Non-Executive	WT Hornaday
Technical	PW Bridgwood
Financial	N Marshall

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WHI Securities Pty Ltd  
ABN 30 094 927 947

## Liquefied Natural Gas Limited

- New opportunity in small scale LNG production and distribution
- 120mtpa international LNG trade expanding at over 7%pa
- Access to cheap remote gas for sale as LNG to new markets
- 2,700tonnes/day sales agreements MOI already in place
- Target of 5,000tpd LNG under MOI expected by June 2005
- Innovative and modular plant design delivers low capital costs
- First shipments expected by end 2006

Liquefied Natural Gas Limited (LNG Ltd) is an Australian based company looking to list on the ASX through an underwritten Prospectus lodged with ASIC on 30 July 2004 to raise A\$8m through 40m shares at A\$0.20.

The Company aims to develop LNG plants, with production capacity ranging from 100 to 1,000 tpd, accessing low cost gas reserves and delivering LNG to niche energy markets which do not have gas pipeline access or are too small for major LNG suppliers.

The Company's 'Energy Link' strategy is to link 'stranded' or 'flared/vented' gas with population or demand centres.

LNG Ltd has access to over 260BCF of Proved and Probable gas in coastal Tanzania that can be liquefied and delivered to ports in India and Sth Africa. China and Japan are other ready markets seeking gas fuel as a cheaper alternative to liquid hydrocarbon fuels. Other gas reserves are available.

Memoranda of Intent (MOI) are in place for up to 2,700tonnes of LNG /day and additional contracts are expected before mid 2005. This compares with the North West Shelf LNG Project with expanded output of 11 million tonnes of LNG/year (30,000tpd) with Woodside's 1/6<sup>th</sup> share being 5,000tpd. MOIs cover sales with key power generating utilities and governments.

The Company's competitive advantage over other LNG producers is the access to very cheap stranded gas. In addition, the small size of the liquefaction plants can produce 100-1,000tpd from standardized skid mounted units and can deliver to unsupplied niche gas markets in 18,000t cargo LNG tankers (compared to typical 60-70,000 t tankers).

The process, using ammonia absorption refrigeration, also adds to the Company's competitive advantages. The process improves the efficiency of the cooling phase of LNG production, enabling a substantial improvement in the efficiency over existing LNG production plants, including reduced capital and operating costs and decreased greenhouse emissions.

The Company's emphasis on using proven gas reserves, either stranded or flared gas feedstock, means that the Company has no gas exploration risk.

LNG Ltd will gain income through development and management fees, royalties on LNG production and through equity earnings in the LNG liquefaction and regassifier projects.

**LNG Ltd will have no equity or debt requirement with each LNG project being funded at the project level.**

LNG Ltd should develop a strong and growing earnings base from late 2007 in the booming international market for LNG. Natural gas with substantial greenhouse emission advantages is now the fuel of choice for most new power generation.

## **Liquefied Natural Gas Ltd - in profile**

Liquefied Natural Gas Ltd (LNG Ltd) was established in 2002 to develop opportunities in liquefied natural gas to deliver fuel to power generation projects in remote locations. LNG Ltd has management with a long history in successful development of projects in natural gas, LNG and power generation.

The Executive Directors established Australia's first mini-LNG project at Alice Springs in 1989 for the delivery of 15 tpd of LNG by road tanker to the power station at the resort at Yullara (near Uluru (Ayres Rock)). That project operated successfully for 15 years.

LNG Ltd has been able to secure supply from gas reserves that are 'stranded' with no other immediate market and can therefore be acquired at quite low prices. These reserves usually are too small to justify development of major LNG projects but can be ideal for small scale LNG projects.

The Company already has access to 260BCF of Proved and Probable gas reserves with additional potential under a signed Memorandum of Understanding with Canadian company Artumas to provide offtake from gas fields near the port of Mtwara in Tanzania on the east coast of Africa. Tanzania is a major producer of gold and has a strong reputation for successful resource project development with companies such as BHP-Billiton, Barrick Gold, Newmont and Resolute Resources.

LNG Ltd also has held preliminary discussions with owners of several other near-port gas reserves in other parts in the world.

The owners of the gas fields would be responsible for the development of the gas fields. LNG Ltd will facilitate development and project funding for each LNG liquefaction plant and will retain a minority equity.

LNG Ltd has identified a major opportunity in developing a market to supply LNG to electricity companies in major population centres that are not connected by pipeline to gas fields, are too small to be serviced by current large scale LNG producers and currently use more expensive liquid hydrocarbons as fuel.

Markets have been identified around the Indian Ocean Rim in India, Sri Lanka, Sth Africa and also in Japan and China. LNG Ltd has already signed agreements with prominent quality counterparties to supply a total of up to 2,700tpd to power stations as follows:-

- \* MOI with GMR Energy of India for ~700tpd for 10 years
- \* MOI with Apollo Infrastructure Project Finance of India for ~1,000tpd for 20 years
- \* MOI with PPN Power Generation of India for up to 1,000tpd for 20years

In addition LNG Ltd has a MOU with GAIL (India) Ltd (formerly the Gas Authority of India) for up to 200tpd using flared gas from an offshore oilfield and to develop other LNG opportunities on a collaborative basis.

LNG Ltd believes it can have a total of 5,000tpd under MOI by June 2005.

LNG Ltd has access to an off the shelf manufacturer in Canada for key LNG plant and equipment. The units are available in modules and fit within a normal sea container.

LNG Ltd also has access to a proven standard refrigeration technology not yet applied in the LNG industry but which would improve operating efficiencies and reduce greenhouse emissions. The technology has been verified by Twister BV (a subsidiary of SHELL) and a conditional agreement has been reached for Twister to use the technology on all projects with output higher than 1,000tpd.

## **Investment review**

The market for LNG has been one of the energy success stories of the past decade and appears to have prospects for an even stronger next ten years.

Concern over greenhouse emissions has led to unprecedented growth in electricity generating capacity using combined cycle gas turbines. This growth in capacity has led to shortages in domestic gas and has pushed up gas prices.

The US is a prime example whereby about 240,000MW of new gas fired capacity will have been installed over 2000-2005 and makes up over 95% of all new generating capacity there. Consequently, the US is now a net importer of gas and the number of LNG import terminals will increase from the current five to twelve by 2006.

Japan is the largest importer of LNG followed by Sth Korea, Spain, USA, France, Taiwan, Italy and Belgium. China and the US will become the major importers in the next decade and LNG volumes in international trade are likely to double to around 250mtpa by 2010 and, according to ExxonMobil, rise to 600mtpa by 2020.

All this growth in LNG trade is based on large import terminals and very large export projects such as the North West Shelf, Algeria, Indonesia, Qatar, Brunei and Malaysia.

However, the advantages of LNG are required by many regions that will never support a major LNG import terminal and these are the niche markets for LNG Ltd.

LNG Ltd has identified a potentially very large market in port cities around the world that can take modest tonnages of LNG if delivered cheaply and efficiently. LNG Ltd believes it can meet the demands of these markets through its mini-LNG technology and by accessing undeveloped gas reserves that would otherwise have no market and be too small to support a major LNG project.

The port cities of southern India have immediate and growing demand for gas supply for existing power generation plants and fertilizer plants. LNG can be delivered to these sites and re-gasified at a price that can be a substantial discount to liquid fuels. As fuel costs are by far the largest input cost for power generation and fertilizer plants a switch to cheaper fuels brings immediate improvements to profitability. Markets are highly receptive to the supply of LNG. The Indian Government has already decreed that all fertilizer plants using naphtha and other liquid fuels must switch to gas.

LNG Ltd has made arrangements with Canadian company Artumas to develop over 260BCF of gas reserves, construct a 27km pipeline to the port and establish a 700tpd LNG liquefaction plant at the Mtwara Port. LNG Ltd will maintain a minority interest in the LNG plant.

Shipments will be by specially designed 18,000t chartered LNG tankers using industry standard technologies.

LNG Ltd has also made arrangements with several LNG buyers to take delivery under take-or-pay contracts and to construct re-gasifying plants at local ports. LNG Ltd will maintain minority equity interest in each re-gasifying plant.

### **LNG Ltd will therefore have no equity or debt requirement.**

On present projections of 2,700tpd from 2007 to give almost 1mt of LNG in a full year, LNG Ltd could be expected to generate royalty revenues of at least US\$10/t.

Other revenue would accrue from dividend payments from the minority interest in the liquefaction and re-gasifying plants over time.

### **The benefits to fuel users that switch to LNG are substantial.**

The example at GMR's 220MW Mangalore power station taking 700tpd LNG (240,000tpa) at, say, US\$5/mmbtu rather than naphtha at US\$10/mmbtu would save around US\$50m per year. The benefits of cost savings with only minor capital modification costs are compelling.

## Background to the market for Liquefied Natural Gas

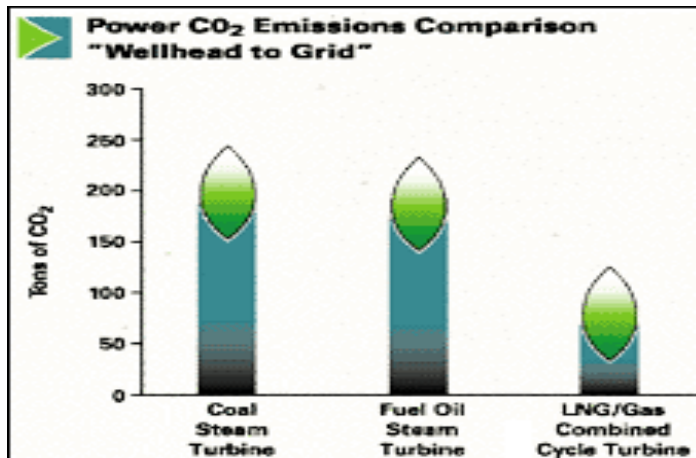
Most Australian investors would be familiar with the major North West Shelf Project ('NWSP') which has involved the building of an offshore platform (North Rankin A) with over 100km of undersea pipeline to the Burrup Peninsula near Karratha where several 'trains' of LNG plant take about 1,200 million cubic feet (1.2BCF) per day of natural gas which is turned into 11 million tonne pa of liquefied natural gas (LNG) for shipment to Japan and other north Asian ports.

BHP Billiton and Woodside Petroleum each own one sixth of this project that will be expanding production by 20% to 30,000tonnes per day of LNG during 2004.

### Natural Gas

Natural gas has become the fuel of choice for many countries due to its clean burning character.

It is ideal for domestic consumption and for peak period electricity production using combined cycle gas turbine generators to complement base load power generation by coal, nuclear fuels and hydropower.



Source: BP LNG, 2004

### LNG

LNG is produced when natural gas is cooled to -161°C and condenses to liquid. The liquid takes up about 1/600<sup>th</sup> of the volume of natural gas

In most countries gas is delivered by a pipeline network from conventional fields but for those countries without local gas supplies and beyond a pipeline network, the opportunity of developing port facilities to accept tanker loads of LNG is fast becoming a reality.

Japan, Spain, France, Sth Korea, USA, Italy, Portugal and Belgium already have LNG receival terminals and the first UK facility opens in early 2005. Over 20 LNG terminals are now in use and many more are planned for the Mediterranean and Europe. North America has five and is fast -tracking others which could amount to over twenty.

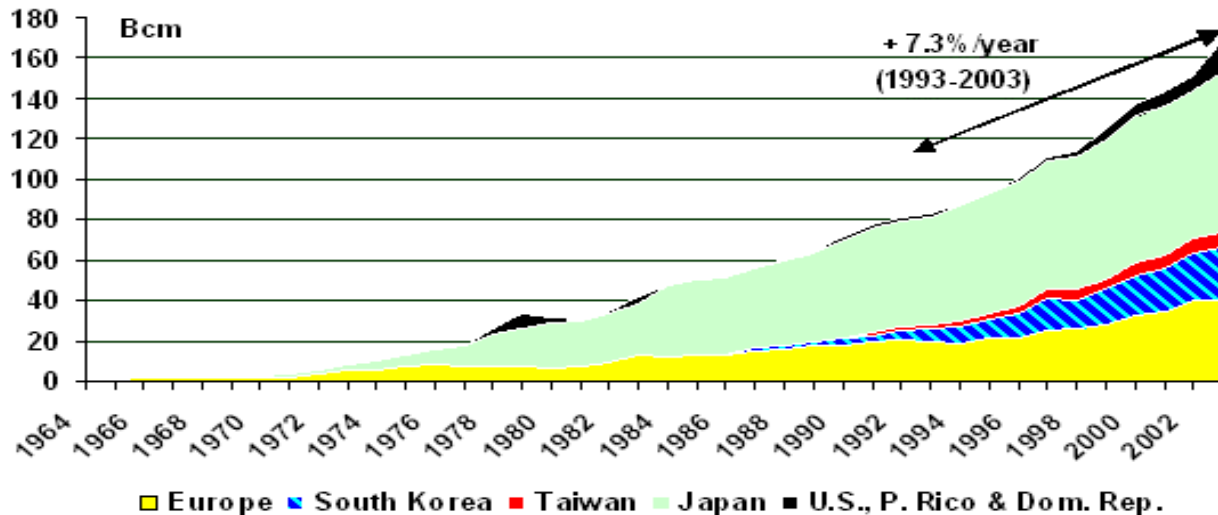
The NWSP with its large 11mtpa is really only a small participant in the world LNG market of around 120m tpa.

Tonnage growth has been at a 7.3%pa for the past decade and should accelerate in the next decade by more than double to over 280m tonnes pa and, according to ExxonMobil, reach 600m tonnes by 2020.

## International LNG trade

Trade in LNG has grown solidly over the past 30 years and has accelerated over the last decade with a 7.3% pa growth to around 120m tonnes (about 170billioncubic metres equiv.).

### Evolution of the International LNG Trade



From, The 2003 Natural Gas Year in Review, CEDIGAZ, 2003

Japan is by far the largest importer of LNG and in 2003 had about 45% of all imports with Sth Korea next with about 15%, followed by Spain, France, Portugal and Belgium. The US imports around 9% but has very strong growth expectations. Major debate is currently underway in the US for major increases in LNG import capacity to reduce reliance on imported oil and to offset a decline in availability of domestic gas. The US Energy Information Administration expects LNG to make up the majority of natural gas imports that should reach 21% of domestic consumption by 2010.

Spain is the biggest European importer of LNG followed by France and Portugal and Belgium. The first LNG delivery into Britain is expected at a new facility to the east of London in early 2005 with LNG from Algeria. British Gas has also just signed a major import contract with Petronas of Malaysia to accept LNG deliveries in 2007 at a new terminal at Milford Haven in Wales.

Most LNG is purchased by gas wholesalers but a recent direct sale by Indonesia to POSCO of Sth Korea was landmark contract direct to an end user.

Australia's NWSP is bidding on the supply of LNG to California and BHP Billiton is also looking to establish an offshore LNG re-gasifier platform to supply Miami.

Over 160 LNG tanker vessels of 1,250 – 70,000t capacity currently deliver cargoes around the world and a further 83 are on the drawing board for construction with about half being ordered in 2004. Most new tankers have 70,000t capacity.

### **Drivers for International Trade**

The demand drivers for international trade in LNG are:-

- \* Environmentally acceptable power generation
- \* Domestic gas shortages
- \* Increase in role of combined cycle gas turbine generators
- \* Price certainty compared to liquid fuels

The feature in all these new import terminals is to establish large units to achieve economies of scale.

Prices for delivered LNG amount to around US\$5-6/million BTUs (or roughly 1.04 Gigajoules) from these major projects and reflect the requirement to construct production facilities (often offshore platforms), pipelines and LNG production trains.; These projects have large capital expenditure and a long lead time for development and construction.

Most LNG projects have the gas production from large fields and have set up LNG liquefaction plants of at least 5mtpa with sales contracted to one or more major gas wholesalers for reticulation or electricity generators for peak demand use.

Whilst it is obvious that the major LNG project participants require large scale purchasers who can underwrite the mega LNG re-gasifiers, the market for smaller purchasers is also important.

Most turbine power generators are in the 20-75 MW size and can run on any light fraction hydrocarbon from gas through to liquefied petroleum gas (LPG), kerosene, diesel, naphtha or condensate and can have simple modifications made to take any such fuel.

Current high oil and product prices have made these units very expensive to run and in some cases they have shut down.

Delivered prices of LNG into Japan are currently around US\$5-6/mmbtu whilst typical fuel prices are:-

	US\$/mmbtu
Naptha	9-11
Diesel	8-10
Kerosene	9-11
LPG	7-8

It could be expected that LNG Ltd will offer customers prices less than those currently obtained in Japan and at about US\$4-5/mmbtu.

On the basis of these cost savings the attraction of LNG is compelling and so as long as LNG Ltd can gain access to sufficient cheap gas it would have an almost unlimited market with the small scale LNG customers who would otherwise not be served.

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- The directors and associates of WHI Securities Pty Ltd hold shares in Liquefied Natural Gas Ltd. This position can change at any time.
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- WHI Securities Pty Ltd is joint Lead Underwriter to Liquefied Natural Gas for its IPO and will earn underwriting fees and fees for corporate advice in respect of this role.