INTRODUCTION

The Chairman of GASEX, Dr Vichit Yamboonruang, Distinguished Guests, Ladies and Gentlemen:

- SLIDE 1: ASIA’S POWER GENERATION INDUSTRY -

It is my pleasure to address you today on behalf of Australia’s international marketing agency for liquefied natural gas (LNG), Australia LNG Pty Ltd (ALNG).

These images illustrate some of the developments across South East Asia which are steering the LNG industry in this region into one of the most exciting periods in its history.

Appropriately, this sequence of pictures concludes with a shot of the giant Ratchaburi power complex, outside Bangkok. Once completed, by the end of 2001, this complex will have a generating capacity of some 3,645 MW, making it one of the largest power plants in the region1.

Facilities like this encapsulate some of the key trends for the power generation industry in the region, in two senses: it is being partially privatised and it is fuelled by natural gas, in this instance sourced from Myanmar’s Yadana field.

In Australia, we view the opportunities emerging in South East Asia and the Indian subcontinent with increasing excitement, as growing economic strength, concerns about pollution and air quality and the increasing sophistication of countries in the region deliver immense opportunities.
We are also mindful of the challenges facing the LNG industry in the region. The privatisation and deregulation of power industries across Asia is changing significantly the profile of the market and leading to pressures for new, more flexible contract terms.

Over the next 15 minutes I would like to outline our view in Australia of some of these issues, and also explain why we are very confident that the Australian LNG industry will play an increasingly important role in meeting the challenges of the new millennium.

THE LNG MARKET TODAY

I would like to start with a brief synopsis of the current status of the LNG market as we see it.

As we know, the LNG industry in this region has been through more than its share of ups and downs over the past few years following the Asian currency crisis which began in 1997 and caused some significant fluctuations in demand.

The industry was further hit by some dramatic ups and downs in oil prices during this period.

- SLIDE 2: AVERAGE US DOLLAR OIL PRICE 1980-2000 -

In fact, to give you an idea of the remarkable roller-coaster ride from a pricing point of view, this graph shows the wide fluctuations in oil prices over the past 10 years. Oil is traditionally the commodity to which LNG prices are pegged.

LNG demand growth slowed significantly during 1998 and the Asian crisis sparked pressure for restructuring of LNG supply contracts, cost reductions and more flexible terms, and deferred commencement of capacity expansions.

However, the fact is that the LNG industry has continued to grow (world LNG trade has increased by an average of 7.8% over the past decade), long-term contracts have been honoured, and buyers have remained loyal to their suppliers. Indeed, suppliers have remained loyal to buyers, being fairly liberal in their interpretations of contractual provisions during this difficult period.

- SLIDE 3: WORLD LNG EXPORTS 1990-2000 -

This slide shows the growth of the world LNG trade over the past 10 years.

The overall situation really started improving last year with economic recovery in many Asian countries and, in 2000, the industry is again looking to the future with confidence.

Because of its environmental benefits as a clean-burning fuel and its widespread application for base-load power generation thanks to combined-cycle gas turbine (CCGT) technology, gas is widely regarded as the preferred fuel of the 21st century.

The oil price has surged to much higher levels, currently around the $30 a barrel level, and, although LNG prices have been lagging behind oil’s spectacular surge, the general
investment outlook for LNG is much improved. Of course, this also encourages the more marginal LNG ventures and the proponents of immensely costly long-distance pipelines.

Shell has forecast that global gas demand could more than double by 2020, while in the Asia-Pacific region, demand is projected to grow by 60% in the next 10 years. This would require an additional 10 trains of LNG production capacity.

- SLIDE 4: ASIAN LNG DEMAND FORECAST -

In terms of hard numbers, LNG demand in the Asia-Pacific region is projected to grow from 69 million tonnes a year this year to just over 110 million tonnes a year in 2010, boosted by the opening of new markets like China and India.

Ironically, the recent surge in oil prices, while having some benefit for the LNG industry in terms of investment outlook, is also encouraging Asian consumers to consider turning to piped natural gas and LNG as long-term alternatives.

The Ratchaburi power station I mentioned in opening is a good example, as are plans to pipe natural gas from Indonesia’s vast Natuna fields to Singapore and elsewhere in Asia.

THE ENVIRONMENT AND AIR QUALITY

Short-term economics aside for a moment, the environmental imperative for switching to gas remains an enormously compelling factor underpinning the LNG industry’s expansion.

- SLIDE 5: THE GREENHOUSE EFFECT -

The urgency of the task of reducing pollution caused by burning coal and oil to generate power has been recognised in countries throughout the region, many of which are, or will become, importers of LNG.

As these countries represent some of the most vigorous economies in the world at present the potential contribution of natural gas to improving their air quality in the next decade is enormous.

Photochemical smog – a chemical cocktail formed by the reaction of hydrocarbons with nitrogen oxides in the presence of sunlight – is a known health hazard which may aggravate conditions such as asthma.

While air quality is the most pressing issue in most of Asia the broader picture is the so-called greenhouse effect, the principles of which are explained in this slide.

Natural gas emits less carbon dioxide per unit of energy than any other fossil fuel and is widely seen as a solution to the problem of reducing greenhouse gas emissions.
The Australian Gas Association estimates that natural gas produces around half the CO₂ emissions of black coal, and considerably less than brown coal, oil and diesel – around 52,000 tonnes of CO₂ per petajoule of energy⁵.

As this slide shows, a typical black coal from an Australian field produces about 865 kilograms of CO₂ per megawatt hour of electricity generated, and Middle East oil creates only a little less. LNG produced by the Australia’s North West Shelf Project would emit 493 kilograms of carbon dioxide using the same measure⁶.

In this context, it is not surprising that natural gas is widely tipped to increase its share of the primary energy mix throughout the world over the next few decades, replacing fossil fuels and also nuclear energy as the preferred fuel source.

The recent difficulties experienced by companies in obtaining approvals for new nuclear power plants, particularly in Asia, further reinforces this point.

A recent study by BP-Amoco found that growing economies are more likely to build gas-fired power stations than coal. As an illustration, in the United States, 95% of new power plants use gas⁷.

But, even through the environmental case for gas is a strong one, we should not forget that CO₂ is sometimes associated with natural gas. Venting this CO₂, or passing it into the atmosphere as an inert, are practices likely to be unacceptable.

Australian producers take this issue very seriously, and have invested millions of dollars into minimising the environmental impact of the proposed expansion of the North West Shelf LNG Project, which will slightly increase Australia’s net emissions of CO₂.

The Australian LNG industry also invests heavily in the development of technology to deal with CO₂ emissions, including the possibility of reinjecting it into natural gas reservoirs.

But let us put Australia’s rather unique position in perspective: according to the Australian Gas Association, Australia’s emissions comprise only 1.4% of total global emissions⁸. Australia is also the only Annex 1 (developed) country under the Kyoto Protocol – which is designed to address the problem of greenhouse emissions globally – that exports LNG.

Many of Australia’s key competitors are developing countries which are forecast to contribute a significant proportion of the increase in global emissions by 2010 and yet do not find their exports subject to greenhouse abatement costs under the Kyoto process.
International greenhouse policies need to be cognisant of the full life-cycle greenhouse advantages and clean air benefits of LNG compared with other fuel sources and I urge all here to work to secure a truly global view of a truly global problem.

It is here that the flexibility mechanisms within the Kyoto Process may help – Emissions Trading (ET), Joint Implementation (JI) and the Clean Development Mechanism (CDM), both domestically within individual countries and on a broader international scale.

At present, no country has introduced emissions trading, but some European nations are applying carbon taxes to penalise industries which exceed emission limits.

Even in the medium term, the introduction of such measures could add an important economic imperative to the argument in favour of natural gas.

Carbon taxes could add a significant additional component to the life-cycle costs of electricity generation for coal-fired power stations compared with LNG-fuelled facilities – even if the capital costs of LNG projects may be higher.

- **SLIDE 9: COMPARATIVE GENERATION COSTS** -

We have recently seen a study into the comparative costs of electricity generation in Guangdong in China, as illustrated in this graph, and you can see the significant effect a carbon tax might make. Even without the carbon tax, we believe power from gas competes with that from coal.

**AUSTRALIA’S POSITION**

In this enticing market scenario, Australia presents a unique set of opportunities for potential buyers, providing a highly sophisticated infrastructure, stable political and economic platform, a reputation for reliability in delivering LNG and high degree of technological expertise.

The North West Shelf Venture has been at the forefront of developing that expertise, and indeed in overcoming immense difficulties in establishing the LNG project on a remote site, almost as far from a major city as Bangkok is from Hong Kong.

But that was more than a decade ago, and today we look to new opportunities with a confidence that has come with the achievements now well recognised throughout the region.

- **SLIDE 10: AUSTRALIAN GAS RESOURCES** -

Australia is one of the great repositories of natural gas in the world and it is quite remarkable to see the rapid growth of Australia’s gas resource position over the past 25 years or so, as shown in this slide. Australian gas reserves are today three times those of its oil reserves.
Following the discovery of the first fields of the North West Shelf and North Rankin, gas reserves of approximately 12-15 trillion cubic feet (Tcf) formed the basis of the original North West Shelf development in the late 1970s.

Today, the Department of Minerals and Energy in Western Australia estimates that the developed and undeveloped fields in Western Australia contain gas reserves of 83 Tcf at the 50% probability level\(^9\). This includes the fields of the Greater North West Shelf area and the Gorgon and ‘Greater Gorgon’ fields.

However, this figure does not include the vast gas reserves of the Timor Sea and northern Australia, which increase total reserves to over the 100 Tcf mark. Ultimate recoverable gas reserves for the Greater Sunrise and Evans Shoal fields off northern Australia are estimated at 16.9 Tcf.

It also does not include the impact of recent exploration success, including a number of recent discoveries in the ‘Greater Gorgon’ area, which already has estimated recoverable reserves of around 17.5 Tcf. New discoveries at Maenad, Geryon, Orthrus and Urania could significantly increase this figure.

Several Australian LNG projects are now ‘ready to go’ and anxious to build on the North West Shelf Venture’s successful track record in servicing the power needs of millions of Japanese households and business over the past decade.

- SLIDE 11: AUSTRALIAN LNG PROJECTS -

Significantly, the Australian LNG industry has in recent times been more innovative and proactive in finding ways to better exploit its gas riches by becoming involved in proposals to develop fully-integrated downstream processing industries – rather like the refineries, GTL facilities, petrochemical plants and fertiliser factories of Malaysia and Ray ong in this country.

A good example of this recently was with the North West Shelf Venture, which, as many of you will know, is well advanced in planning for an expansion which could see an additional 8 million tonnes of LNG capacity from two new trains added to its existing three-train output of 7.5 million tonnes a year.

In February this year, the Venture signed a conditional agreement with Syntroleum Sweetwater Operations to supply gas to a proposed A$600 million gas-to-liquids plant near its facility on the Burrup Peninsula. The Syntroleum facility is designed to produce a range of value-added downstream products and could become Asia’s second fully-fledged GTL facility.

The Gorgon Project is another major LNG development waiting in the wings. A greenfield development proposal based on reserves totalling some 21.5 Tcf in the Gorgon and Greater Gorgon fields, Gorgon would be based on the staged development of two LNG trains capable of producing up to 4.3 million tonnes per annum each.
The Northern Australia Gas Venture (NAGV), a joint venture between Woodside and Shell, is planning to develop the vast gas reserves off northern Australia, initially by focusing on domestic gas supply through Darwin to industry and power generation facilities in the Northern Territory and Queensland.

The NAGV has developed its own downstream processing concept through a proposal to supply gas to a new A$5 billion methanol and synthesis gas generation facility proposed by Methanex Corp, the world’s largest producer and marketer of methanol, in Darwin. NAGV has signed a letter of intent to deliver 110 petajoules of gas a year to Methanex Corp.

With the upstream component expected to cost in the range of A$2-3 billion, and the stand-alone domestic gas project targeting sales of 500-800 million standard cubic feet per day (MMscfd) over a 30-year period, NAGV can, quite literally, be viewed as the ‘next’ North West Shelf.

Major infrastructure items will include a large offshore platform, a 490-kilometre trunkline to shore and a stand-alone domestic gas plant at Gunn Point Peninsula on the mainland. First domestic gas deliveries are targeted for 2005 with first LNG production expected to commence in 2007. NAGV is also evaluating an extensive study into offshore LNG production on a floating facility.

The interest of Methanex and Syntroleum confirms the great opportunities that exist in Asian markets, with the recognition that the Australian fields are within easy sailing distance of many major consumers.

THE CHANGING LNG MARKET

- SLIDE 12: THE CHANGING LNG MARKET -

At Australia LNG, we have been in the vanguard of our industry’s efforts to capture some of these exciting market opportunities.

While we are very confident of our ability to do so in a highly competitive market, we are also acutely ware of the fast-changing dynamics of the international LNG market and have had to be sensitive to the changing needs of our buyers.

I touched on the Asian financial crisis earlier. In fact, this unique economic event acted to speed up the forces of deregulation and privatisation which were stirring in the power industries in many Asian countries – resulting in changes to traditional buying policies.

To illustrate the point, March 21 was a major turning point for big Japanese power utilities because, from that date, large commercial power consumers were free, in theory at least, to choose their supplier.

The net effect of deregulation has been that the big players of the power industry have seen their customer base split into high-risk, big-volume consumers and low-risk, small-volume
consumers. What they now need is flexibility to spread their fuel-supply contracts, including the ability to access the short-term or spot market.

This requirement will undoubtedly be felt by suppliers in terms of increasing pressure to sell greater volumes on shorter terms than the traditional 20-year contracts.

These, and other trends, have also encouraged producers to participate in the spot market, which has been growing strongly in recent years. Indeed, some producers are even investing in new shipping capacity dedicated exclusively to servicing the spot market rather than being tied to a particular project.

The other areas where LNG buyers have been flexing their muscle is in relation to price.

As most of you would know, there is a strong link between oil prices and LNG prices, and there are many in the industry who believe this nexus should be broken or at least made less important. One option is to link LNG prices instead to those of another commodity, such as coal.

Some of Australia’s Japanese customers believe that LNG is too expensive, and putting aside the view that a buyer will always claim this, there is undoubtedly pressure on producers, as more sources become available.

One of the effects of the wide fluctuations in oil prices over the past few years has been to strengthen the argument for LNG prices to be ‘de-linked’ from oil prices.

While I do not believe that a complete separation is likely in the near future, there is no doubt that we are starting to see some important shifts in the way that LNG is viewed in the market – that it should be seen as a commodity in its own right.

In Australia, we recognise the importance of producing LNG at the lowest possible price, if we are to remain competitive in Asian markets.

But while these pressures from buyers and observers continue, the fact remains that responsible importers of LNG do worry about the reliability and security of their supplies. Once LNG becomes part of the economic activities they are engaged in, it becomes essential.

The leading countries where the energy business has been de-regulated and thrown open to the forces of the market place are those where the physical supply of indigenous energy is not in doubt. A very different paradigm applies where energy arrives in liquid form in boats from afar – which boats which can not afford to be wandering around looking for a port.

We believe that, in inflation-adjusted terms, LNG is already far cheaper than it was when, for example, the North West Shelf began shipping cargoes to Japan more than a decade ago.

Improving technology, a long history of experience in building liquefying plants and the falling cost of sophisticated LNG carriers all give enormous hope that, again in real terms, gas prices will remain competitive with other fuels.
CONCLUSION

- SLIDE 13: ‘THE FUTURE’ -

The growing strength of Asian economies opens up new opportunities, for regions which a decade ago would not have been thought to be able to afford the premium for LNG, are actively examining the prospect of importing the fuel.

It is well known that there are serious shortages of electric power throughout Asia, and that pollution is an increasing concern in heavily populated areas. An example of the kind of market which would have been thought to be inaccessible a decade ago is India, where up to 14 LNG terminals are being proposed to serve planned power stations.

We can now feel confident that, despite recent setbacks, Asia still represents an enormous market for Australian natural gas.

The geographic advantages of Australian gas fields - in one of the most stable political and social environments in the world - a highly educated workforce and sophisticated level of technology, and a range of outstanding projects all of which are ‘ready-to-go’, are all factors that cannot be overlooked in this race for markets.

However, our industry is not complacent about the level of intense competition that is already evident from suppliers in other parts of Asia and in the Middle East. We face formidable challenges in ensuring that we can remain competitive, particularly given the uncertainties surrounding the handling of carbon emissions.

We also face uncertainties about how best to meet our customers’ requirements. On the one hand, we recognise that our buyers are looking for greater flexibility on pricing and contractual terms. On the other, we note that many of our customers are expressing an increasing desire to invest in sellers’ facilities and, vice versa, for sellers to invest in their receival infrastructure.

This desire for infrastructure investment appears to run contrary to the greater independence and reduced commitment, and makes it difficult for sellers to strike the correct balance.

Finally, I would like to make the point that, while short-term, flexible contractual arrangements are in vogue at the moment, there is no evidence that they produce greater benefits for the LNG industry in the long-term.

Traditional LNG deals were struck in a spirit of long-term partnership and problem-solving between buyer and seller. Short-term commercial deals are generally struck through a more aggressive, adversarial approach where buyers and sellers must, of necessity, sit on opposite sides of the table. Any benefits arising from the latter approach are, I believe, superficial to say the least.
ALNG’s purpose is to negotiate its way through this at times confusing landscape to bring buyers and sellers together in the best possible way in order to bring Australian natural gas to Asian buyers.

The Australian treasure trove of natural gas reserves should be regarded as an asset for the entire Asian region, in a new century in which environmentally friendly energy will be essential for economic growth. We will continue to work hard over the next few years to ensure that this view is translated into reality.

STATISTICAL SOURCES

1. **Bangkok Post**, 1 January 2000

2. *Western Australian Oil and Gas Industry*, Department of Resources Development, May 2000


6. CSIRO, as quoted by Woodside Energy Ltd

7. Andrew Barton, head of energy analysis at BP Amoco, quoted in the *Jakarta Post*, 5 July 2000


9. *Western Australian Oil and Gas Industry*, Department of Resources Development, May 2000