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HOW TO FACILITATE OR STRANGLE AN LNG PROJECT

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ABSTRACT

Natural gas is now almost universally acknowledged as a bridging fuel to a clean global energy future, providing one of the key solutions to the modern-day "energy crisis", that is, the dual challenge of energy security and climate change. With increasing frequency and with an increasing tone of concern, governments around the world are calling for international natural gas trade to be expanded.

How easy it is to seize on solutions of this type. But how much do their proponents really know about how to actually achieve them?

Proponents of renewable energy, nuclear power and clean coal are even more vocal about their respective merits. This paper leaves these competitive claims to the side and focuses only on natural gas.

The expansion of international natural gas trade is not the problem. Nor is there any problem of "peak gas". The problem is how to expand capacity: that is, production capacity, liquefaction capacity, shipping capacity, terminal capacity, regasification capacity and storage capacity. If capacity can be expanded, trade will look after itself. However, the installation of capacity requires an assurance of a future export revenue stream to justify the investment. Without the assurance of future export revenues, the idea that an LNG project can be developed as soon as reserves are established remains highly questionable.

The problem is essentially one of timing of investment in an intensely competitive market environment. In this regard, there is no project like an LNG project. Massive long-term investment is required. There is ample capital available but investors in LNG projects, like investors everywhere, are risk averse. This paper outlines what this implies for the development of an LNG project and how easy it is to strangle one to death.

No country can afford to be complacent about its LNG project development opportunities. Governmental backing for Australia's LNG projects needs to be guaranteed at an earlier stage than is presently allowed.

INDEX

1. EXPANDING ENERGY DEMAND AND FALTERING LNG PROJECTS

Not so many years ago, few energy customers wanted natural gas. Petroleum explorers that found it expressed great disappointment. Europe and North America were no strangers to gas bubbles and surplus cargoes of LNG traded for less than long-term contract prices. In Australia, the pioneering investment by Woodside Petroleum and its partners in the North West Shelf LNG project needed to be underwritten by an offtake commitment from the Western Australian State Government.

Nowadays, global energy demand has significantly expanded. It is continuing to expand at an increasing rate, driven by global economic growth, industrialisation and urbanisation, for which China must be given much of the credit.

This expanding global energy demand has brought heightened energy security worries with it, mainly in relation to oil.[1] The position is very different with natural gas: there is an abundance of gas reserves globally. [2] Proved global reserves are around 60 times the volume used each year [3] and potential reserves could last as long as 200 years. [4]

I cannot emphasise too much that natural gas is not an international commodity like oil: there is no international trading room; there is no "Henry Hub"; and it can only be traded and transported in bulk. Cross-border trade in natural gas is therefore inextricably intertwined with the requirement to instal very costly gas production, gas processing and gas transportation capacity. Substantial additional capacity is urgently needed in both exporting and importing economies and the scale of the long-term investment required to achieve this is massive. Only first-class companies have the technical and financial capacity to undertake investments of the scale and complexity required and very few of these first-class companies have the stomach for heavy front-end expenditures without the guarantee of being able to proceed.

It can be confidently said that there is no project like an LNG project. In 2006, not a single new LNG project anywhere in the world reached final investment decision. Australia has only ever developed two LNG projects and there is no certainty that more than a few others will be developed.

LNG investors look seriously at all project development risks, especially at any risk that might have an impact on the reliability of scheduled future deliveries. The development of LNG projects in Australia is in danger of faltering because their scale, their escalating cost, their technical complexity and their complex commercial characteristics, particularly their vital dependence on pre-agreed long-term contracts and their vulnerability to completion risk and completion delays, make them easy prey for a wide range of opportunists, opponents and perfectionists.

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[1] In APEC economies (which account for 58 percent of world energy demand), self-sufficiency in oil fell from 77% in 1992 to 67% in 2002. It is projected to fall to 38% in 2030. See Australian Bureau of Agricultural and Resource Economics (ABARE) and ResourcesLaw International, "Energy Security in APEC", Report to the APEC Energy Working Group, APEC Secretariat, Singapore, 2005.

[2] There is no problem of "peak gas". In 2002, APEC's self sufficiency in gas was 108%. See ABARE and ResourcesLaw International, note 1 above. Note that APEC's self sufficiency is bolstered by Russia, which holds 26.7% of world gas reserves.

[3] BP Statistical Review of World Energy, London, UK, 2006, from which most of the statistical data in this paper is sourced.

[4] International Gas Union, "Gas Prospects, Strategies and Economics", 22nd World Gas Conference, Tokyo, Japan, 2003 (Report of IGU Working Committee 9).

It is now widely understood that massive investment in new infrastructure is a prerequisite for the expansion of cross-border natural gas trade. [5]

2. THE MODERN-DAY "ENERGY CRISIS"

The modern-day "energy crisis", if that is how you can characterise the current state of affairs in the global energy market, is the dual challenge of energy security and climate change.

Before we proceed to examine the marketing and timing issues facing LNG projects, we should briefly review the international significance of natural gas in responding to this dual challenge.

(i) Energy Security

Energy security is of fundamental and increasing importance not only to individual economies but also to future relations between economies.

Although cross-border energy trade now takes place between a much larger number of sellers and buyers than ever before, the increasing dependence of China and the United States on imported oil highlights the risk for all energy importing economies of a major global oil supply disruption. If there is a major oil supply disruption anywhere in the world, it will be felt everywhere. [6]

A major oil supply disruption is not expected but, if one did occur, it would have major economic, social and environmental consequences for most energy importing economies – hence the focus on other energy supply options such as natural gas. This is a major reason why APEC has, since 1998, supported the increased utilisation of natural gas at the highest political level. [7] So now does the IEA. [8]

Energy security is very much a customer-specific challenge, depending on commercial arrangements between buyers and sellers, and requiring careful matching of the supplier's performance with the customer's agreed demand requirements. But it is also a challenge for governments, which must ensure that appropriate upstream infrastructure is in place; that there is adequate access to downstream transmission and distribution infrastructure; that stable legal and fiscal regimes are in place; and that markets are allowed to function for the benefit of all those with a legitimate stake in energy supply.

In the case of LNG, energy security concerns will ensure that buyers will continue to opt for long-term contracts.

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[5] ResourcesLaw International, "Great Expectations: Cross-Border Natural Gas Trade in APEC Economies", Report to the APEC Energy Working Group, APEC Secretariat, Singapore, November 2004.

[6] This is, incidentally, the reason why the scramble for overseas oil resources by national oil companies from China and India does not achieve energy security for the home nations, although it certainly helps to improve the aggregate level of global supply for all importing economies.

[7] Declaration of Third Meeting of APEC Energy Ministers, Okinawa, Japan, 9-10 October 1998.

[8] International Energy Agency, "Security of Gas Supply in Open Markets – LNG and Power at a Turning Point", Paris, France, 2004.

(ii) Climate Change

In addition to the risk of a major oil supply disruption, the spectre of climate change now looms large. The Prime Minister has placed climate change on the top of the agenda for the meeting of APEC Leaders this coming September.

There is little dispute about the science of climate change and the causative effects of greenhouse gas (GHG) build-up in the atmosphere. However there is considerable confusion and uncertainty over how governments will deal with the problem. It is now almost universally accepted that GHG emissions from energy production should be minimised in the interests of tempering the effects of climate change. It might be necessary to reduce GHG emissions to 40-60 percent below 1990 levels to achieve long-term climatic stability.

Increased global utilisation of natural gas will have an important part to play in reducing global emissions. Natural gas is ever-more-widely recognised as a "clean" fossil fuel. LNG project developers are required by environmental regulations in Australia to minimise GHG emissions but there is a lack of any recognised standard for doing this and there is a lack of any mechanism to reward them for the emission reductions that they may achieve. In this regard, the outcome of the Prime Minister's Task Group on Emissions Trading is awaited with great interest. [9]

(iii) A Key Solution Preferred by Governments: Natural Gas as a Bridging Fuel towards Clean Energy and Sustainability

Renewables, biofuels, nuclear power, clean coal and natural gas all have their opponents and proponents as the best solution to the modern energy crisis. All of them have different costs and different characteristics and all of them have their place in the overall scheme of things. [10] This paper makes no attempt to address their competitive claims and focuses only on natural gas. It also ignores gas-to-liquids (GTL), which is looking increasingly viable as an alternative technology in certain situations.

Governments around the world have not just recognised, but have expressed a clear preference for, natural gas as a bridging fuel to take their economies in the direction of cleaner and more sustainable energy systems for at least the next quarter century. Until the world reaches the hydrogen economy, natural gas will provide one of the key responses to the dual challenge of energy security and climate change.

3. SUPPLY-SIDE LNG COMPETITION

There are two largely discrete LNG markets in the world: the Asia-Pacific and the Atlantic. Despite present appearances and what may be heard about the surge in global demand for LNG, the supply side of the LNG industry remains intensely competitive.

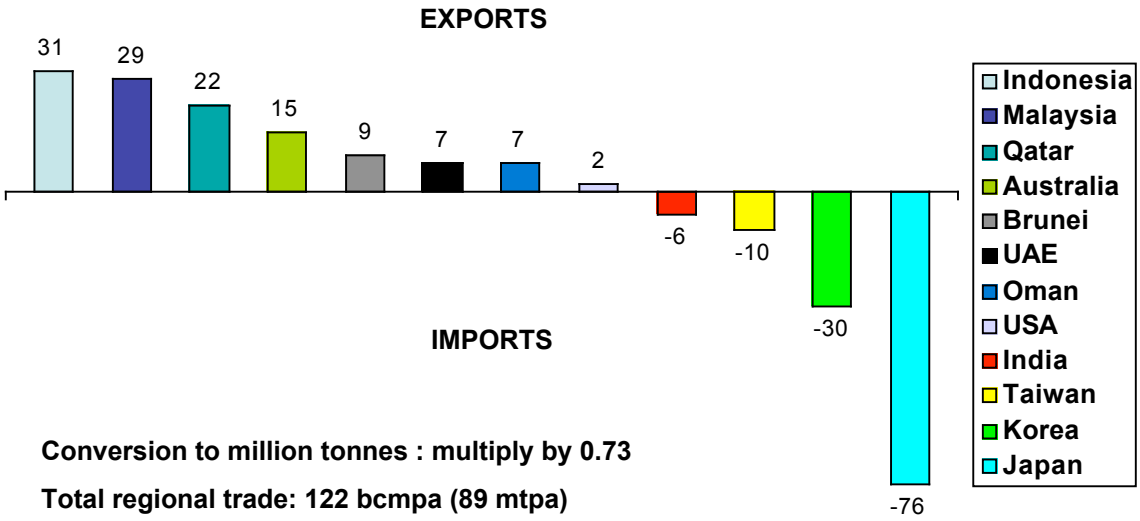
In the bar chart below, we have dissected global LNG trade flows to depict LNG trade

[9] The report is due to be presented by the Task Group to the Prime Minister by 31 May 2007. See www.emissionstrading.pmc.gov.au.

[10] *"All energy options should be kept open and no technology should be idolized or demonized … Energy source diversity is the bedrock of a robust system, even if the optimum mix will vary according to local circumstances",* Official Conclusions and Recommendations, World Energy Congress, Sydney, 2004.

flows in the Asia-Pacific market in 2005 (the latest year for which all regional data is available).

LNG Trade in the Asia-Pacific Market 2005 (bcm)



Source of data in this chart: BP Statistical Review 2006

The chart shows eight exporting economies selling to just four importers. The most significant feature of the Asia-Pacific market is its continuing heavy reliance on Japan for over 60% of total imports.

The chart does not of course include LNG trade in the Atlantic market. This explains why, looking at imports below the horizontal line, the US does not show up as an importer even though it now imports LNG from Atlantic market suppliers. Because the chart depicts 2005, China also does not show up as an importer although China has since commenced taking deliveries from its first LNG receiving terminal in Guangdong.

Looking at exports above the horizontal line, Australia can be seen fourth from the left. Indonesia (first on the left) has already been overtaken by Qatar (third from the left), which has now become the world's biggest exporter. As the chart depicts Asia-Pacific trade only, it does not show Qatar's considerable exports to the Atlantic market. The competitive threat that Qatar poses as the swing supplier to both the Asia-Pacific and Atlantic markets is easily detectable. Obviously, the chart will look very different in another five years.

Many seem to think Australia is now in a highly advantageous position to supply LNG to growing foreign markets. This is a complacent view. Potential Australian LNG projects face actual or potential competition from Qatar, Indonesia, Russia, Malaysia, the UAE, Oman, Iran, Papua New Guinea, the Philippines and

elsewhere. As things stand, ResourcesLaw is of the view that not all of the Australian projects on the drawing boards will actually be developed.

Qatar, for instance, has 10 times Australia's reserves. It already exports twice as much LNG as Australia (supplying both the Asia-Pacific and Atlantic markets) and it plans to export over 100 bcmpa by 2010, with a third of this volume going to Asian buyers. The RasGas project in Qatar recently commissioned train 5 with a capacity of 6.5 bcmpa and has commenced construction of trains 6 and 7 with a combined capacity of 21.5 bcmpa. These will be the largest LNG trains ever built and they are scheduled to come on stream in 2008 and 2009 respectively. Qatar has been helping Indonesia meet its export commitments. Qatar's only problem is distance. Companies like ExxonMobil, Shell, Total, ConocoPhillips, Mitsubishi and Marubeni have been piling into Qatar as investors.

In Indonesia, the new Tangguh LNG project in Papua is on track for completion to meet its first market delivery next year. Its initial two trains will produce 10.5 bcmpa. The Tangguh site is capable of supporting up to another six trains if reserves permit and the market demands. Tangguh and other Indonesian projects are of course aiming at the same export markets as Australia.

Russia has 20 times Australia's reserves, although most of them are in Western Siberia. Nonetheless, Russia's energy export strategy envisages Russia exporting 11.5 bcmpa of LNG into the Asia-Pacific market by 2010, 19 bcmpa by 2015 and 25 bcmpa by 2020. Russia's strategy also involves exporting another 25 bcmpa by pipeline to China and Korea by 2020, displacing LNG in the process. [11]

4. A FALSE IMPRESSION ABOUT THE GLOBAL LNG MARKET

To see the complete picture, and before we further examine Australian LNG project development issues, we need to recognise that natural gas markets are still immature. It will be decades before there will be a global LNG commodity market that resembles anything like the global oil market. [12]

[11] Vladimir Saenko, "Energy Policy in Russia and the Impact on Trade in Natural Gas", APGAS Forum 2006, Perth, Australia, 31 August and 1 September, 2006, www.apgasforum.com.

[12] As ResourcesLaw wrote in their report to APEC (footnote 5), a mature gas market, such as Japan, must be contrasted with emerging markets, such as China and India. Some emerging markets are incapable of quickly utilising large volumes of natural gas. Some do not yet have strategic energy policies to define the share that gas should take in their overall energy mix; some do not yet have market mechanisms to pursue their strategic policies; and most do not yet have the ports, receiving terminals, regasification facilities, transmission and distribution infrastructure and gasfired power stations necessary to utilise natural gas as an alternative fuel. The creation of gas markets in importing economies may be hindered by a combination of:

- political barriers
- economic limits (low standards of living)
- inter-fuel competition
- the lack of gas distribution infrastructure
- the lack of investment in new technology, such as CCGT generation
- heavy-handed regulatory regimes
- uncertainty about GST and other ad-valorem taxes that may be imposed by the importing government
- deregulation (if deregulation constrains buyers from committing to long-term offtake or supply contracts or disaggregates buyers so as to reduce their financial capacity to undertake such commitments) and
- the lack of recognition of the "environmental value" of gas.

The specific relevance of this general remark for LNG projects is that long-term supply contracts not only determine whether stranded gas resources will remain stranded but they also dictate the pace of LNG development.

China has recently been moving quickly to install new LNG receiving terminals. The first of these started operations in Guangdong in 2006 and at least seven others are under active consideration. However, China is signaling that there are limits to its preparedness to accept escalating LNG prices. On the North American West Coast, three receiving terminals have been approved or are under construction (one in Canada and two in Mexico). In the US, there are proposals for six others but public resistance to new terminals is providing a powerful counterforce to market demand.

A would-be LNG project developer must first secure a creditworthy, long-term offtaker who is ready and willing to "underpin" the project before the project scope can be finalised and before capital is expended on upstream development. Given the very large volumes of gas required to sustain an LNG project, this typically requires the offtaker to have substantial switchable base load capacity at the downstream end. The offtaker typically cannot rely on peaking power stations or a gradual building of gas reticulation systems or a gradual build-up of gas demand. Managing this build-up period is a substantial contractual challenge for all parties.

These are testing times for LNG project developers. For an LNG project to eventuate, timing is everything. With LNG, there is no such thing as a market in the conventional sense: only a contractual market for delivery of bulk cargoes. Long-term "take-or-pay" contracts have always been and will remain pivotal for LNG project development. This is the main barrier to new projects. Competition amongst LNG project developers in the Asia-Pacific region to secure long-term contracts from a limited number of LNG customers will remain intense, even though the intensity is presently diminished by a current shortfall in supply and a jump in price of surplus cargoes. This means that there is no chance of Australia developing a "merchant" LNG plant.

5. FIVE WAYS OF STRANGLING AN LNG PROJECT IN AUSTRALIA

Given the broadly supportive political environment in Australia, it would be easy to assume that, after adequate reserves are announced, it is by and large a routine technical operation to produce and deliver sufficient quantities to a liquefaction plant for export. All I have ever learned about the natural gas industry is that this is anything but routine. The geology, the physical properties of the contained gas, the production profile of each gas field, the production systems, especially those in deep water offshore, and the project-specific economics, represent a uniquely complex, technical and financial challenge.

Australia has two operating LNG Projects that are capable of further expansion: the North West Shelf project (presently being expanded to 16.3 mtpa) and the Bayu-Undan project (3.24 mtpa). Australia also has a number of new projects on the drawing boards. [13]

[13] The capacity of the proposed LNG projects on the drawing boards in Australia are:

- Gorgon: 10 mtpa
- Pluto: 6 mtpa potentially expanding to 12 mtpa
- Pilbara: 6 mtpa
- Ichthys: 7.6 mtpa potentially expanding to 11 mtpa or greater
- Browse: 7-14 mtpa
- Sunrise: 10 mtpa

Right from the beginning, the scale and cost of LNG projects puts them at a serious disadvantage. [14] Their scale and cost, and the need for very substantial front-end expenditure on feasibility studies, engineering and design, makes them giant sitting ducks for all manner of opportunists, opponents and perfectionists. Time is money and delays are costly.

It should be remembered that LNG as a fuel for power generation has to compete on price terms with alternative fuels. In this regard, coal is more competitively priced in world markets and continues to represent a competitive threat to LNG. The cleaner it gets, the more of a threat it will be.

All these factors make it easy to strangle an LNG project to death. The five main methods of strangulation are:

(i) Failing to Control Rising Costs

The most recent major challenge for LNG projects in Australia, as well as for the oil and gas industry globally, are rising costs and shortages of skills and materials. The skills and materials shortage is being partially addressed by utilising overseas fabrication facilities and importing pre-assembled modules. However, capital costs in the oil and gas sector have risen worldwide by over 50% in the last two years and by 30% in 2006 alone. [15] According to Bechtel, the cost of building LNG plants has trebled over the last 6 years.

Overcoming the blow-out in costs and the shortage of skills and materials will take time. Projects may be delayed, put on hold or even abandoned. In this environment, brownfield LNG projects that can be expanded will have an advantage.

(ii) Allowing Cycle Times and Commercial and Legal Complexity to Increase

All LNG projects entail decade-long exploration, appraisal, development and commercialisation cycles and involve exceptionally complex, multi-party commercial relationships.[16] Long-term offtakers have to be contractually matched with suppliers and it is just not feasible to ramp up new projects quickly. With the level of commercial complexity, cycle times are increasing.

Legal complexity poses a related challenge. [17] Lawyers need to have a deep

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To convert mtpa to bcmpa, multiply by 1.38.

[14] At last report, the Gorgon LNG project involved the creation of 6,000 jobs and an investment of at least $11 billion. It was also expected to generate export revenue of $2.5 billion per annum and a total of $17 billion in taxes and royalties. A final investment decision was anticipated for Gorgon in 2005 but has yet to be made. In anticipation of being able to make that decision, the project partners are continuing to incur hundreds of millions of dollars in front-end costs.

[15] Cambridge Energy Research Associates, CERA Week Conference, Houston, USA, 15 February 2007.

[16] *"LNG projects by nature are exceptionally complex, often with multiple partners and stakeholders. Only those projects with aligned partners, strong stakeholder support, and fiscal/regulatory clarity will succeed in capturing new business in an increasingly competitive and demanding marketplace,"* John Gass, Chevron Texaco Global Gas, "A Global View of the Gas World From California", GASTECH 2005, Bilbao, Spain, March 2005.

[17] In its 2005 annual report, ConocoPhillips described the legal challenge for the Qatargas 3 LNG project:

understanding of all of the strategic issues, project structuring issues, project approval processes, and contractual and financing issues. There are not many that do, which is why the leading companies choose to rely heavily on in-house legal expertise. [18]

(iii) Increasing the Risk of Project Approval Problems and Delays

I earlier emphasised the vulnerability of LNG projects to delay. ResourcesLaw believes that, in all major Australian resource development projects, there is too much scope to negotiate with governments and regulatory bodies over the terms of environmental and other project approvals. Flexibility, reasonableness and common sense are of course always appreciated. However, wide regulatory latitude in any industry gives rise to risk and uncertainty for investors. [19]

Of course, not all of the blame for project delays lies with governments. Project opportunists, opponents, environmental activists, NIMBY complainants and other perfectionists also seek to influence outcomes and have recourse to the courts if any procedural discrepancy occurs. [20]

(iv) Failing to Specify Environmental Standards

There are no internationally accepted limits, either in percentage or absolute terms, for allowable CO_2 emissions. It strikes me as not a little ironic that LNG projects, one of the key strategic options to reduce CO_2 emissions, should be impeded in Australia by uncertainty over what they are required to do. This is a "carbon penalty" that puts Australian projects at a competitive disadvantage. No one is suggesting that standards should be lowered – just that they would like to know what they are.[21]

"The Qatargas 3 liquefied natural gas (LNG) project took a giant step forward in December 2005 with the signing of definitive project agreements, including the onshore Engineering, Procurement and Construction (EPC) contract. At least 12 in-house ConocoPhillips attorneys provided their appropriately specific legal expertise as members of multidisciplinary teams involved in the successful analysis, planning, negotiation and documentation of this transaction over the course of three years.

Like most large-scale LNG projects, this project includes the development of natural gas reserves located far from the ultimate natural gas market through the application of LNG liquefaction and transportation technology.

The legal expertise required for such a project covers a wide spectrum of issues and applicable laws. In-house counsel provided tailored, real-time support on an array of legal, commercial and strategic issues. Additional specialized in-house legal experts were deployed as significant contributors in securing the $4.0 billion project financing commitments; the LNG sale and purchase agreement; the EPC contract; intellectual property protection; competition law compliance; environmental law compliance; marine transportation; regasification arrangements; natural gas marketing; and other necessary matters".

[18] Many of these issues are explained in Marisa Reuter, "Strategy Issues in Structuring and Documenting Liquefied Natural Gas Projects", Oil, Gas and Energy Law Intelligence (OGEL) Vol 4 Issue 1, May 2006.

[19] *"A common business concern with approval processes is that there is too much latitude for government agencies to make decisions that are beyond the scope of the regulations or are driven by political influence",* Productivity Commission Research Report, "Performance Benchmarking of Business Regulation", Melbourne, 19 February 2007.

[20] For the most recent example of successful environmental activism, see the Anvil Hill Mining case: Gray v. Minister for Planning [2006] NSWLEC 720.

[21] In September 2006, the APGAS Forum in Perth identified confusion and uncertainty over climate change as a major impediment to new projects, see the Official Recorder's Report, "A Destiny That Cannot Be Assumed", APGAS 2006, www.apgasforum.com.

In Western Australia, LNG projects are required to reduce emissions to the "maximum extent practicable".[22] The factors that will satisfy such a highly subjective test are both technical and economic and are a matter for negotiation on a case-by-case basis. By contrast, in Indonesia, the Tangguh LNG project was approved by environmental authorities and financed by the multilateral lending banks without being required to reduce emissions. There I understand it was accepted that natural gas produced by the project would displace coal as a fuel for power generation and that was good enough for all concerned.

Once an LNG project developer knows the extent of what is required to reduce emissions, he will seek to reduce the costs of compliance by participating in whatever opportunities may be available to create emissions reduction credits and trade them in a market. Australia is presently considering the pros and cons of introducing an emissions trading scheme. Until it does so, the regulatory risk of the imposition of emissions controls or carbon taxes will remain a concern to investors.

(v) Imposition of Non-Binding Government Policies

The latest project approval problem to emerge in Australia is the imposition of non-binding or discretionary government policies.

The WA Government's "Domgas Policy" imposes what it calls a "flexible" requirement to set aside up to 15% of offshore gas reserves, for future domestic use in the State, if a developer wishes to have access to State land for the construction of processing facilities. This has established a new precedent for an unwise type of resources populism, where a State holds LNG investors hostage until they negotiate terms that satisfy the State. To persist with the Domgas Policy is to risk undermining the trust that Australia's trading partners have in Australia as a reliable place to invest.

Investors are funny – they dislike government policies; they prefer laws because, at least with laws that are not arbitrary, they know where they stand. The first trouble with government policies is that they do not bind governments. Another trouble is that they can be changed overnight at governmental whim: today's 15% could be tomorrow's zero or 30%. Another trouble is that they can be applied indiscriminately: one company could win a deferral for five years whilst another might not.

Investors therefore don't just dislike government policies; they dislike "flexible" policies even more; and they detest policies that have retrospective effect and hold them hostage to coercive negotiations. Investors prefer the rule of law any day, whether it is a law that confers enforceable legal rights or a law that imposes enforceable legal obligations. In reality, any governmental approval system that depends on negotiating trade-offs on a case-by-case basis is not an approval system at all; it is an incitement to discriminatory treatment and corruption, although thankfully there is no sign of the latter.

6. WHAT SHOULD BE DONE?

The Australian Government, through the Department of Industry, Tourism and Resources (DITR), conducts an ongoing program of high-level bilateral consultations with Australia's major energy trading partners: China, India, Indonesia, Japan, Korea,

[22] Guidance Statement for Minimising Greenhouse Gas Emissions, WA Environmental Protection Authority, Perth WA, 14 October 2002.

Mexico, the Philippines, Taiwan and the United States. This is a very valuable and productive program for exchanging two-way information on what each side expects of each other and for establishing a common sense of purpose. The private sector is invited to participate in the program.

At the Asia-Pacific Economic Cooperation (APEC) level, Australia provides, again through DITR, the Secretariat for the APEC Energy Working Group and its offshoot the APEC Energy Business Network. Liaison with industry occurs through the Australian Energy Alliance,[23] of which APPEA is a member. The Alliance has established APGAS Ltd as a not-for-profit company to promote cross-border natural gas trade through the vehicle of the APGAS Forum.[24]

Through the LNG Action Agenda, launched in October 2000, the Commonwealth expressed its strong policy support for the development of Australia's LNG export industry. In March 2006, the Australian Resources Minister, Ian Macfarlane, announced a government / industry strategy aimed at increasing Australian LNG production to more than 50 million tonnes (69 bcm) per annum. At the 2007 APPEA conference, the Minister is to launch APPEA's Strategic Leaders Report canvassing the options that need to be considered if the wealth potential of Australia's oil and gas industry is to be unlocked.

The Commonwealth has established the Major Project Facilitation (MPF) program. Western Australia has established an Office of Development Approvals Coordination (ODAC) in the Department of Premier and Cabinet. The establishment of these Commonwealth and State project facilitation services is well-intentioned and much appreciated. However, they represent an almost-apologetic type of response. They are not good enough for the reason that the problem is more than one of governmental red tape. The substantive problems of vagueness of requirements, vagueness of standards and discretionary treatment give rise to indeterminate delays that can cause projects to be deferred indefinitely. The greatest danger is that a project will not be able to proceed at all if one of these problems creates an unaffordable obstacle. These problems are incapable of being addressed by facilitation bodies because they have no negotiating authority to deal with project developers and they have no real influence over those who do. In the meantime, Australia's LNG competitors are not exactly sitting on their hands.

The window of opportunity for Australian LNG exports will not remain open forever. Australia has a need to expand its liquefaction capacity quickly. If it succeeds, LNG exports will follow but, if it fails to expand liquefaction capacity quickly, there may be no point expanding it at all. Once present demand has been satisfied, why would anyone invest billions in excess capacity in Australia?

What therefore should Australia do?

(i) Export Hubs

Australia has a number of presently-stranded offshore gas fields that are in reasonably close proximity to one another. As has been successfully demonstrated by the Australian coal industry, LNG processing and export hubs could be established to

[23] See www.australianenergyalliance.com.au.

[24] The Official Recorder's Report of APGAS 2006, "A Destiny That Cannot Be Assumed", may be downloaded from the APGAS Forum website www.apgasforum.com.

process gas from proximate fields for export. As the market grows, these hubs could be expanded more efficiently and more cost-effectively than new greenfield projects could be developed.

Australia's export coal industry is now prospering from the 270 mtpa of multi-mine coal loading capacity that has been progressively installed along the East Coast. Shipments from these export hub facilities are currently generating export revenue for Australian producers in excess of $2 billion per month, an almost unbelievable achievement and a tribute to government and industry working collaboratively.

The NWS project has already been able to expand its original project scope with additional trains. It now processes gas under a long-term tolling arrangement with CNOOC for export to China. The recently-developed Darwin LNG project offers considerable potential for scope expansion.

If LNG export hubs are to be developed in Australia, a framework would quickly need to be put in place to facilitate the development process and to support collaborative arrangements amongst participating companies, ensuring that investors who have sunk capital into the development of the necessary infrastructure are able to recover their costs and generate an adequate rate of return on their investment via market-based tolling charges.

(ii) Franchise Agreements, Clear Development Rules, Standards and Procedures

Project approval problems in the Australian LNG sector are multijurisdictional, multidimensional and formidable, and they require an overarching, multidimensional, "best practice" response. It is in Australia's national interest to take a fresh look at the development problems in the light of the competitive dynamics in the international LNG market, rising project costs and indeterminate delays in project commencements.

A prerequisite is for everyone to have a better appreciation of the characteristics of the international LNG marketing challenge and a better appreciation of the essential role of overseas customers in LNG projects. With this international reality in mind, clear development rules, standards and procedures should be framed in order to reduce uncertainty for LNG investors, particularly uncertainties over timing. Whatever rules and standards are adopted must bind all parties: governments, industry and the community. This is what best practice requires and this is what Australia's national interest demands.

Policies or procedures that provide for discretionary treatment of project development applications in any industry should be urgently reviewed and, if necessary, repealed and replaced by clear and legally binding rules or, if the rules cannot be stipulated in advance, by transparent and efficient conflict-resolution procedures. If an official is given the right to give or withhold a project approval, the process of doing so must be transparent, and timeliness, reasonableness and consistency must be observed.

For nationally-important LNG export projects that are to rely on production from offshore natural gas reserves in Commonwealth waters, there is a need for a single legal mechanism to regulate all aspects of project development at the earliest possible stage. There is a strong case for the use of joint Commonwealth / State "franchise agreements" to implement these vital export projects. Amendments to the Petroleum (Submerged Lands) Act 1967 (Commonwealth) could if necessary be considered.

LNG investors must be given a guarantee at the earliest possible stage that their project can go ahead subject to compliance with appropriate and ascertainable environmental and other standards. Conflicts over unresolved issues should be referred to an arbitrator with a mandate for speedy resolution. [25]

(iii) International Public / Private Collaboration through APGAS

Greater collaboration between exporting and importing governments is also necessary. There has been insufficient understanding by domestic policymakers of issues outside their immediate jurisdiction and control. Therefore there has been little synchrony between the policies of exporting countries and those of importing economies. This needs to change and the dots need to be connected.

For this reason, in 2004, the APEC Energy Working Group authorised the establishment of the APEC Gas Forum (APGAS).[26] APGAS is a type of intergovernmental public / private partnership. APGAS was unanimously endorsed by APEC Energy Ministers when they met last year in Korea.

Governments and industry around the Asia-Pacific region are looking to APGAS to facilitate resolution of many of the issues of public and environmental concern that are impeding regional LNG trade and investment. There is much to be done and APGAS needs to be strongly supported by all stakeholders.

(iv) Transparency and Public Education

There is too much talk of Australia as an "energy superpower" by people who should know better. It is misleading to the public. The public does not well understand the local and global economic, social and environmental implications of energy production and use, especially the role that LNG has as a bridge to a cleaner, more secure, global energy future and the barriers that stand in the way.

The public will not support what it does not understand. It is insufficient for APPEA and the leading industry players to know what is best (for example, that LNG is the cleanest of the fossil fuels, that it is a very safe resource, and is a key solution to supply/demand imbalances in consumer economies) if the public does not hold the same view.

In order to facilitate Australian LNG projects, there must be a proactive process of public education in order to build public trust. The process of public education will be slow but greater efforts need to be made.

[25] The resolution of conflicts over project development issues can be achieved by land-use planning systems in which land is zoned to permit specified uses and developers have legal rights to apply for development approval and refer disputed conditions to a court for resolution. The rights under such systems are "bankable".

[26] The first two APGAS Forums were held in Perth, Australia in 2005 and 2006. The third will be held in San Diego, California, USA on 17/18 September 2007. The official reports of the first two forums may be downloaded from www.apgasforum.com.

(v) Vertical Integration

The LNG industry must adapt as fast as it can to conditions as it finds them. It is doing this mainly by vertical integration as a hedge against the risk of disruption to supply and as a technique to accelerate the pace of new project development and to reduce transaction costs. This trend towards vertical integration is already evident in four aspects:

- the dominant aspect is that downstream customers in the importing economies are participating in upstream resource development in the exporting economies
- upstream gas producers are participating in the operation and ownership of receiving terminals in the importing economies
- some large suppliers have started to build portfolios that will, as cross-border markets continue to mature, allow them to become "swing producers" and transport arbitrageurs and
- some of the oil and gas majors are attempting to become "aggregators".

At the same time, these structural changes are exacerbating the commercial and legal complexity of projects.

(vi) Project Management

LNG project developers need to be ready to adapt quickly to events as they unfold and in order to avoid jeopardizing project completion milestones and loan approval conditions.

In addition to pursuing best practice in everything they do, LNG project developers need to employ disciplined and sophisticated project management systems.

7. MAIN CONCLUSION – GOVERNMENTAL BACKING FOR OFFSHORE LNG PROJECTS MUST BE GUARANTEED AT THE EARLIEST POSSIBLE STAGE

The LNG market was brought into being as a 20th century response to the need to cater for increasing global energy demand. The LNG market is almost exclusively a construct of bilateral international contracts, facilitated by a total freedom from international rules. However, LNG trade is a lifetime captive of investors in production capacity, liquefaction capacity, shipping capacity, terminal capacity, regasification capacity and storage capacity. For their part, LNG investors depend on bankers – who in turn depend on LNG customers to provide the assurance of future project revenues.

The LNG industry is a high-stakes, high-risk and long-term business and it is intensely competitive. The high risks of investing in upstream LNG projects are presently being obscured by the recent surge in demand for LNG, by the current shortage of production capacity and by the currently high spot prices being paid for surplus LNG cargoes. This has given rise to the false impression that there is a global LNG commodity market into which any well-intentioned discoverer of gas resources can easily tap and that Australia is automatically about to become an LNG superpower, or even a dominant supplier.

LNG projects represent national wealth-creation mechanisms of the highest order and they offer global greenhouse gas emission reduction benefits of value to the entire world. They are a bridge to a cleaner global energy future. No country can afford to be complacent about them and LNG project development opportunities require to be nurtured with much greater care.

The loss of any LNG project development opportunity by Australia to competing exporters such as Qatar could prolong indefinitely the stranding of important national assets. We owe it to ourselves to ensure this does not happen.

With LNG project development, timing is everything. Domestic politics, a lack of appreciation of the pivotal role of long-term relationships with reliable customers, and uncertainty over environmental and project approval standards, are unnecessarily impeding the massive long-term investments that are required to expand Australian LNG export capacity.

LNG projects are not a licence to print money - they are easy prey for opportunists, opponents and perfectionists and carry the risk of very costly delays or abandonment if court action is initiated. These impediments, uncertainties and risks can easily strangle an LNG project to death.

Investors in LNG projects are looking for more than just a "fair go" or the right to negotiate – the very high front-end costs warrant more than that. A legally enforceable right to develop a project is what they require before they can be expected to expend hundreds of millions of dollars in front-end costs. In Australia's national interest, governments must provide a guarantee at the earliest possible stage that qualifying offshore LNG projects can go ahead, reducing front-end risk and accelerating project development. A legislative solution to achieve this may need to be considered.

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