



Oil, Gas & Energy Law Intelligence

MECHANISMS FOR EXPANSION OF CROSS-BORDER NATURAL GAS TRADE

Robert Pritchard
ResourcesLaw International

In Santiago, Chile on 21 November 2004, Asia-Pacific Economic Cooperation (APEC) Leaders reiterated their endorsement of the APEC energy supply initiative. The expansion of cross-border natural gas trade is a key component of this initiative.

Cross-border natural gas trade is however inextricably intertwined with the requirement of investment on a major scale. Without massive investment, cross-border natural gas trade cannot expand on the scale necessary to enhance global energy security.

Capital in the order of US\$30 billion per annum needs to be mobilised and invested in the global natural gas sector between now and 2025. Around \$25 billion per annum is required for infrastructure and \$5 billion per annum for exploration and gas field development.

In the APEC region alone, some US\$10-15 billion per annum is needed. Although this is a major commercial opportunity for investors, it poses a development challenge of unprecedented magnitude. Large natural gas projects have decade-long exploration, appraisal and development cycles. It is simply not feasible to ramp up these projects quickly to meet either a shortfall in supply or an increase in demand.

In January 2004, ResourcesLaw International was appointed by APEC to undertake a study of best practice in cross-border interconnection of natural gas in APEC member economies, with the aim of accelerating APEC cross-border natural gas trade.¹ The key findings are set out in the box.

Three APEC workshops were held to review a framework paper with a cross-section of government officials and industry participants.² Between the first and second workshops, APEC Energy Ministers met in the Philippines and resolved that APEC

¹ The full results of the study have now been published: ResourcesLaw International, "Great Expectations: Cross-Border Natural Gas Trade in APEC Economies", Report to the APEC Energy Working Group, APEC Secretariat, Singapore, November 2004 ("the APEC Report").

² The first workshop, focused on LNG trade into the West Coast of the United States, was organized by the USDOE and held in San Francisco, California, USA on 29-30 April 2004. A second, also on LNG trade, was organized by ResourcesLaw and held in Tokyo, Japan on 16-17 June 2004. The third workshop, on the Trans-ASEAN Gas Pipeline, was organized by ResourcesLaw and held in Singapore on 12-13 August 2004. Case studies based on all three workshops are contained in the APEC report.

economies should move towards best practice in the development of LNG trade.³

KEY FINDINGS OF THE APEC GAS STUDY

- Globally, there are great expectations of natural gas as the preferred “swing fuel” for the energy industry.
- Greater use of natural gas is supported by APEC at the highest political level as one of the solutions to global energy insecurity.
- Greater use of natural gas is also supported by APEC as a key strategy in delivering a sustainable global economy and a sustainable global environment.
- APEC economies possess abundant stranded natural gas resources representing huge export potential. By 2025, the value to APEC exporting economies of this additional volume of trade at current prices should exceed \$100 billion per annum.
- However, development of global gas resources will require an expenditure of US\$30 billion per annum. This is a major bottleneck for cross-border natural gas trade.
- Domestic gas markets in most APEC importing economies are immature and require development. This is another major bottleneck for cross-border natural gas trade.
- Safety fears have been expressed about the siting of additional liquefied natural gas (LNG) import terminals. There is a need to educate and inform communities of the outstanding 40-year safety record of LNG import terminals.
- The great expectations of natural gas will not be fully realised unless there is collaboration amongst governments, investors and communities in developing and operating natural gas supply chains. For the APEC region, a collaborative gas forum has been recommended for this purpose.
- The goal of energy sustainability must be the unifying theme for the pursuit of APEC’s cross-border natural gas strategy.

APEC Energy Consumption

APEC economies currently account for around 60 percent of world energy demand. The APEC region overall is a net energy importer, meaning that aggregate annual consumption of energy exceeds annual domestic production, with the balance imported from third-party economies. Energy imports to APEC economies must double over the next 25 years if indigenous (or “within economy”) supply is to keep pace with expanding energy demand driven by economic growth, industrialisation and urbanisation.

³ The APEC LNG trade best practice principles were drafted at the San Francisco workshop and were tabled at the 6th meeting of APEC Energy Ministers in Manila, Philippines on 10 June 2004. The principles are set out in full in the APEC report.

Changes in Specific Energy Dependencies

At a global level, most economies now depend on the efficient functioning of an open global trading system for their energy supplies. They are especially dependent, directly or indirectly, on a secure supply of oil from exporters in the Middle East.

Rising global oil prices are an indicator of an increasingly narrow gap between supply and demand and of an increasing mismatch between points of production and centres of demand. Since the 1973 Arab embargo on the supply of oil to the United States, the major focus of global attention has continued to be on the general dependence of all oil importing economies on exports of oil from the Middle East. This has distracted attention from some of the heightened energy dependencies of regions and individual economies. These include:

- Japan's continuing dependence on imports for virtually all of its energy supplies
- Europe's heightened dependence on its largest supplier (Russia) for ever-increasing supplies of natural gas
- Indonesia and Australia having shifted from being oil exporters to net oil importers
- China's recent rapidly increasing dependence on imports of oil and gas, which are expected by 2020 to grow to 60 percent of China's needs, to fuel its economic expansion and
- the United States' heightened dependence on imports of oil and gas, as its domestic production of both of these energy forms has failed to keep pace with demand.

Global Energy Security

Although cross-border energy trade takes place today between a much larger number of sellers and buyers than ever before, the above energy dependencies highlight the risk for energy importing economies of a major global oil supply disruption. A major supply disruption is not predicted to occur but, if one did occur, it could have major economic, social and environmental consequences for most energy importing economies – hence the search for other energy supply options such as natural gas.

This is why increased utilisation of natural gas is supported by APEC at the highest political level.

The contemporary quandary about global energy security involves two main elements: one is the "peak oil debate" that we constantly read about in the daily media: the question whether the energy resources are adequate ("is the oil/gas running out?"). This is in our opinion a peripheral issue. The fundamental issue is the barely-appreciated question of whether there is sufficient energy infrastructure to reliably handle the volumes of energy that must be produced and transported across national borders. Then there is the question whether this infrastructure is secure against natural disasters and sabotage.

Global Climate Change

On top of questions of the adequacy of energy resources, the risk of energy supply disruption and energy transportation capacity, there also now looms the spectre of global climate change.

The now almost-universally accepted wisdom is that greenhouse gas (GHG) emissions from energy production must be minimised in the interests of tempering the effects of the widely-feared global phenomenon of climate change. Many now claim there is a need to reduce GHG emissions to 40-60 percent below 1990 levels to achieve long-term climatic stability at 450 ppm of atmospheric carbon, with a two-degree temperature rise. Irrespective, natural gas offers the lowest GHG emissions of any fossil fuel and the acceleration of cross-border natural gas trade is a key strategy in making progress towards sustainability of the global economy and the global environment.

Nuclear energy generation and new renewable energy technologies (including wind and solar power) may also play an increasingly significant part in reducing GHG emissions. However, renewable technologies, because they are coming off a very low base and are currently available in only small-scale units, may be hard pressed to practically and commercially meet global demand growth.

Natural Gas – The “Swing Fuel” Towards Sustainability

The world has an abundance of resources of natural gas. These resources are adequate for at least the next 50 years, perhaps for as long as 200, at current levels of consumption. Many of these resources are, however, “stranded” in the sense that they are isolated from markets and cannot be taken to markets without installing very costly transportation channels. The two main transportation channels are currently gas pipelines and shipment by special tankers as liquefied natural gas (LNG).

Taking into account all of the economic, energy security and environmental implications of energy production and utilisation, policymakers have expressed a preference for natural gas as the “swing fuel” to lead the world in the direction of more sustainable energy systems for at least the next quarter century, eventually bridging the way to a hydrogen economy in around 50 years from now.

Market Forces Alone Are Not Enough

Assuming adequate transportation infrastructure can be installed to enable exports of natural gas to reach importing economies, many APEC domestic gas markets are too immature at the present time to utilise large additional volumes. Long build-up periods pose huge challenges for gas sellers.

Gas markets, like electricity markets, do not automatically happen – they need to be created and they need very substantial investment to underpin them. Conducive regulatory frameworks are required for this purpose.

The Missing Link

In the modern communications age, an abundance of indiscriminate and extravagant information is circulating about the energy industry in general and about the natural gas industry in particular. As well, there are conferences and information-peddlers everywhere. Still, many communities do not understand the economic, social and

environmental implications of energy production and use. These communities are unlikely to trust what they do not understand.

There is no need for yet another IGO or for additional levels of bureaucracy. There must, however, be proactive and collaborative involvement by governments, investors and communities in facilitating cross-border natural gas supply chains and in fostering conducive investment environments.

It is insufficiently appreciated that the essential infrastructure for cross-border energy trade and investment includes a range of “soft infrastructure”: policies, laws, rules, regulations, codes, principles, precedents, practices and customs, not to mention the good old-fashioned virtues of trust and respect for other people and cultures. Furthermore, all of these matters are inseparable from politics.⁴

In my view, there is definitely a missing link ... the dots need to be connected by a process of best practice. In pursuing this challenge, the unifying theme must be the goal of energy sustainability.

Overcoming all of the trade, investment and information challenges in the natural gas sector in a timely manner requires proactive and collaborative involvement by governments, investors and communities in developing best practice to facilitate the development of natural gas supply chains. In pursuing this, transparency is an essential ongoing requirement.

Natural gas is not a commodity like oil. Best practice in cross-border natural gas trade must therefore recognize the importance of the “soft infrastructure” of global policies, politics, norms, customs and trust. None of this is straightforward because many of the issues overlap with each other.

In a dynamic, open global economy, there are indistinct boundaries, rights and responsibilities. As well, different behaviours and behavioural expectations are frequently encountered. Both multi-stakeholder and individual project solutions must be explored and developed in a transparent and open manner.

The APEC report suggests that best practice in cross-border natural gas trade be approached at three complementary levels:

- the **international level** – there is a need for a collaborative forum in which all key stakeholders may be engaged;
- the **individual economy level** – in both exporting and importing economies, investments must be facilitated; and, in importing economies, an “industry vision”

⁴ As the Secretary-General of the Energy Charter Secretariat recently reminded the energy industry: “It is perhaps not realistic to expect that the operation of the energy business, not only in transition countries but across the world, will ever be dissociated from politics. Indeed, there are strong reasons to suppose that the interrelation between energy policy and foreign and security policy will become even closer in the years ahead. But what is realistic to imagine is that governments, of both producer, transit and consumer countries, can recognize their complementary interests in the energy sector and come together to agree some common “rules of the game”. By establishing such rules, and committing themselves to observe them in practice, governments can help substantially to mitigate the non-commercial risks associated with investments in major energy projects involving cross-border transportation”, Kemper, R, 2004, “Meeting the Challenge of Trans-Border Supply: The Role of Multiateral Investments”, 19th World Energy Congress, Sydney, Australia.

must be devised, markets must be created and regulatory reform must be implemented; and

- the **individual project** level – at this level, there is a need for a “total package project management” approach.

How the three best practice levels would complement each other in the APEC region is illustrated in the attached table. The goal of energy sustainability must be the unifying theme. A collaborative Asia-Pacific gas forum could do much to maintain the energy balance of the APEC region.

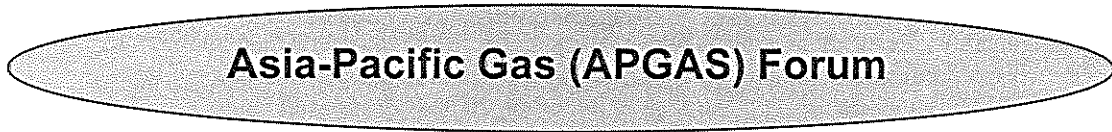
November, 2004

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Three Recommended Complementary Levels of Best Practice in Cross-Border Interconnection of Natural Gas in APEC

1. INTERNATIONAL LEVEL

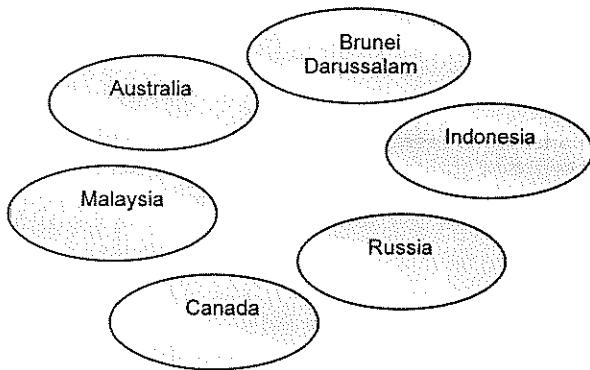
Collaboration and engagement of stakeholders on sustainability goals, environmental standards, natural gas supply chains, cross-border trade and investment facilitation (including gas supply to developing economies), transparent trade, investment and environmental regimes, project financing and provision of all other elements of “soft infrastructure” – involving both multilateral and bilateral initiatives



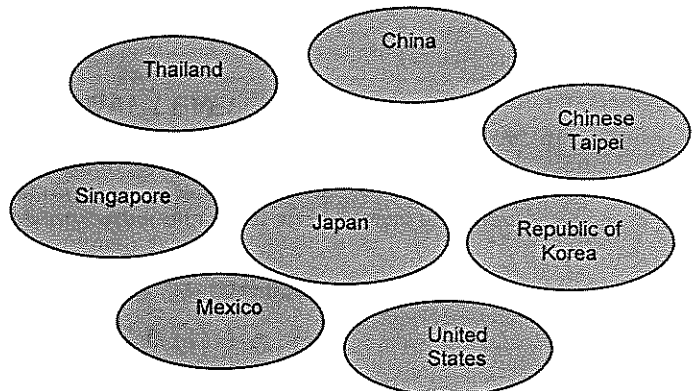
2. INDIVIDUAL ECONOMY LEVEL

Trade and investment facilitation, financing facilitation, “industry vision”, market creation, policy and regulatory harmonization, environmental enforcement and transparency

MAIN APEC GAS EXPORTING ECONOMIES



MAIN APEC GAS IMPORTING ECONOMIES



3. INDIVIDUAL PROJECT LEVEL

“Total package project management” of all environmental, commercial and project financing issues, joint venture governance and alignment of interests, upstream and downstream participation by buyers and sellers, management of multiple buyer and seller relations, transparency and contractual best practice

