Australian Gas Industry Trust

Overseas Study Tour 2008 – Europe
Report by Study Tour Recipients

1 Introduction

At the start of October 2008, five representatives from across the gas supply value chain participated in a study tour to Europe provided by the Australian Gas Industry Trust. The study tour provided an opportunity for the participants to learn about the European Gas Market and they were introduced to gas industry experts, creating valuable networking opportunities in Australia and Europe.

The award recipients were:

- Mark Abbotsford: Woodside Energy;
- Rebecca May: APA Group;
- Stephen Mudge: Epic Energy;
- James Plumb: Carter Newell Lawyers; and
- Shelley Reed: Australian Power & Gas.

Study Tour Participants from left: Rebecca May, Shelley Reed, James Plumb, Mark Abbotsford and Stephen Mudge celebrating Rebecca's birthday at London Kings Cross Station while awaiting the Eurostar to Paris.

The group's interests included, but were not limited to:

- The future role of Liquefied Natural Gas (LNG) in international gas markets;
- The role of gas in renewable energy and carbon trading;
- Transportation of gas across European Union, understanding the range of regulations, the drivers for investment in pipelines and gas infrastructure;
- How reliability of supply is managed in a regulated environment; and
- With the advent of the Short Term Trading Market (STTM) in South Australia and NSW, learning about the spot market convergence that occurred in Europe.

In addition to visiting major companies across the gas supply chain, the group attended a conference covering Energy Policy, Gas in the Next Five Years and Investment Opportunities and Challenges. Companies/organisations visited included:

London	ICIS Heren IGEM Conference National Grid
Paris	International Energy Agency (IEA) Gaselys
Belgium	Eurogas Fluxys
Holland	NMa NUON Gasuine

Table 1 Tour location and organisations visited

Europe has one of the world's largest gas markets. (Other large markets are North America and the Former Soviet Union.) The major European gas consuming countries are the United Kingdom, Germany, Italy, Netherlands and France. Together these countries account for just over 70% of European demand.

Gas plays a major role in the supply of energy in the European Energy Market. There are several key issues facing the European gas market that were highlighted during our visit, however there were two recurring issues across all gas market participants including:

- Security of Supply;
- Unbundling – the separation of the retail businesses from pipeline businesses;
- Liquefied Natural Gas and the increasing role it will play in meeting peak demand;
- Rising natural gas prices;
- Liquidity of the trading hubs;
- Gas Quality; and
- Gas Fired Power Generation.

2 European Gas Supply Chain

The European Gas Supply Chain, as a consequence of deregulation, appears as:

Production	**Competitive**
Trading	**Competitive**
Transmission	**Regulated Monopolies**
Distribution	**Regulated Monopolies**
Supply	**Competitive**

3 Production and Trading

Supply and Demand in Europe

The European gas market has historically been underpinned by a few key pillars of supply:

- indigenous production predominantly from the UK and Netherlands;
- pipeline supplies from principally Russia and Norway; and
- more recently LNG from key Atlantic basin suppliers including Algeria and Nigeria.

Today the environment is changing – UK gas supplies are in natural decline and Dutch supplies have reached plateau making Europe even more reliant upon pipeline gas supplies from

Russia's massive reserves (along with Norway and Algeria) and LNG in a rapidly globalising market. This is evidenced in the supply and demand balance illustrated below, with European demand growing, whilst supply is declining.

	2003	2004	2005	2006	2007
Consumption (BCM)					
UK	100	102	98	94	96
Germany	101	100	102	100	97
Italy	77	80	86	84	85
Netherlands	50	51	49	48	55
France	45	46	47	44	45
Norway	7	6	7	6	11
Spain	23	27	32	33	34
Turkey	21	22	27	31	37
Others	96	97	96	97	79
Total	**520**	**531**	**544**	**537**	**539**
Production (BCM)					
UK	108	101	92	83	76
Norway	77	82	89	92	96
Netherlands	73	86	79	78	75
Others (Mainly Italy, Germany, Denmark)	57	57	54	52	47
Total	**315**	**326**	**314**	**305**	**294**
Imports (BCM)					
Former Soviet Union	122	128	129	131	132
Algeria	57	55	59	57	52
Others (mainly LNG)	25	27	42	54	55
Total	**204**	**210**	**230**	**242**	**239**

Table 2 Natural Gas Supply and Demand Balance in Europe
Source: Gaselys Presentation October 2008

Reduced diversity in supply sources is creating concern amongst end users and regulators in Europe. Such concerns range from short-term issues around swing and storage to longer term concerns about energy security in an environment that has recently seen the potential for energy supplies to be used as a political tool.

Some could argue the harsh reality for Europe is gas supply in a free market should simply be a function of a willingness to pay. This may be the case in many other commodity markets, however unlike many other commodities no single global gas reference price exists. Significant regional price spreads have developed and continue to exist.

The chart below illustrates the price spread between the US (Henry Hub) and the UK (NBP) both historically and in the future. At face value there is an excellent trading opportunity available to take a long position in US gas and a short position in UK gas to deliver a healthy profit (net of transport and other transaction costs). The limitation is physical – such a spread can't be traded away due to constraints in swinging gas between markets. Whilst LNG can act as swing between markets it doesn't currently represent a large enough supply source to do anything other than reduce this spread.

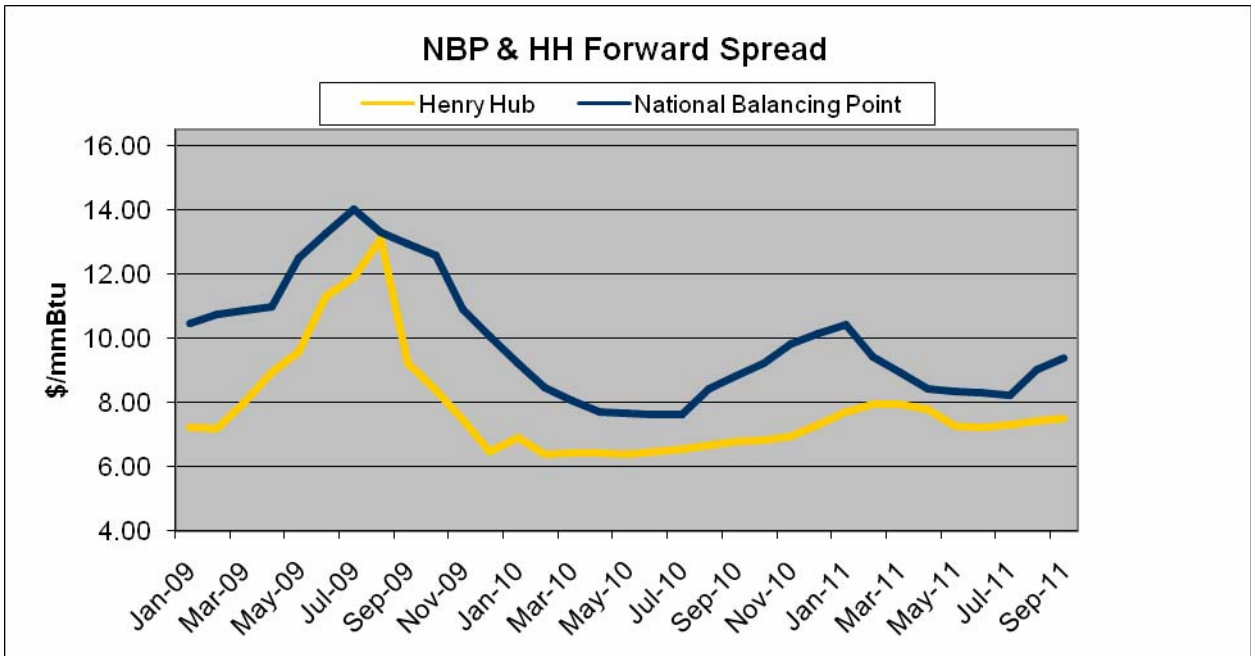

Figure 1: Price spread between UK and US Hubs

Given physical spreads will continue whilst constraints (be that supply or infrastructure) exist it should not be unexpected that suppliers will try and generate optionality within their own supply portfolios such that they can target the highest priced markets. Russia's and Norway's recent entry in the LNG marketplace and aggressive plans for expansion are not unexpected outcomes. In fact, the natural equilibrium that should develop is Russian (Atlantic) and Norwegian LNG all finding a home in Europe. The key issue for Europe is making sure the pathway to such equilibrium occurs seamlessly.

This in itself creates a policy dilemma for Europe – at present commercial drivers will not deliver significant LNG regasification capacity due to strong price signals in the far east, yet regasification capacity itself is one of the key components in ensuring Europe has a link to the global market which creates a price ceiling or sorts and provides a level of comfort in energy security. Therefore a key strategy for security of supply within Europe is expanding LNG regasification capacity which in turn could itself allow more active management of indigenous supplies. Given commercial realities this is likely to require a combined approach from both government and end users.

LNG is playing an ever increasing role in meeting the flexible winter demand requirements across Europe. Imports will constitute more than half of total supplies by 2030.

Throughout Europe there are a number of LNG terminals being built or planned to be built in order to meet the increased demand requirements. There are indications of project delays across the industry caused by shortage of skilled labour and high material and engineering costs.

4 Gas Storage

Until recently, gas storage has not been widespread in the UK and there is currently considerable new investment in gas storage throughout both the UK and Europe. Historically, a majority of the flexibility that is required to meet gas demand in these markets has been met through the local production facilities. However, with these fields in decline, some of this flexibility is lost and it means that gas is increasingly being sourced from much greater distances such as Russia. Given the large scale of the new pipeline infrastructure required to transport this gas to market, those pipelines are expected to operate at much higher utilization rates and will therefore only provide limited flexibility to the market, and will not be able to replace the flexibility that was provided by the indigenous fields. LNG is expected to provide some peak flexibility, however it is not expected to provide the seasonal flexibility that will be required. As a result of these factors there is a strong push to develop additional storage facilities throughout the EU. Current EU gas storage volume is expected to double through to 2025 to be in excess of 120 bcm.

However, the landscape and geography of some countries, such as the UK, gives them limited capability for storage. Nevertheless, there are currently a number of storage projects underway including the Stublach storage facility being developed by GDF Storage near Northwich in the UK. This facility will be a salt cavern storage facility which will have an ultimate working gas capacity of up to 400Mm^3 at an approximate cost of £350M.

In the Netherlands, gas storage is also being built in the form of salt caverns, not far from the production fields in Groningen. The study tour group was provided the opportunity to visit this facility, known as Zuidwending. The Zuidwending salt cavern facility is currently being constructed in co-operation between the major retailer (NUON) and the transmission system owner (Gasunie). Whilst both parties require the storage to provide flexible products to third parties, they also have differing objectives behind the caverns, with NUON wanting to optimise its trading portfolio and Gasunie requiring it for grid balancing to meet the requirements of legislation. The caverns are being constructed in duplicate, each party having their own caverns and processing facilities, with the only crossover being the compression

facilities. The facility will initially contain 4 caverns with a working gas volume of approximately 7.5PJ and an ability to inject gas at a rate of ~37 TJ/hour and withdrawal at a rate of approximately 59 TJ/hour

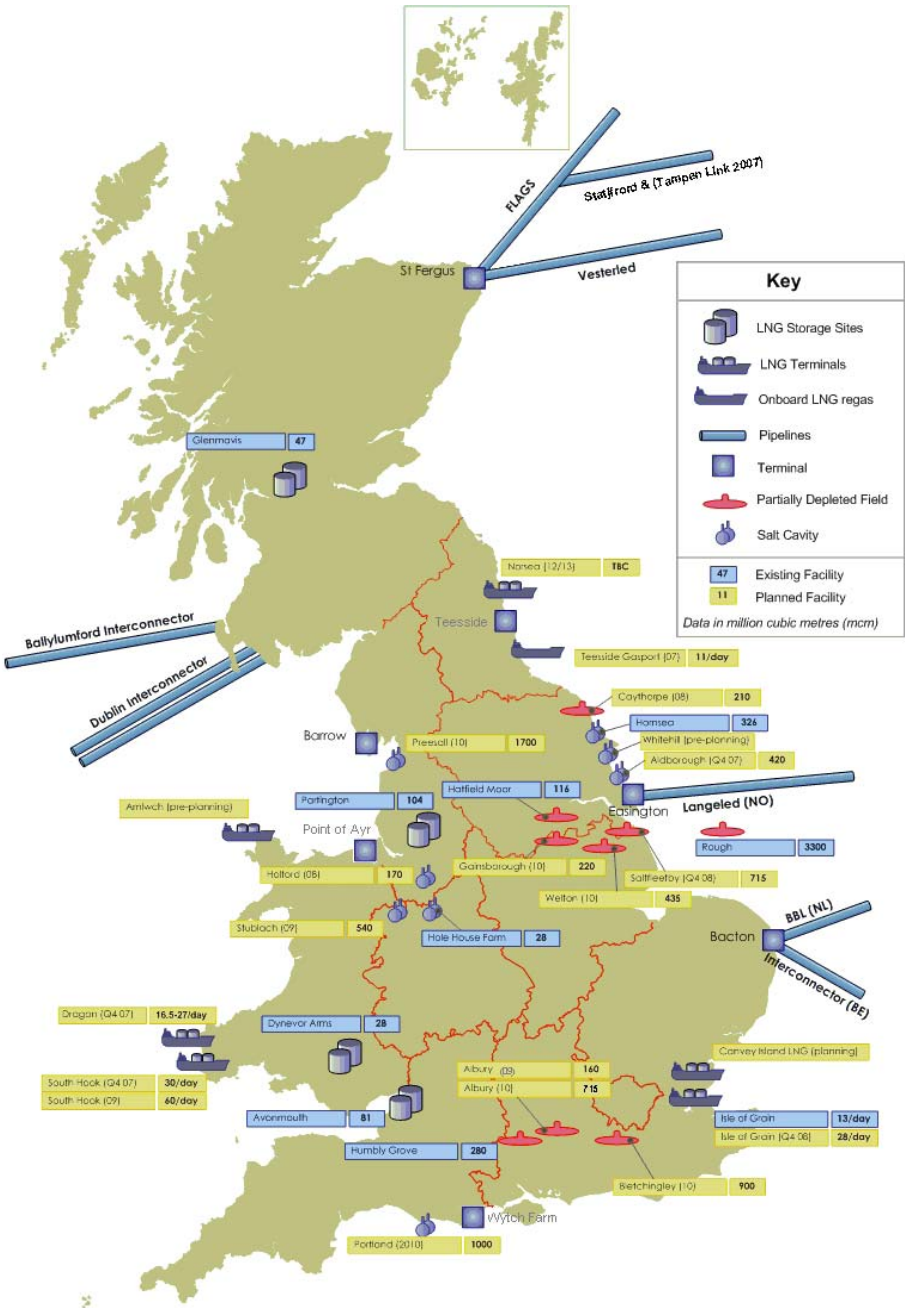

Figure 2 Map of current and planned gas import and storage infrastructure projects

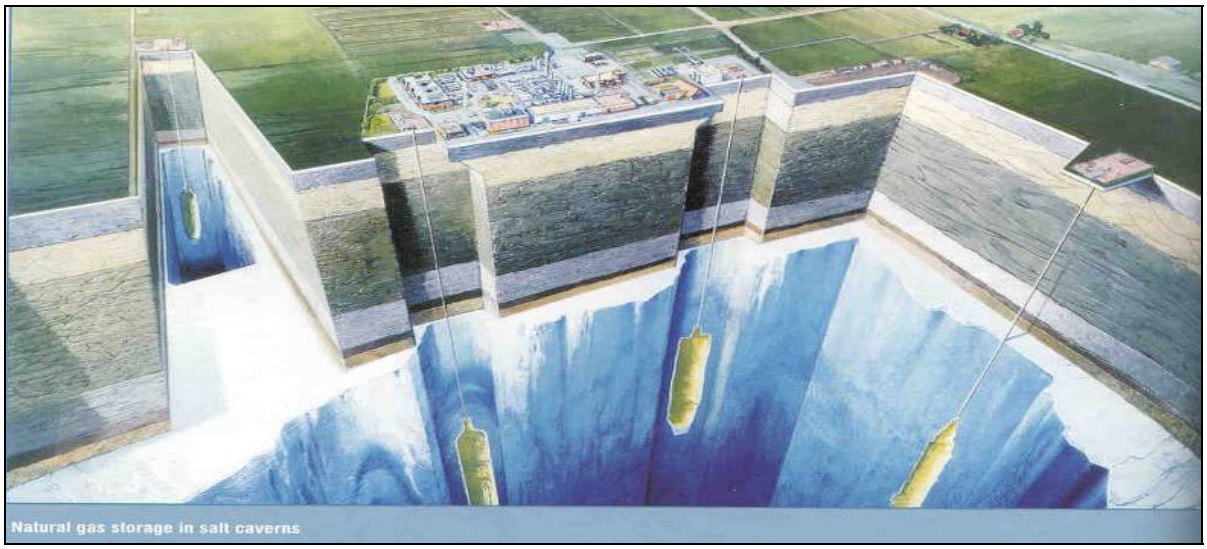

Figure 3 Zuidwending Salt Cavern
Source: Gasunie Presentation

5 Liquidity of the Trading Hubs

Trading at the hubs occurs for gas commodity only. Previously the UK National Balancing Point (NBP) and Zeebrugge Hub in Belgium were the key trading hubs that had sufficient liquidity to generate trading capability.

Over recent years, the Dutch Title Transfer Facility (TTF) has become more liquid. The TTF is a virtual market place that offers market parties the opportunity to transfer gas that is already present in the transmission system to another party, thereby promoting gas trading. The TTF can serve as a virtual entry point of a shipper or trader who buys gas on the TTF, or as a virtual exit point in the portfolio of a shipper or trader who sells gas on the TTF. Via a gas exchange a shipper or trader can buy gas or offer it for sale anonymously on the TTF. The gas exchange operator is responsible for bringing together the gas required or being offered for sale and for the financial transaction. The tariff structure, including imbalance charges, allocation methodology and the balancing regime play a part in the increased liquidity of the TTF.

In the year ending 2007, approximately 7.5 billion m^3 net gas was supplied by shippers to the TTF. The traded volume stood at 29.5 billion m^3. This equates to a churn rate of just over 3.8. Every day more than 50 active traders, including a number of banks, transfer gas to each other on the TTF on the basis of short and long term contracts.

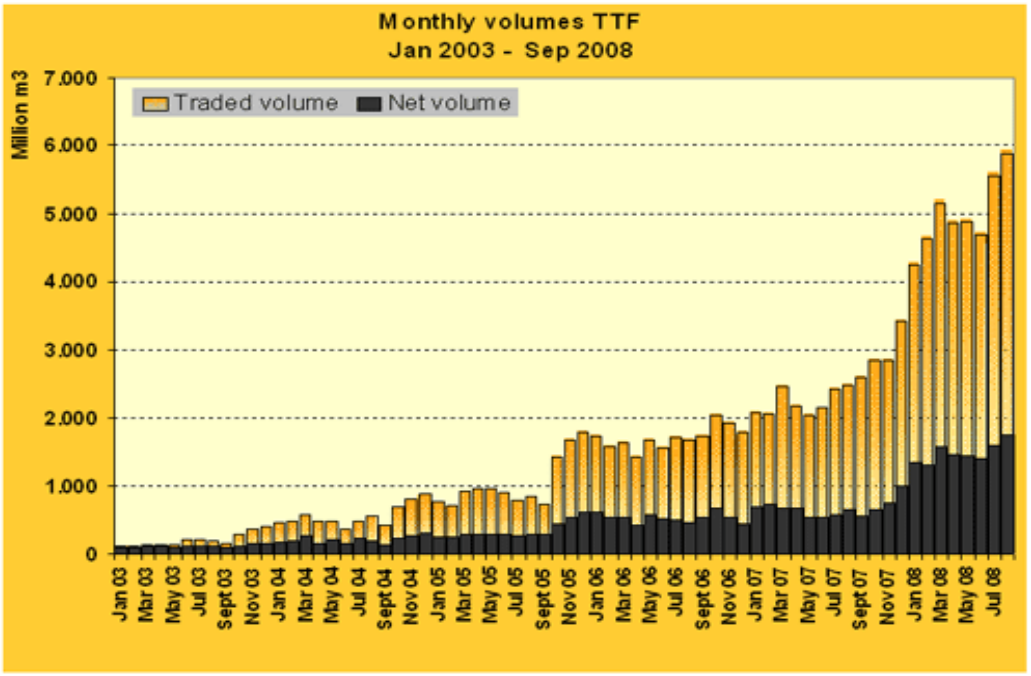

Figure 4 TTF Development

Source: Gasunie Presentation

The German trading hubs, the BEB and EGT are fast becoming liquid markets as well. The completion of the Nord Stream pipeline from Russia will assist in the liquidity of these trading hubs. As the markets continue to develop and the transport of gas across European nations increases, this liquidity too will increase.

Gasunie in the Netherlands is also looking to introduce a cross border day-ahead capacity booking platform, called EUCABO. EUCABO enables contracting of combined cross-border day-ahead capacities between the transmission systems of the Dutch Gas Transport Services B.V. (GTS) and the German Gasunie Deutschland Transport Services GmbH (GUD) for high and low calorific gas at the interconnection point Oude Statenzijl. With one single request, shippers can contract transmission capacity with GTS and GUD on both sides of the border. GTS and GUD support the development towards one integrated European gas market. EUCABO contributes to this development towards one integrated European gas market by improving the availability of short term combined cross-border capacity between adjacent network operators.

6 Gas Quality

Gas quality issues across Europe are dominated by the significant variance between field productions, particularly the calorific value. As gas can be readily transported across the European Union, it must comply with the gas quality specifications in each jurisdiction so as to meet pipeline transportation concerns. Gas quality is key to improving the operation and efficiency of the European gas markets.

For example, in the Netherlands the production fields have gas with specifications of low calorific values. However with the decline of the production fields, the Netherlands are importing high calorific gas, requiring quality conversion. Nitrogen is injected at certain points of the transmission network to bring high calorific gas to the right quality. As the domestic fields continue to decline, the Netherlands will require continued investment in the quality conversion capability.

Figure 5 Source of Liquid Nitrogen for Gas Conversion

7 Transmission Pipelines

Europe has a vast network of transmission pipelines that enable transport not only within each country but across the EU.

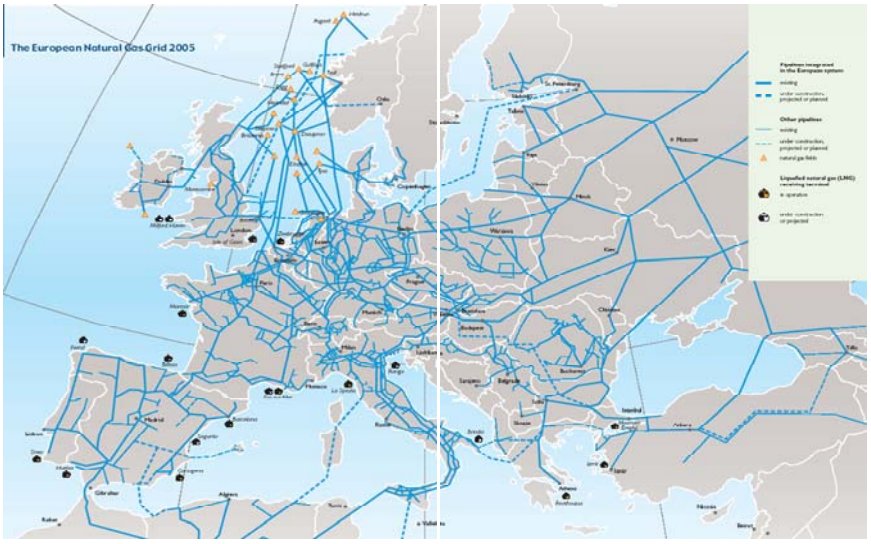

Figure 6 Transmission Networks across Europe
Source: Eurogas

As described above, one of the current issues facing the UK and Europe is the significant change in the gas supply situation with the decline of indigenous reserves and production. This change in the traditional supply sources as well as the ongoing development of the gas market in northwest Europe requires substantial new investment in gas transmission capacity to allow gas to move freely from supply to demand source.

Figure 7 Changing Supply and Demand across EU
Source: Gasuine

The change in supply sources has led to the development of new pipeline infrastructure between Norway and the UK and North West Europe allowing Norwegian producers to further develop reserves and to provide them with the flexibility to deliver gas into both markets. The vast reserves of Russia have also prompted the development of the Nord Stream pipeline. The proposed Nord Stream pipeline will be a 1220 km subsea pipeline consisting of two parallel lines; the first with a capacity of around 27.5 bcm and the second doubling the capacity to around 55 bcm. Nord Stream will deliver gas into the European gas market through a connection in northern Germany and is currently expect to cost 7.4 billion Euros although there has been considerable delay in the project and increasing pressure on costs. Gasunie has taken an active role in the project with the acquisition of a 9% stake in the project during 2007 in exchange for Gazprom receiving a 9% stake in BBL Company, the operator the Balgzand-Bacton Line (BBL) between the Netherlands and the UK.

The changing supply scenario is also resulting in a need for significant new investment in the existing transmission systems. The UK national transmission system (NTS) was built largely as a system to move gas from St Fergus in the North, the traditional entry point for North Sea gas to the South. With the natural decline of the North Sea fields a number of new injection points into the NTS have also been developed, including interconnecting pipelines from Europe such as the BBL and the Interconnector from Zeebrugge to Bacton and a number of new LNG re-gasification terminals that have been constructed or are currently under construction.

As a result of this National Grid has had to look at the investment required to ensure that the NTS can be flexible enough to continue to deliver gas at the demand centres. This has required National Grid to look at the reconfiguration of compression facilities on the NTS to ensure that gas received from new injection points and still be moved through the NTS to all demand centres.

In addition the construction of the new LNG re-gasification terminals such as those being developed by South Hook LNG and Dragon LNG, have required significant new investment in the NTS with projects such as the Milford Haven Pipeline Project. This project involved the augmentation of the NTS between Milford Haven and Tirley, consisting of the construction of a new 316km pipeline as well as an additional compressor station. National Grid is also undertaking a number of other projects to augment the NTS in order to allow for the injection of gas from LNG re-gasification terminals to be located at the Isle of Grain and Easington.

The development of gas markets in North West Europe and the increasing liquidity of trading hubs have also led to the need for new investment in gas transmission infrastructure. The Dutch have actively pursued a policy to position the Netherlands as the 'gas roundabout' of North-West Europe. The central location and the density of the Dutch network have provided the Dutch with the opportunity to position themselves to be the provider of transit and flexibility services between a number of countries. In order to support the gas roundabout concept, there has been a requirement to develop new gas transmission infrastructure to ensure that the transmission system has the capacity to move gas physically as liquidity on the TTF increases and more gas transits through the Netherlands. This policy has already seen the development of the BBL pipeline connecting the Netherlands to the UK and Gasunie is now undertaking a series of expansions of the transmission system between the Northeast of the country to the southwest and southeast of the Netherlands to allow the increased transit of gas. The first phase of this project will see the construction ~260 km of 48" and ~50 km of 24" pipeline with the whole project requiring an investment of approximately 1.1 billion Euros. Gasunie will expand the gas transmission system based on open seasons and the willingness of market parties to enter into long-term commitments is a necessary condition for the construction of any additional capacity.

In conjunction with the expansion of the Dutch gas transmission system, Gasunie has also continued to implement tariff and contracting systems to support the investment. Shippers in the Gasunie system contract transmission capacity at entry and exit points in the system. This capacity is contracted on a firm basis in order to provide the certainty over being able to physically move gas in the system if required to satisfy portfolios. Shippers make well thought out commercial decisions to optimise their portfolio as to which entry and exit points they want to use, based on daily supply and demand positions. Shippers will seek to maintain a high level of flexibility in their access to allow them to receive gas from or deliver gas to various facilities such as storage or interconnecting pipelines to the UK or other European countries as well as end use customers. When booking transmission capacity, the cost of gas transmission is not the main consideration because it is very low in relation to the trading value of gas. As a result of these developments, the demand for capacity will increase, while at the same time the use of capacity will decrease.

The evolving gas market in the European Union and the changes in supply source will require continued development of the gas transmission systems in a number of European Union countries. Eurogas, a European gas industry body, considers that in order to achieve this investment in a timely manner a stable and predictable regulatory framework, coupled with information transparency, a properly functioning internal market and incentives for investment will be required to offer the best chance for this to occur. There will be a number of challenges for EU countries to achieve this, such as the issues that may arise as an EU member countries work through the introduction of the third package of EU directives discussed below.

8 Gas Distribution

The existing gas distribution businesses that operate in the UK and Europe are regulated monopolies which cover specific geographic areas.

In Britain there are eight gas distribution networks, owned by four independent companies, with a number of smaller networks owned and operated by Independent Gas Transporters that mainly serve newly developed areas. As regulated businesses, a submission is required to be made to the UK regulator, Ofgem, outlining forecast operating and capital expenditure, expected revenue, cost of capital and other pass through costs, for the regulator to set their capped regulated returns as part of the pricing control process.

In the UK, energy transportation charges comprise about one fifth of the end consumer's bill. Regulated pricing control has been brought in to balance providing adequate revenue for the distribution companies to fund their operations against protecting the end consumer's interests. In 2005, National Grid sold off four of their Gas Distribution networks to three independent companies. In their latest pricing review, the regulator has been able to benchmark actual costs across the distribution networks against the now independently owned and operated companies.

Under the new price control formula in the UK, the challenges the distribution companies have to manage are:

- Predetermined (capped) revenue;
- Reducing costs in an environment where there are increasing material and labour costs;
- Delivery of services in an environment of contactor skills shortage, and
- Aging workforce.

As part of the regulatory framework, distributors are required to control and manage controllable operational expenditure to meet 2.5% efficiency productivity allowance under a RPI – X formula. To benefit under this regime, companies need to outperform their regulatory allowances in order to maximise incentives and rewards.

In the Netherlands, price capping has been incorporated within an amendment of their Gas Act through the Netherlands Competition Authority. This approves price capping to promote the efficient operation of gas networks businesses, where the efficiency or 'x – factor' will differ between network operators.

What is common across the board is that operational expenditure is capped to 'RPI – X' formula, to drive innovation and greater efficiencies.

Effect of cost control in the Regulated Environment

In the UK, whereby the unbundling of the gas supply chain has been in effect for some time, the drive for greater efficiencies by the regulator has driven expenditure in deemed non core areas downwards. An example of this is in the field of research and development (R&D).

R&D funding is considered a component of operating expenditure and post privatisation in the UK, R&D fell dramatically from its peak in 1991 from £90M (8% operating profit and 1% of turnover) to less than 0.05% of turnover. As a consequence, the regulator, Ofgem, introduced the Innovation Funding Incentive to allow that up to 0.5% of turnover can be committed to Innovative Research and Development which is ring-fenced from normal operating expenditure. This came into effect for Gas Distribution in 1st April 2008 with a number of sustainable criteria including promoting energy savings and ensuring a secure and reliable gas supply.

Capacity Management

Part of the task of management of the gas networks is capacity management and maintaining reliability of supply. In both the UK and the Netherlands, there is a high correlation between temperature and domestic demand.

In order to manage the capacity of the networks, the Dutch distribution systems are sized supply the demand that would be required for an average temperature of -12°C over a two hour period, equivalent to a 1 in 10 year weather event. Similarly for the Dutch transmission networks are sized to supply the demand to sustain an average temperature of -17°C over a two hour period, equivalent to a 1 in 100 year weather event.

In both the UK and the Netherlands, interruption of supply is used as a means to manage capacity constraint during periods of severe weather conditions.

In Victoria, the temperature standards by which the distribution and transmission networks are sized are for 1 in 2 year and 1 in 25 year weather events respectively. In the Victorian market, the majority of consumers are considered firm and are not considered interruptible and as such, interruption is not used as a means of capacity management for the Victorian distribution businesses.

9 European Union Energy Policy

While the concept dates back to the end of the Second World War, the call for a binding and mandatory common energy policy for Europe was first approved at the meeting of the European Council in October 2005.

Following the direction of the EC in 2005, the Commission adopted a strategy paper entitled *Green Paper: a European Strategy for Secure, Competitive and Sustainable Energy* in March 2006. The first legislative proposal, entitled *Energy for a Changing World*, was published by the Commission in January 2007.

Competition and the European Union

One of key the objectives of Europe's energy policy is the provision of a competitive energy market to European customers.

Despite the relatively recent introduction of the notion of a unified energy policy, the European Commission has taken steps since the late 1990's to liberalise the energy and gas sectors in Europe.

The second gas and electricity directives adopted in June 2003 introduced the notion of 'unbundling', whereby energy transmission networks (or distribution networks as they are commonly known in Australia) must be run independently from the production and supply side.

The Third Package

Following the development of formal policy guidelines in respect of unified energy policy by the EU, and following market surveys revealing a failure of the competitive market place for some industrial consumers, a third package of legislation on the liberalisation of the European energy market was proposed in 2007.

One of the primary goals of the third package was to transform the old market structure, which was characterised by national or regional monopolies dominated by vertically integrated companies that controlled imports and domestic production. The intention of the new proposals was to alleviate the stranglehold of these 'national champion' energy companies by forcing them to sell off their transmission assets. While it was proposed that investors could maintain shareholdings in both a network operator and a supply undertaking, these interests could only represent a non-controlling minority interest.

The Reign of the National Champions to Continue?

On 10 October 2008, the European energy ministers reached agreement on the third energy liberalisation package, with key concessions granted following lobbying by a coalition of member countries including France, Germany, Estonia, Greece, Latvia and the Slovak Republic.

The concessions granted under the agreed third package will effectively allow national champions to maintain ownership of their gas grids, subject to outside supervision. However, these companies will not be permitted to acquire grid companies in other Member States where full unbundling has been introduced.

The Third Country Clause

A further concern addressed under the third package is the ability of companies from countries outside the European Union (and not subject to the unbundling restrictions) to purchase assets within Member States, which could result in an imbalanced and uncompetitive marketplace.

As initially proposed, the 'third country' clause would have operated to permit entities from non-Member States to acquire distribution networks within the EU if they offered all EU entities similar rights in their home country.

At the meeting in October, the ministers agreed to soften the package so that the grant of reciprocal rights is limited to the country in which the non-EU entity intends to invest, rather than to all Member States.

Way Forward

The Third Package must now be ratified by the European Parliament.

10 Gas Fired Power Generation

Since 2000, gas and wind have been the only sources that have consistently contributed to increased power generation. Of the 1,108TWh increase in power generation from 2000 to 2007 in the OECD, 67% of came from gas fired sources. The power sector relies heavily on gas.

Growth in gas fired power, coupled with the need for new investment to meet electricity demand, have resulted in an overall increase in electricity prices. Combined Cycle Gas Turbines are increasingly becoming the marginal price setter.

Across Europe investors are turning towards gas fired power generation to meet their generation needs as a result of regulatory uncertainty with coal plants, and the public reluctance for nuclear facilities. The type of gas fired generation installed can have varying impacts on the gas price and required infrastructure. For example base-load power generation from gas contributes to a more stable gas demand profile whilst peak generators, on the other hand, compound the peakiness of the gas profile. This will most likely require an infrastructure investment to meet growing demand, further placing pressure on already increasing gas prices.

Across Europe, investors await short term and long term decisions by governments, which may delay investment opportunities. They need to be able to understand the cost of future regulatory regimes, in particular a price needs to be set for CO_2. In the short term the market operators and governments need to be sure that there is enough transmission capability to meet the needs of the increased gas fired power generation and where possible create plants that have fuel switching abilities.

11 Gas Pricing

Gas prices in Europe has followed the global trends in recent times, rising. The drivers behind the cost increases were high oil prices, cold weather and strong demand particularly from gas fired power generation.

Long term gas contracts in Europe have been traditionally indexed to oil prices, whilst at a discount to oil. Oil prices will continue to strongly influence the gas price, except when the gas supply and demand balance is very comfortable or very tight, at which point the forces of supply and demand will influence the price. The prices on the TTF seem to mirror those on the NBP.

The increased demand for gas, particularly capacity and storage facilities has led to an increased demand for gas infrastructure. Any future development of gas infrastructure will continue to apply pressure to already increasing gas prices.

12 Relevance to Australia

Historically Australian gas markets have been characterised by large quantities of gas available with relatively low demands. This supply/demand situation has led to the Australians experiencing low gas prices by international standards. Europe's declining supplies has increased their reliance on importing gas, including LNG. This leaves Australia being well placed to play a role in the world spot markets for LNG. The increased reliance on LNG across Europe, coupled with the proposed Australian LNG export facilities will further increase demand for Australian gas, potentially creating a link between international and domestic prices. The result would be higher prices paid by consumers and businesses alike.

As in Europe, Gas Fired Power Generation is likely to play in important role in the energy mix in Australia, particularly with the introduction of the Carbon Pollution Reduction Scheme (CPRS). Under this environment significant investment in gas production and transport infrastructure will be required. This coupled with the proposed export LNG facilities will have an underlying increase on gas prices. However, as in Europe it remains unclear what price will be placed on CO_2 and therefore investment is delayed. Across Europe and Australia it is imperative that government provides clear indicators of policy to ensure smooth transitions.

The distribution businesses in Australia and Europe alike are required to make a five yearly submission to their respective state regulators and present their case for projected operational expenditure, future investment required to the networks, projected revenue from transportation and cost of capital. In Australia this will change in 2009 whereby all submissions will now be made through a national regulator, the AER (Australian Energy Regulator). As in Europe, the Australian regulators are trying to drive greater efficiencies from the distribution utilities with a CPI – X formula for operating expenditure.

13 Conclusion

The Study Tour 2008 participants would like to thank the Australian Gas Industry Trust for the opportunity to visit and experience the gas industry in Europe. We hope the report provides an insight into the key learnings and benefits of the Study Tour 2008 to Europe for the Australian gas industry.