

The Palliser Report – APPEA Conference April 6th to 9th April 08 Perth, West Australia.

The 2008 APPEA was held against a backdrop of unprecedented activity in the Industry with over 2500 delegates attending. The mood reflected rapidly changing oil prices, resources shortages impacting on cost escalation and completion of projects and a new Federal Labour Government. What did we learn? The Plenary sessions focused on the growth and importance of natural gas - especially LNG, the growth of supply and demand til 2030 and the resource constraints impacting the industry. All great stuff, but the Plenary sessions were mediocre and the Conference lacked impact.

Observations and Commentary

The important summary factors confronting the Industry and global governments are:-

- a. **Global energy demand** will increase by about 20% to 2030 as it continues to reflect the growth in demand from
 - i. Global population and prosperity.
 - ii. China's GDP, car usage, and rising per capital income. Low penetration of car usage in China. (see Palliser Report October 2007 on China's demand profile at www.palliser.com.au)
- b. **Global gas markets** have changed. They are no longer value and access restricted by national policies and limited facilities, but LNG is transforming the market penetration of gas at competitive prices and deliverability to that of land-locked systems. LNG market penetration will triple to 2030 in generation (Europe) and industry (Asia) and will really benefit from
 - i. Technology to provide economic returns for "mini" LNG processing facilities sourced from CSG and
 - ii. Increased global degassing and processing infrastructure is providing additional delivery options for developing, in essence, a "liquid" market through arbitrage for LNG via a mix of contracts and "spot" market deals. It's great opportunity to capture the growth of electricity generation.

The **demand for gas and the supply** response in the period 2025-2030 will deal with many market factors:-

- iii. USA gas usage at 25BCF/day with limited increased supply from traditional suppliers- Canada and Mexico to cater for increased demand- enter LNG!
- iv. European countries will need to import 75% of their gas via LNG as concerns about the dependency and reliability of Russian supplies grows.
- v. Traditional Middle East exporters of energy will become importers of gas as their aggregate demand will be the same as Europe by 2015.
- vi. Burgeoning energy demand in China, notwithstanding its coal dominance over environmentally friendly sources, will fuel LNG growth.
- vii. India will be the fifth largest energy consumer. 50% of the energy demand growth will come from underdeveloped countries
- viii. Canada, Mexico and Indonesia will likely be importers of LNG whilst Qatar and Nigeria will be pre- eminent LNG suppliers.
- ix. National policies will start to dictate more and more the security of domestic supply to satisfy domestic demand options and developments and resources will be quarantined from export.

- c. **Future energy markets** will be dominated by conventional sources as by 2030,
- i. **Demand for gas** will grow at 1.7% p.a. with about a third of the demand existing in Asia (China and India). Growth for LNG will be 1.3% p.a. European growth will be for power generation.
 - ii. **Demand for Renewables** will grow at 10%p.a., but will only be at about 1.5% of total demand (off a very low demand base) and, post 2020, nuclear will grow at about 2 % p.a. and with the competitive pricing advantage of carbon taxes.
 - iii. **Fossil fuels will continue to be a major source of energy mix**; with declining hydrocarbon supply - particularly liquids, consumers will be left open to continued higher energy prices with limited options to reduce their energy demand.
 - iv. Many of the **traditional exporters of energy will become importers**, (e.g. the UK) and their net position is changing rapidly (< 5 years) which gives reduced flexibility to stimulate exploitation.
 - v. **Coal Seam Gas ("CSG")** is becoming a major long-term global gas source- resources in the USA and Canada are 160 – 170 TCF and Australia 120TCF. The latter is spawning new industry with LNG plants for export from Gladstone by 2013.
- d. **LNG growth** has been in Japan/Korea/Taiwan ("Tigers") but new markets will develop in China (power generation) and India as well as Europe which wants to diversify from Russia supply systems. Inter-regional trade from West Africa (Nigeria), Australia and the Middle East (Qatar) will supply these markets – Europe (less dependency on Russia) and Asia (Tigers & China). Australia's LNG production is to set triple by 2013; APPEA estimates that by 2017- production could be around 50-60 MTPA. However, Woodside CEO doubts the ability to deliver this growth due to resource constraints.
- e. **Security of energy supply** is no longer guaranteed as major shortfalls in reserve replacement from exploitation continue below production and liquids replacement has declined to about 41% of annual global production in 2006. The industry, especially over the last 3 years, has been issuing warnings about the dire level of diminishing global liquids replacement and the pending impact on price pressures without Federal Governments and consumers taking heed of the data presented.
- The Industry is failing in the public debate** about this critical issue to generate discussions and options; a critical debate that must be had, so as to ensure that all stakeholders in the community understand these complex issues, options and lead time to solutions. There must be "no community surprises" (e.g., petrol rationing) that leads to future finger pointing and damages the industries ability to exploit hydrocarbon resources. Already the Federal Government is focused on short term actions that have limited impact e.g., retail petrol pricing without publicly raising the issues of measures to increase supply, improve efficiencies and infrastructure. With prices continuing the upward spiral, both Governments and consumers seem not to want to believe the possible consequences of the future oil price of US \$200/barrel oil (Caltex 24th April 08) or a mixture of economic stagflation or rationing is on the horizon. The question is why?
- This is a huge challenge for the industry to facilitate a genuine stakeholder debate now!
Without improvements in **gas reserve replacement**, the gas supply/demand imbalance will put significant pressure on Europe & Japan/Korea/Taiwan to secure additional resources followed by USA and then China and India as their economies develop. This competition will lead to tighter gas supply and pricing pressure.
- f. **Environmental** considerations over climate change are dominating investment decisions- carbon trading, CO2 emissions with gas having a premium for carbon trading reasons.
 - g. **Emissions trading** will certainly give gas a commercial advantage over coal, but the long-term advantage will move to nuclear as carbon tax market prices rise. In the interim, this is a time for significant growth in gas market penetration. Whilst discussed with its potential impact on comparative fuel pricing and resource allocation in Australia, no definitive impact on emissions

trading can be stated until targets are set in 2008/2009 and whether or not Australia is part of a global scheme. Til then it is speculation based on many models that are only as good as their assumptions—speculation with an abacus!

- h. **Business Risks** are increasing even to companies with strong balance sheets and technical capability for major projects given their size (economic with competing fuels) and remote locations. These levels of risk, are not only from “traditional” risks such as reserve and production levels, fiscal terms and government stability, but also from increasing completion risks with their long lead times and capital cost escalation (30 to 40% within the last 18 months), financing cost overruns and delays, availability of skilled manpower and materials (steel, machines, fuel) and regulatory approvals.

Sovereign risks are always present, but as large LNG projects are commercialised and operated in less developed countries, they can represent a delicate balance of commercial interest versus changing national interests for the JVs. For example, in PNG the proposed ExxonMobil LNG plant for about 2011-2013 at an estimated cost of \$US10-11 billion to produce 6.3 MTPA for upto 20 years from reserves of 10TCF plus 12 mmbbls of liquids, is a global scaled project which not only taxes the balance sheets of the participants but will bring pressures to the PNG Government as it will dominate the PNG GDP by an estimated 30 to 35%. Managing stakeholder relations and communications for this level of impact on the national economy is a mission critical activity for the JV to realise their commercial returns.

In presentations from Shell and ExxonMobil at the Conference, their project maps showed little or no developments in South America; potential is there as well as the markets, but not the stable fiscal regimes- sovereign risk.

- i. As **nationalistic** policies surface, the need to maintain a free and secure market will be imperative so as not to distort the supply/demand position. Otherwise there is the potential for market chaos.
- j. **For gas, Australia has around 60 years** supply for 20 MTPA and is approaching the size and importance of Qatar as a major LNG energy source into Asia by 2020.

For oil, the picture is bleak in Australia, with domestic liquids production at about 196 mmbbls in 2007; this represents a reserve life index of less the 14 years for crude and condensate and less than 10 years for crude alone, as current exploitation is not matching reserve replacement. According to Geosciences Australia, new offshore basins resources will be in water depths up to 2500 meters and technology will play an important part in their exploitation, but it is a long way off as the whole exploitation cycle is up to 15 years before any meaningful production would materialise from a commercial discovery.

Overall, the Conference provided important information about the changing gas market, the importance of LNG and Australia’s place in this rapidly changing market. However, overall the Conference was disappointing, in particular poor plenary sessions. The quality suffered because the speakers from the Majors and Government Agencies on LNG generally were not well prepared, or the data presented was not relevant to Australian markets.

Disclaimer: The above commentary and opinions were derived from forecasts and projections from presentations and conversations with participants at the APPEA Conference, Perth, W.A., in Australia in April 2008. They have not been derived from generic research and analysis from the Palliser Group. If a person or company wishes to use this data for their internal project and/or situation assessment, they should make their own enquiries as to the accuracy and appropriateness of the data in the report.

Geoffrey R Widmer,
CEO, Palliser Group
Phone: +61-3-9819-3995
Mobile: +61-419-310-601
Email: gwidmer@palliser.com.au
www.palliser.com.au