



## Industry Consolidation in the Age of Gas: Strategic Implications for Australia

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### Policy Recommendations

- Australia must develop and articulate a robust energy security strategy which aligns national security imperatives and the need to maintain an open, market-based system of resource extraction and exports.
- At some stage in the future, there will be a bid by a National Oil Company for an Australian energy company or major Australian energy asset. Any energy security strategy document should outline the broad principles around foreign investment and the mechanism in which substantive changes in the structure of the sector is reviewed.
- As Australia becomes a larger exporter of energy, it will inevitably become bound up in the energy security considerations of other nations. Improving the skills of Australia's diplomatic core in the financing and markets of energy projects will be important since they will inevitably have to traverse these issues.

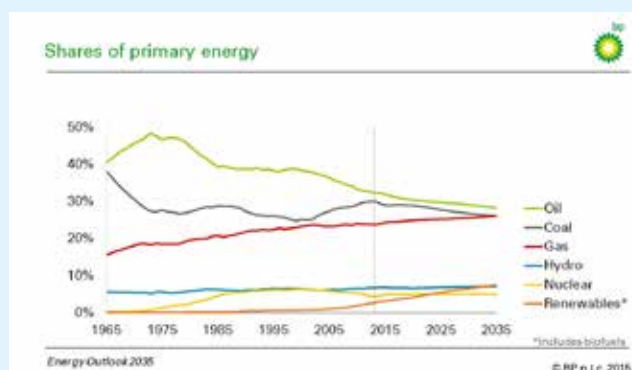
*The Royal Dutch Shell bid for BG indicates that a period of low oil prices could be ushering in a new wave of industry consolidation occurring at the same time that significant geopolitical transitions are taking place within the Indo-Pacific. The last time the region experienced rapid shifts in capital flows and falling energy prices was the 1997 Asian Financial Crisis. In 2015, the Indo-Pacific energy and security framework is significantly different. Indonesia is no longer part of OPEC; the US shale gas revolution has altered energy flows; Myanmar, and soon Iran, are reintegrating into the world economy; China has become the world's largest oil importer; and the relationships between national oil companies and international oil companies have evolved. The last oil and gas merger period took place in stock exchanges and was framed by regulatory and competition issues. This phase of merger activity may be different. China National Offshore Oil Corporation's bid for the North American oil and gas companies Unocal and Nexen provoked security debates over control and ownership of energy reserves from which Australia can learn. With the re-emergence of resource nationalism and a closer linking of energy and security discussions, Australia will need to astutely navigate this phase of industry transition and clearly enunciate an energy security strategy. This will involve the challenge of dealing with an industry that attracts large amount of US investment and technology with energy exports heavily focused on supplying East Asian markets.*

## Shift to Natural Gas

The past few decades have been marked by an increase in both the total primary energy supply and the proportion of natural gas within this mix. Estimates of growth vary. The BP Energy Outlook forecasts primary energy demand to increase by 41 percent between 2012 and 2035.<sup>1</sup> In this same period natural gas increases from around 22 percent to 24 percent of the world primary energy mix.<sup>2</sup> In simple terms there will be a bigger energy pie with a larger slice attributed to natural gas, and demand will rise by almost half by 2035.<sup>3</sup>

There are several reasons for the rise of gas as a preferred fuel source. Concerns over the environment have favoured natural gas as a “transition fuel” in the process of decarbonising the economy. Natural gas only emits half as much CO<sub>2</sub> as coal and is increasingly utilised for transport alongside its traditional and expanding role in electricity power generation.

Natural gas is transported via pipelines or by purpose built ships known as Liquefied Natural Gas (LNG) carriers. As an island continent, Australia’s international gas exports are entirely transported by LNG carriers. This trade has traditionally focused on East Asian electricity generation markets, but is expanding in terms of both geography and non-contracted or spot markets.



Source: BP Statistical Review of World Energy June 2015, “Energy in 2014: After a Calm Comes the Storm”, BP <http://www.bp.com/en/global/corporate/about-bp/energy-economics/statistical-review-of-world-energy/statistical-review-downloads.html>

## Economic Growth and Energy Prices

As energy demand increased in the early 2010s, there were optimistic forecasts about the future of natural gas. With the US-led shale gas revolution, new technologies, and a move away from coal; analysts thought that the energy market was going to fundamentally change. In a 2011 report of the same name, the International Energy Agency asked Are We Entering a Golden Age of Gas?<sup>4</sup> During the first half of the 2010s new gas production came on-stream; nuclear power plants in Japan were restarted; Asian growth slowed; and the US moved to export shale gas. The dynamics of the global gas market changed. The Economist suggested “[t]his is indeed a golden age, then, but for gas consumers.”<sup>5</sup> There has also been a convergence of regional gas prices—in the three main price reference points and hubs<sup>6</sup>—with greater market liquidity. Some analysts expect gas prices will remain subdued to at least the early 2020s and more bearish forecasters expect the glut to continue to the mid-2020s. Lower energy prices typically favour mergers, cost cutting, and a review of geographic and value chain priorities. The Shell bid for BP and the Royal Dutch Shell withdrawal from the Arctic indicate that this process is underway.

## Industry Ownership Patterns

The ownership structure of energy companies can be broadly categorised into two categories: national oil companies (NOCs) and international oil companies (IOCs). While gas is now an important component of NOC-IOC operations, these terms arose when oil was the main focus of the industry. In the 1950s BP, Esso, Gulf Oil, Mobil, Royal Dutch Shell, SoCal, and Texaco controlled some 85 percent of global oil reserves. As outlined in the below table, control of oil companies has changed hands over the past few decades, which included a period of nationalisation shifting control of most reserves to NOCs.

<sup>1</sup> BP, ‘Energy Outlook 2035’, BP p.l.c., <http://www.bp.com/content/dam/bp/pdf/energy-economics/energy-outlook-2015/bp-energy-outlook-2035-booklet.pdf>, 2015.

<sup>2</sup> M. van der Hoeven, ‘Oil and Gas in the Global Energy Mix’, *World Energy Outlook*, IEA, <http://www.iea.org/newsroomandevents/speeches/APR4OilSummitEDslidepresentation.pdf>, 2013.

<sup>3</sup> International Energy Agency, ‘World Energy Outlook 2013 Factsheet’, OECD/IEA, [http://www.iea.org/media/files/WE02013\\_factsheets.pdf](http://www.iea.org/media/files/WE02013_factsheets.pdf), 2013.

<sup>4</sup> International Energy Agency, ‘World Energy Outlook 2011: Are We Entering a Golden Age of Gas?’, OECD/IEA, [http://www.iea.org/publications/freepublications/publication/WE02011\\_WEB.pdf](http://www.iea.org/publications/freepublications/publication/WE02011_WEB.pdf), 2011.

<sup>5</sup> *The Economist*, ‘Golden Scenarios’, February 28, 2015, <http://www.economist.com/news/business/21645212-promised-golden-age-gas-arriving-but-consumers-are-cashing-well-producers>.

<sup>6</sup> “Henry Hub” (US), National Balancing Point (United Kingdom) and Platts JKM™ (Japan Korea Marker).

|                     | International Oil Companies  | National Oil Companies   |
|---------------------|--|--|
| <b>Oil Reserves</b> | 27% (Oct 2009) <sup>7</sup>  | 73% (Oct 2009)   |
| <b>Gas Reserves</b> | 32% (Oct 2009)   | 68% (Oct 2009)   |
| <b>Examples</b>     | Chevron, ExxonMobil, Royal Dutch Shell   | CNPC, Saudi Aramco, Petrobras  |
| <b>Key Features</b> | Privately owned [often publicly traded] oil companies whose main objective is to grow profits and maximise shareholder value. Because IOCs are private, they are more exposed to competition than NOCs. The main concerns of IOCs include market access, risk aversion, coordination and cost-effective staff utilisation.   | Fully or majority state-owned oil companies which are often protected by government and can raise debt capital at favourable rates due to that support. NOCs have many objectives beyond maximising profits including providing government revenue, employment, and energy security and achieving foreign policy objectives.   |
|                     | Operations usually cover the full cycle from exploration, production, and transport to marketing and sales of refined products. Although IOCs used to dominate R&D spending, technology, and project management, NOC investment in these activities has been increasing.   | NOCs usually have both upstream and downstream operations controlling most if not all of the domestic oil and gas resources. NOCs control the vast majority of large conventional fields.  |
|                     | Increasingly focus on larger and more complex projects and unconventional oil and gas fields, including shale gas and deep water operations, especially as they've faced lower operating profit margins and reduced access to low cost reserves. IOCs are increasingly challenged by the decline of reserve replacement ratios of existing oil fields, and are working toward exploitation of unconventional reserves requiring higher operating costs and lower profit margins. | Increasingly rely on oilfield service companies (OSCs), such as Halliburton and Schlumberger, which provide human resources and technical services that allow them to operate independently of IOCs. They focus on domestic production, though they are increasingly going global both as competitors and joint venture partners. There is an inverse relationship between performance in hydrocarbon function and non-hydrocarbon burden. NOCs have benefited from growing access to capital markets, increased profits and larger payoffs from technical advancements (using OSCs is cheaper than assistance from IOCs). |

Following the last wave of IOC consolidation in the late 1990s that created ExxonMobil, ConocoPhillips and the other so-called super-majors, there has been a global expansion of the reach and role of NOCs and in particular Asian NOCs. With strong energy demand growth in the Indo-Pacific, and especially in industrialising Asia, many NOCs looked abroad for assets and new fields. The natural evolution under these conditions has been for nations that were energy exporters to become major importers. With energy security concerns paramount, the governments have encouraged their NOCs to look internationally to secure supplies as well as acquire technical and engineering skills.<sup>7</sup>

#### Top Five International Oil Companies<sup>8</sup>

| Name        | Gas Reserves (billion cubic feet) |
|-------------|-----------------------------------|
| ExxonMobil  | 71,860                            |
| BP          | 45,975                            |
| Shell       | 42,473                            |
| QAO NOVATEK | 36,952                            |
| Total S.A.  | 33,026                            |

#### Top Five National Oil Companies<sup>9</sup>

| Name                                | Gas Reserves (billion cubic feet) |
|-------------------------------------|-----------------------------------|
| National Iranian Oil Company        | 1,187,000                         |
| Qatar General Petroleum Corporation | 890,000                           |
| Saudi Aramco                        | 287,844                           |
| Abu Dhabi National Oil Company      | 200,000                           |
| Petróleos de Venezuela S.A          | 195,100                           |

The changing energy production patterns are illustrated well by Indonesia's decision to let its OPEC membership lapse<sup>10</sup> when it became a net oil importer in the early 2000s. Similarly, China became an oil importer in 1993, and is on track to be the world's largest oil importer in 2015. In 2005, China National Offshore Oil Corporation (CNOOC) stepped onto the global stage when it launched a bid for US firm Unocal which was ultimately unsuccessful. The failure of the bid was

<sup>7</sup> M. Thurber, 'NOCs and the Global Oil Market: Should We Worry?', *Energy Seminar*, Stanford University, [http://energyseminar.stanford.edu/sites/all/files/eventpdf/Thurber%20energy%20seminar%20NOCs%2006Feb2012%20final\\_0.pdf](http://energyseminar.stanford.edu/sites/all/files/eventpdf/Thurber%20energy%20seminar%20NOCs%2006Feb2012%20final_0.pdf), 2012.

<sup>8</sup> EY, 'Global Oil and Gas Reserves Study', EYGM Limited, p. 11, [http://www.ey.com/Publication/vwLUAssets/EY-global-oil-and-gas-reserves-study/\\$FILE/EY-global-oil-and-gas-reserves-study.pdf](http://www.ey.com/Publication/vwLUAssets/EY-global-oil-and-gas-reserves-study/$FILE/EY-global-oil-and-gas-reserves-study.pdf), 2014.

<sup>9</sup> PetroStrategies, 'Leading Oil and Gas Companies Around the World', *PetroStrategies Inc.*, [http://www.petrostrategies.org/Links/Worlds\\_Largest\\_Oil\\_and\\_Gas\\_Companies\\_Sites.htm](http://www.petrostrategies.org/Links/Worlds_Largest_Oil_and_Gas_Companies_Sites.htm), 2014.

<sup>10</sup> Indonesia is planning to re-join OPEC. However, with current growth trends in the longer term, it is expected that Indonesia will become a net importer of energy.

influenced by the negative response of the US Congress over security concerns. The lessons of the failure were astutely analysed by Beijing and the strategies of its NOCs evolved. In the space of eight years, in 2013 CNOOC acquired Canada's Nexen which was the single largest takeover by a Chinese company. The presence of larger, more aggressive NOCs on the global stage has raised concerns over national security. The evolution of the Chinese NOCs over the past two decades is of interest to security analysts, especially as the lessons of previous mistakes and optimal structures have been adopted and implemented quickly. Beijing appears to be pragmatic in how it utilises its three main NOCs to achieve strategic outcomes. Aside from CNPC bringing in outside equity, all three have made a number of international transaction which provides hints about China's grand strategy and expanding global interests.

#### Major Chinese NOCs

| Name   | Key Features and Attributes   |
|--|---|
| China National Petroleum Corporation (CNPC)        | <p><b>Original mandate:</b> Responsible for onshore upstream assets.</p> <p>CNPC was restructured in 1998 with vertical integration into a firm with both upstream and downstream assets. This integration added downstream assets. Its current strategy is to integrate business assets and further increase its downstream market share. CNPC is the leading upstream company in China, accounting for 54 percent to 77 percent of China's crude oil and natural gas output<sup>11</sup> (including PetroChina, its public, listed arm). CNPC holds the most equity production and investment overseas of any Chinese NOC. It accounted for 31 percent of overall refining capacity in China in 2014 and is expanding in southern China.</p> <p><b>Notable International Transactions</b></p> <ul style="list-style-type: none"> <li>• 2009: Purchased 96 percent of Singapore Petroleum Corporation, (USD) \$2-billion.</li> <li>• 2010: Joint bid with Shell for 100 percent of Arrow Energy, Australia-based Coal Bed Methane producer, (USD) \$1.9 billion by CNPC, (USD) \$3.13-billion total.</li> <li>• 2013: CNPC Purchased 28.57 percent stake in Eni's subsidiary in East Africa, (USD) \$4.1 -billion</li> </ul>                                   |
| China Petroleum and Chemical Corporation (Sinopec) | <p><b>Original mandate:</b> Responsible for downstream activities, refining distribution and petrochemicals.</p> <p>Sinopec was restructured in 1998 through vertical integration into a firm with both upstream and downstream assets and acquisition of fields for exploration and production. It is seeking to acquire more upstream assets to increase oil and gas production and to diversify its revenues. Sinopec accounted for 41 percent of overall refining capacity in China in 2014, 5.6-million barrels per day of total oil processing capacity<sup>12</sup> with significant presence in coastal and southern areas of China, making it the largest oil refiner in the world. Sinopec relies heavily on imported crude oil for refineries.</p> <p><b>Notable International Transactions</b></p> <ul style="list-style-type: none"> <li>• 2009: Purchased 100 percent of Addax, (USD) \$ 7.19-billion.</li> <li>• 2010: Purchased 9.03 percent in Canadian oil sands company Syncrude, (USD) \$4.675-billion</li> <li>• 2010: Purchased 40 percent stake of Brazilian subsidiary of Spanish oil company Repsol, (USD) \$7.1-billion.</li> <li>• 2011: Purchased 30 percent stake in Galp Energy's Brazilian unit, (USD) \$5.2-billion.</li> </ul> |
| China National Offshore Oil Corporation (CNOOC)    | <p><b>Original mandate:</b> Responsible for exploring and developing oil and gas assets in offshore regions of China.</p> <p>CNOOC has expanded with increasing attention to offshore zones and assets. It is a growing competitor to CNPC and Sinopec, increasing exploration and production in the South China Sea and extending into downstream sector (particularly in Guangdong Province).CNOOC commissioned first refinery in 2009; the Huizhou plant.</p> <p><b>Notable International Transactions</b></p> <ul style="list-style-type: none"> <li>• 2010: Purchased 50 percent stake in the Argentinean oil company, Bidas Corp., which has oil and gas exploitation operations in Argentina, Bolivia and Chile, (USD), \$3.1-billion</li> <li>• 2013: Purchased Canadian energy firm Nexen, (USD) \$15.1 billion.</li> </ul>  |

<sup>11</sup> U.S. Energy Information Administration, 'China: International energy data and analysis', EIA, <http://www.eia.gov/beta/international/analysis.cfm?iso=CHN>, 2015.

<sup>12</sup> *Ibid.*

## Canadian CNOOC Experience

The CNOOC takeover of the Canadian energy firm Nexen was considerably larger than previous deals and attracted significant public attention. CNOOC had already made acquisitions in the US in 2010 and 2011 when it bought into Oklahoma City-based Chesapeake Energy's shale fields in south Texas, as well as fields in Colorado and Wyoming.

The approval process for the Nexen transaction took five months and was negotiated against the backdrop of a debate about the role of state owned entities controlling oil sands assets. Concerns were also raised in the US that a Chinese company controlling assets in the Gulf of Mexico could pose a threat to national security.

A crucial factor in the approval of the Nexen takeover was the US-led unconventional energy revolution, which has made foreign investment into oil and gas more acceptable. Nexen has holdings in Alberta, the Gulf of Mexico, Africa, and the North Sea. CNOOC's acquisition of Nexen greatly expanded its global reach. However, because of the importance of this company to Canada, and its global holdings of oil reserves the transaction was reviewed by the Government of Canada and eventually also required the approval of the Committee on Foreign Investment in the United States (CFIUS).<sup>13</sup> CFIUS ultimately approved the transaction. CNOOC made concessions including relinquishing operating control of Nexen's Gulf of Mexico assets in order to receive approval from US authorities.

The factors that appeared to concern the Canadian government most were public perception of foreign state ownership of a resource base and the expanding reach of a foreign government into an industry of strategic importance. This matter was so sensitive that there were unconfirmed reports of internal polling on this matter to gauge community sentiment. In the end, the Canadian Prime Minister announced the approval of the deal with the caveat: "When we say that Canada is open for business, we do not mean that Canada is for sale to foreign governments."<sup>14</sup> So while ultimately the government decided to approve the transaction, it was with caveats and a warning that in the future such takeovers by state owned entities (SOEs) would only be permitted in exceptional circumstances.<sup>15</sup>

Foreign SOEs will likely have to make concessions similar to Nexen, including demonstrating their commitment to Canada by retaining management and employees, establishing North American head offices in Canada, and listing shares on the Toronto Stock Exchange.

As a result of the decision, partnering at the project level is permitted and encouraged but direct ownership is now a highly unlikely prospect. This discouraged some foreign investment into the oil sands sector and has sheltered the industry from takeover by SOEs during a time of low oil prices. The effect of uncertainty during the deliberation process on future FDI in Canada was raised by numerous people within large Canadian investment houses. Perhaps the most important lesson Australia can take from the CNOOC-Nexen process in Canada is that clear and objective criteria should be established early and before investment decisions are made or else the Australian government may too be forced into making an ad-hoc decision for which it is not prepared.

## Collaboration or Competition?

Despite the competitive nature of the gas companies and evolving relationship between NOCs and IOCs, the industry is relatively collaborative. This is mainly due to the large infrastructure investment required, inter-linkages of investment in the value chain and the dependence on gas as a fuel to meet security of supply obligations.<sup>16</sup> In terms of traded gas, it is expected that LNG will continue to become more important in both relative and absolute terms, having the potential to become the dominant form of gas transported by the late 2020s. In global terms, NOCs, especially Asian NOCs, are becoming more global, technologically savvy and experienced with LNG operations and interacting with IOCs. With Australia set to become the world's largest LNG exporter by the end of the decade, natural gas dynamics will become a more important national priority. A cyclical downturn of energy prices, which began in 2014, has resulted in a period of industry consolidation, restructuring and change. This will bring with it challenges and opportunities. How Australia responds will determine its place in the global energy matrix during the 2020s when the next large wave of LNG investments will likely proceed.

<sup>13</sup> D. Gelles, 'U.S. Approves \$18bn Cnooc Bid for Nexen', *Financial Times*, February 12, 2013, <http://www.ft.com/intl/cms/s/0/2cc88ec2-7529-11e2-8bc7-00144feabdc0.html#axzz3nhLeedK4>.

<sup>14</sup> C. Burton, 'Stephen Harper's new trade rules safeguard Canada's interests', *The Globe and Mail*, December 8, 2012, <http://www.theglobeandmail.com/globe-debate/stephen-harpers-new-trade-rules-safeguard-canadas-interests/article6136355/>.

<sup>15</sup> Industry Canada, Government of Canada, 'Statement Regarding Investment by Foreign State-Owned Enterprises', December 7, 2012, <http://www.ic.gc.ca/eic/site/ica-lic.nsf/eng/lk81147.html>.

<sup>16</sup> D. Ledesma, 'The Changing Relationship Between NOCs and IOCs in the LNG Chain', *Oxford Institute for Energy Studies*, NG 32, July 2009, <http://www.oxfordenergy.org/wpcms/wp-content/uploads/2010/11/NG32-TheChangingRelationshipBetweenNOCsandIOCsinthelNGChain-DavidLedesma-2009.pdf>.

## Australian Energy Matrix

As a market-based, Western nation, Australia does not have any NOCs of its own. In addition to local subsidiaries of super-majors and NOCs, there are local firms such as Woodside and Santos. As well as exporting natural gas, Australia also sells significant volumes of coal and uranium on international markets. This relatively large role of energy exports in the overall economy has led to a national interest in maximising the trade and surpluses from commodity sales, although there are some internal debates over environmental impact, domestic preservation of reserves, local content, and employment as well as royalty and taxing regimes. In general terms, the federal government is largely supportive of the industry and within the energy exporting states of Western Australia and Queensland there is a bi-partisan commitment foster an expansion of the sector.

While Australia has been exporting LNG from the North West Shelf since 1989, the industry has expanded from its Western Australian base to include operations in the Northern Territory and Queensland. This shift is resulting in a much greater level of exposure, across all states, to Asian LNG prices on domestic energy prices. The scale of investment over the past few years has been remarkable. Driven largely in response to expected Asian demand there was an investment of around \$200-billion in LNG projects. This is the equivalent to approximately 12 percent of annual Australian GDP.<sup>17</sup> The large expansion was not without challenges. The costs to build these new plants has escalated. Labour disputes at Chevron's Gorgon project and a slippage of the first cargo to early 2016, along with previous cost revisions, may have further weakened the case for the sanctioning of additional Australian LNG projects.<sup>18</sup> The escalating onshore cost pressures and fact that some fields are a large distance offshore has meant that Floating LNG (FLNG) is now a realistic option. Shell's Prelude FLNG, off the coast of Western Australia, is considered a test case for this new technology. If successful, it is probable that FLNG will become more popular worldwide.

### Australian Energy Companies

| Company              | ASX Listed | Projects (Completed)  | Projects (Under Construction)   |
|----------------------|------------|---|---|
| Woodside Petroleum   | Yes        | North West Shelf, Pluto LNG   | Wheatstone LNG  |
| Santos               | Yes        | PNG LNG   | Gladstone LNG   |
| Shell Australia      | No         | North West Shelf  | Prelude FLNG, Gorgon Project  |
| ExxonMobil Australia | No         | Kipper Tuna Turrum offshore component   | Gorgon Project  |
| Chevron Australia    | No         |   | Gorgon Project, Wheatstone Project  |
| INPEX Australia      | No         |   | Ichthys LNG Project, Prelude LNG  |
| Origin Energy        | Yes        |   | Australia Pacific LNG (APLNG), BassGas Project. Kupe Gas Project, Otway Gas Project |
| AGL Energy           | Yes        | Newcastle Gas Storage Facility, Camden Gas Project, Silver Springs Gas Storage and Project, Galilee Gas Project |   |
| ConocoPhillips       | No         |   | APLNG, LNG facility operated by ConocoPhillips                                      |
| QGC                  | No         | Queensland Curtis LNG (QCLNG)   |   |
| Total E&P Australia  | No         |   | Ichthys LNG Project   |

Even though there are no Australian NOCs, there is a degree of alignment with IOCs and government interests. For example, in August 2002 a sales and purchase agreement was signed between CNOOC and the North West Shelf (NWS) partners<sup>19</sup> to supply 3.3-million metric tonnes of LNG a year to China for 25 years. At the time it was Australia's largest single trade deal. During these negotiations for the China LNG contract there was a bid by Royal Dutch Shell to acquire the Australian firm Woodside. This was blocked by the Treasurer Peter Costello in April 2001. Despite the publically stated reasons for blocking the deal, some insiders suggest that it was done to secure the Chinese gas deal.<sup>20</sup> The Australian government worked closely with the marketing arm of the NWS partners and made representations through the Prime Minister to his Chinese counterparts.<sup>21</sup> It is also understood that the Australian government was involved in negotiations forming what was referred to as a "Team Australia" approach. The interaction and support by Western governments and IOCs, is not unusual and shows that energy companies and natural gas have a strategic overlay.

<sup>17</sup> N. Cassidy and M. Kosev, 'Australia and the Global LNG Market', RBA Bulletin, March 2015, <http://www.rba.gov.au/publications/bulletin/2015/mar/pdf/bu-0315-4.pdf>.

<sup>18</sup> A. Macdonald-Smith, 'Chevron's Gorgon LNG Faces Delay to 2016', Australian Financial Review, 2 August 2015, <http://www.afr.com/business/energy/gas/chevrons-gorgon-lng-faces-delay-to-2016-20150731-gioy1r>.

<sup>19</sup> This includes the following IOCs: Woodside, Royal Dutch Shell group, BHP Billiton, BP group, Chevron Corp and Japan Australia LNG (MIMI) Pty Ltd.

<sup>20</sup> A. Hyland, 'How a \$25bn Gas Deal Almost Stayed on the Shelf', Australian Financial Review, 2 August 2002, <http://www.afr.com/markets/commodities/energy/how-a-25bn-gas-deal-almost-stayed-on-the-shelf-20020924-k1v8v>.

<sup>21</sup> Ibid.



## Geopolitical Context

During the last downturn in oil prices that started in 1997, when prices fell to \$10 a barrel, there was a period of industry consolidation. From around 1998-2002 national interest and energy security concerns were much different. It was at this time the IOC “super-majors” were created through a series of mergers. Business sentiment was focused on the dot.com boom and I.T. potential, the so-called “new economy”, in contrast to the “old economy” which included basic manufacturing and resource extraction that were viewed as declining industries. Debates over mergers related mainly to regulatory and competition issues bound up with the legacy of John D. Rockefeller (Standard Oil) and anti-trust sentiments. International considerations, generally related to the ability to achieve scale in challenging environments created by the size of new projects on the frontier, which approached billions of dollars.

In 2015 industry drivers and context are much different than in 1998. While energy prices have declined from record highs, they did so after a strong period of demand and substantial supply growth. South-East Asian economies have recovered from the 1997 financial crisis and China has been reorienting its economy away from investment to consumption and entered a phase of lower economic growth. In this nearly two decade period, tensions within the region as well as between the US and China are sharper, more complex and less one sided in the US’ favour. While the US remains able to project force into the Western Pacific, its reach has been eroded by a major expansion of the People’s Liberation Army (PLA) in both size and capability. PLA deployment of Anti-Access/Area-Denial assets to restrict US naval freedom of movement in waters close to the Chinese mainland is one reason that China is more influential and confident in its immediate region. This trend is expected to continue as China builds and deploys the next generation of anti-ship ballistic missiles or cruise missiles. Security analysts noted the public display of the DF-26 “carrier killer” missile that could have a range as far as 2,500 miles. As of late 2015, it is unclear if China has integrated the sensors and networks to make the DF-26 fully operational. At present, US-China geostrategic competition is focused on the South China Sea.

Beyond East-Asia, there is a range of new developments in the Indo-Pacific which are changing economic and strategic calculations. They include the US unconventional gas revolution; expansion of energy extraction to ultra-deep water locations; rehabilitation of Myanmar into the international community; and expected normalisation of Iranian relations. The growth of China — and associated increase in energy demand — has seen its NOCs take a larger global role, resulting in an expanded sphere of Chinese interests. With large volumes of Chinese energy flowing through the Straits of Malacca into the South China Sea, these transit points are becoming more central to national security concerns. Furthermore, the “one belt, one road” strategy extends these interests well into the Western Indian Ocean. As Chinese-bound exports from the Middle-East and, in time, East Africa, grow, focus on these regions will increase, potentially drawing China into stabilisation efforts and eventually state building.

Patterns of energy flows have been changing for a decade and will continue to do so during the 2020s. Western sanctions on Russia have created an opportunity for Russian-Chinese collaboration, which may reweight the direction of Russian oil and gas exports from west to east. China has become a much larger consumer of Middle-East oil and has quietly improved relations in the region while US strategy has drifted and its position has weakened. Furthermore, China is now the third-largest LNG importer and is expanding both its pipeline network and LNG re-gasification capacity. A gas pipeline from Myanmar further extends Chinese influence in South-East Asia.

In 2014, the International Energy Agency (IEA) reported that through China’s NOCs it had invested (USD) \$73 billion in upstream investments which operate in more than 40 countries and controlled about 7 percent of worldwide crude oil output.<sup>22</sup> In its report, the IEA “did not find cause to believe that the Chinese NOCs operate under the direct instructions of, or in close co-ordination with, the central government.”<sup>23</sup> This benign view of Chinese grand strategy, through state owned entities, is disputed in some quarters. CNOOC has become much more sophisticated and comfortable interacting with and owning IOCs. The evolution from the failed bid of the US IOC Unocal (since acquired by Chevron) to the successful takeover of Canadian IOC Nexen in 2012 shows the progression.<sup>24</sup> Conversely, the movement of CNOOC’s HD-981 oil rig into Vietnamese waters, accompanied by 80 People’s Liberation Army Navy and Chinese coast guard ships, shows that NOCs are viewed by Beijing as instruments of foreign policy suitable for making territorial claims.<sup>25</sup>

Aside from the evolution of China’s energy consumption and use of NOCs, there have been a wider range of industry developments. More difficult deep-water and frontier fields have meant that projects are larger, technologically challenging, and more expensive. Big data, analytics, 3D/4D modelling, automation, and the use of drones have altered new and existing operations. Notwithstanding the current drop in energy prices, this suggests that IOCs will continue to evolve their business model. NOCs have started to internalise these advanced technologies and processes, but this is an area where IOCs and energy service companies still have an advantage.

<sup>22</sup> J. Jiang, ‘Chinese National Oil Companies’ Investments: Going global for energy’, IEA/OECD, 2014, <http://www.iea.org/ieaenergy/issue7/chinese-national-oil-companies-investments-going-global-for-energy.html>.

<sup>23</sup> *Ibid.*

<sup>24</sup> The CNOOC-Nexen deal is significant as the 2010 BHP-Billiton bid for Saskatchewan’s bid for Potash Corp was blocked.

<sup>25</sup> V. Trong Khanh, ‘Cnooc Oil Rig Fuels Vietnam-China Tensions’, *Wall Street Journal*, 5 May 2014, <http://www.wsj.com/articles/SB10001424052702303417104579542722782830580>.

## Implications for Australia

Australia is no stranger to the geopolitics of commodities. Japanese expansion during World War II was linked to control of resources. Before and after World War II, Australian state- and federal-level debates considered both the strategic and commercial logic of selling iron-ore to Japan.<sup>26</sup> Since this time, Japan has purchased large volumes of iron-ore and remains the largest importer of Australian LNG. Australia and Japan are in the process of upgrading this economic relationship to incorporate a security dimension. While Japan remains a key market for Australia, US finance flows freely into the Australian economy.

The major change between 1998 and 2015 has been the rapid ascent of China as major strategic and economic power. The impact of this rise on the global order has resulted in extensive commentary and debate that has been well covered in other publications. Hugh White's "China choice thesis", most clearly articulated *Power Shift*<sup>27</sup> is a central component of these discussions. This has extended beyond security scholars to the broader public, indicating the depth of interest in this topic. At its core White's thesis suggests that Australia will need to choose between its main security partner (the US) and its main economic partner (China), but this simplification does not do justice to the nuance and complexity of the issue.

By 2018 LNG is expected to become Australia's second largest export commodity after iron ore, and Australia may rival Qatar as the world's largest LNG exporter. As Australian LNG supplies form a larger proportion of the gas mix of importing countries, the nation will have a more prominent role in energy security considerations, especially if imported energy is viewed as a fundamental component of security. This could extend to more complex considerations on sanctions for places such as Iran and Russia. Given Iran's large reserves of natural gas, the speed with which Australia upgrades relations could determine access for and position of its IOCs. Pushback is expected from the US on both security and economic grounds. In the world of diplomacy, Australian Department of Foreign Affairs officials may need to become much more familiar with gas industry dynamics and structures as these matters will probably become a more regular feature of discussion.

The experiences of the Timor Sea Sunrise project, involving East Timor, and a mooted Australia-Papua New Guinea (PNG) gas pipeline show the complexities of gas projects and international relations: Both nations are much smaller than Australia (and reliant on aid and support), but in spite of this, high-level government involvement was unable to achieve the objectives of project proponents. Given these challenges, what happens when during the 2020s Australia receives pressure from large customers, perhaps through an embassy, to revise a gas contract or an Australian IOC experiences security challenges in a country outside of the region? Once all sanctioned LNG plants are operational, how will the government respond to a widespread industrial dispute that threatens to shutdown multiple plants? What will be the response from Canberra to a populist premier seeking to institute a domestic gas policy retrospectively that changes the price and availability of gas for exporters that include foreign IOCs and NOCs?

Moves by the Australian firm Woodside to acquire PNG's Oil Search— in which the PNG government has a 10 percent stake — has provided a glimpse into the next decade that will likely see more IOC/NOC transactions dealt with by foreign ministries. This would undoubtedly come into focus if there was an attempt of an IOC or NOC to buy an Australian energy company. After the failure of the Unocal transaction, it was suggested in *The Economist* that CNOOC was considering a bid for Woodside<sup>28</sup>. At this time a Royal Dutch Shell bid for Woodside<sup>28</sup> had already been blocked. While CNOOC consequently pursued a different target, the potential for an Australian IOC or project being acquired by an NOC in the current era of low prices remains.

The next wave of new LNG investments will be considered once prices recover. The extent to which US shale gas and potentially Iranian gas exports influence these market dynamics is not clear. However, industry observers predict the next "window" for new LNG investments may not open until the 2020s. Some projects may be sanctioned before this time for strategic reasons as underlying economics are very weak. The successful attraction of \$200-billion in LNG investments over the past decade does not mean future LNG investment will automatically flow into Australia in the future. The cost structure remains high, labour disputes increase risk, and there is uncertainty about climate and domestic gas policies. Significant state and federal reform and agreement between the governments will be required if Australia is going to benefit from the next wave of LNG investment.

<sup>26</sup> B. Wurth, *Saving Australia: Curtin's Secret Peace with Japan*, South Melbourne, Victoria, Lothian Books, 2006.

<sup>27</sup> H. White, 'Power Shift: Australia's Future Between Washington and Beijing', *Quarterly Essay*, no. 39, 2010, pp. 1-74.

<sup>28</sup> *The Economist*, 'Giving China a bloody nose', August 5, 2005, <http://www.economist.com/node/4254062/print>.



## Australian LNG Projects

| Project                  | Partners   | Production Capacity<br>(million tonnes per annum) | Start Date |
|--------------------------|--|---|------------|
| Wheatstone               | Chevron, Kuwait Foreign Petroleum Exploration Company, Woodside, Kyushu Electric Power Company and TEPCO | 8.9   | 2016       |
| Gorgon                   | Chevron, ExxonMobil, Shell   | 15  | 2015       |
| Pluto                    | Woodside, Kansai Electric, Tokyo Gas   | 4.2   | 2012       |
| North West Shelf Venture | Woodside, BHP-Billiton, BP, Chevron, Shell, MIMI   | 16.3  | 1989       |
| Prelude                  | Shell  | 3.5   | 2017       |
| Ichthys                  | Inpex, Total   | 8.4   | 2017       |
| Darwin LNG               | ConocoPhillips, INPEX, Eni, Santos, Tokyo Electric, Tokyo Gas  | 3.7   | 2005       |
| Australia Pacific LNG    | Origin Energy, ConocoPhillips, Sinopec   | 9   | 2015       |
| Queensland Curtis LNG    | BG Group, CNOOC  | 8.5   | 2014       |
| Gladstone LNG            | Santos, PETRONAS, Total, KOGAS   | 7.8   | 2015       |

## Energy Security and Policy Choices

It is difficult to ascertain if there is an overall Australian energy security strategy. As a market-based economy, there is a prevailing view that markets will function to achieve energy security outcomes.

It is important to note that energy security priorities are specific to the particular energy source. Australia is increasingly reliant on imported oil and therefore is vulnerable to supply disruptions and depends more on stability in producing nations and control over sea lines of communication. With large supplies of LNG sent to international markets, and gas is also used for domestic generation, the priorities are different. The increasing importance of gas infrastructure to economic interests and power generation are clear. The Western Australian Varanus Island explosion highlighted this and cost the local economy an estimated \$3-billion,<sup>29</sup> while also making operation of the grid extremely difficult, prompting rationing. There is also the broader issue of control of gas fields and production plants and decisions around the expanding production. In light of external equity involvement, especially by NOCs, there is the question over ownership of the asset, especially in a crisis.

The main area of vulnerability arises because Australia imports 80 percent of the crude oil it refines into liquid fuels and around 44 percent of the refined fuel in Australia. The 2015 Energy White Paper dedicated only one page to the reliability of transport fuel supply, largely placing its faith in international markets to supply oil to Australia.<sup>30</sup> With declining refining capacity; greater reliance on imports; and limited alternatives for transport vehicles, Australia could be vulnerable if there is a break in supply. During an international crisis, it is unclear if markets will function well enough to address energy needs. A potential shock could be intensified because Australia does not hold the equivalent of 90 days of oil stocks required by the International Energy Agency.

Some defence and security analysts are concerned about the ability of Australia to access transport fuels during an international crisis. This group believes the goal of energy policy should be to provide energy security for the nation. They point to the critical period during World War II of 1942-1945 when Australia was reliant on imported oil while facing an external threat. The OPEC-induced supply shocks of the 1970s are also cited as an example. However, the Energy White Paper views oil supply as a commercial issue and ignores the geopolitical factors that influence markets. It largely overlooks the prospect of a supply shock or international crisis, such as a blockage of the Persian Gulf.

<sup>29</sup> K. Diss, 'The Cost of Securing WA's Energy Future', ABC, 13 May 2013, <http://www.abc.net.au/news/2013-05-17/the-cost-of-securing-wa27s-energy-future/4697136>.

<sup>30</sup> Department of Industry and Science, 2015 Energy White Paper, Australia, <http://ewp.industry.gov.au/sites/prod.ewp/files/EnergyWhitePaper.pdf>, 2015.

With regards to natural gas, the main discussion in the Energy White Paper relates to the links between LNG and domestic pricing. There is no substantive commentary on the security or strategic implications of becoming a leading LNG exporter. Conversely, the 2013 Defence White Paper acknowledges: "Resource insecurity is likely to grow in coming decades. Asia is expected to become 90 per cent dependent on imported oil by 2050, mostly from the Middle East. Once major exporters of oil and gas, ASEAN countries are now collectively net oil importers and within three decades may also become net importers of gas. Japan and the Republic of Korea have limited domestic supplies, rendering them vulnerable to major energy shocks. These changes are countered to some extent by the United States' rapid change from being a net importer to a net energy exporter."<sup>31</sup> For Australia's Western flank, it notes: "As Australia further develops the North-West Shelf as a global source of liquefied natural gas and other petroleum resource exports, freedom and security of the sea lines of communication in the Indian Ocean will become even more important to us."<sup>32</sup> Security considerations may in time shift south as the Great Australian Bight appears to have potential as a new oil and gas province. However, major activity is only likely to occur in this region during the next phase of the cycle when the demand-supply equation tightens.

The Defence White Paper considers the macro-trends of oil flows, touches on the eventual shift of ASEAN nations to become gas importers and notes that the Indian Ocean will become more critical as more gas is shipped from the North West Shelf. This security imperative will become more geographically disperse: by 2020 LNG facilities will be shipping large volumes from Western Australia, Northern Territory and Queensland.

Future Australian governments (both state and federal) will need to make decisions related to energy security. The decisions can be made and articulated according to the timetable and agenda of the government, or may be forced as conditions change or there is a proposed major transaction. Some of these decisions will have a technical, economic, or security component, and often they will have all three. The last period of industry consolidation resulted in the creation of super-majors, but since then NOCs have become more globally active, most evidently in China's expansion. Australian IOCs may be target for takeover attempts and other global mergers will change the ownership structure of some existing Australian LNG projects. While there may be informal discussions and the blunt use of the *Foreign Acquisitions and Takeovers Act 1975*, Australia should learn from the Canadian experience with CNOOC and Nexen under similar legislation to avoid resorting to an ad hoc response to setting policy for a strategic sector of the economy.

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<sup>31</sup> Department of Defence, *2013 Defence White Paper*, Australia, [http://www.defence.gov.au/whitepaper/2013/docs/WP\\_2013\\_web.pdf](http://www.defence.gov.au/whitepaper/2013/docs/WP_2013_web.pdf), 2013, p. 18.

<sup>32</sup> *Ibid.*, p. 14

# Andrew Pickford



Andrew Pickford works between Perth, Australia and Mont-Tremblant, Canada in the areas of strategy, economic analysis and natural resources with a range of organisations, both private and public.

He has particular expertise with electricity utilities, commodity trends, industry-driven applied research and the reform and transformation of businesses and governments during periods of turbulence. Andrew maintains a mix of appointments and engagements in both Australia and North America, working with decision makers in corporate, government, academic and civil society settings.

His initial training within KPMG in internal audit and risk management results in an understanding of business and management realities. From traversing grand strategy to long-term economic trends, he has been fortunate to work with some of the world's most distinguished strategists and experienced company directors. This

background and experience produce insights and advice which are easily understood and actioned by directors, government ministers and CEOs, while at the same time maintaining a deep and unique approach to rigorous analysis.

As the author of a range of books, monographs and articles, Andrew has written and commented on a range of issues from agricultural and energy markets to Asian economic trends and the impact of elections on business conditions.

He currently holds the following roles:

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Mr Pickford was the inaugural Managing Director of ISSA Indo-Pacific and has sat on a number of Australian boards. He was a Board Advisor to Horizon Power, a State Government-owned corporation responsible for generating, procuring, distributing and retailing electricity supplies which provides power to approximately 100,000 residents and 10,000 businesses, including major industry, across regional and remote Western Australia. Until late-2013, Andrew Pickford was a Board member of the Australia Day WA where he was also chair of the strategic-planning sub-committee. In this role, he helped formulate a new strategic plan and led the process for recruiting a new Chief Executive Officer.

During 2011, Mr Pickford was selected to attend the prestigious US Government's International Visitor and Leadership program entitled "US Foreign Policy and Energy Security". In 2012, he was invited to participate in the Australia India Dialogue in India for his expertise in the electricity sector.

# Michael Petric



Michael has extensive experience in the defence and security sector in Canada. He served as an advisor to two Canadian Ministers of National Defence and also as a uniformed member of the Canadian Armed Forces. Michael's service as a Captain in the infantry included an operational tour in Afghanistan where he worked with US and NATO Forces mentoring Officers of the Afghan National Army. For his work building and professionalizing the Afghan National Army Michael was awarded the Canadian Joint Operations Command Commendation.

During his time as a civilian advisor at National Defence Michael gained expertise in policy and program development and implementation. He continued his work in public policy and international security during his time with Human Rights First, and the McCain Institute for International Leadership in Washington, DC. At the McCain Institute Michael focused on the intersection of national security and energy policy.

Michael graduated from the University of Ottawa and completed a Master of Arts in International Affairs at the Norman Paterson School of International Affairs in Ottawa. He is also a certified Project Management Professional (PMP). He is currently undertaking an MBA at IE university in Madrid on a part time basis, and is also working with Avascent a strategy and management consulting firm in Washington DC.



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