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Middle East outlook and energy security in the Asia-Pacific region

by Leanne Piggott

In its most fundamental sense, energy security is assurance of the ability to access the energy resources required for the continued development of national power ... it is the provision of affordable, reliable, diverse, and ample supplies of oil and gas (and their future equivalents) ... and adequate infrastructure to deliver these supplies to the market. ... A reliable energy supply means predictable supplies that are less and less vulnerable to disruption.¹

Energy derived from fossil fuels (oil, coal and gas) has been a key to the development of modern society since the dawn of the industrial age. Reliable and affordable access to those energy sources continues to be essential for global economic growth and stability. Yet an analysis of the global energy market over the last decade, and the prognosis for its short- to medium-term future, reveals growing risks and uncertainty concerning the availability of oil and gas supplies in the face of rising demand.

One of the strongest periods of global economic growth ever recorded occurred during the decade before the economic downturn in mid-2008. This was accompanied by an increase in global energy consumption of approximately 27% over the same period.² Significantly, much of this increase occurred in the Asia-Pacific region, which in 2008 was responsible for 87% of the growth in global energy consumption. Indeed, almost half

of the world's total energy demand already comes from the Asia-Pacific region where consumption is expected to grow faster than in other regions due to the higher rates of economic and population growth, especially in China and India.

Not surprisingly, the significant increase in global energy demand has led to concern among net energy importers about the security of continuing supplies of reliable and affordable fossil fuels, in particular oil, which represents the largest share of global energy use. Currently known gross global oil reserves are believed to be sufficient to meet estimated demand for the next three to five decades. If there are limits on the availability of oil within that period, those are likely to be due, on the supply side, to political instability within the major oil-producing regions and, on the demand side, to political tensions created by a sharpening of competition between the major oil consumers. For the time being, therefore, threats to energy security will emanate primarily from geopolitical causes rather than from physical constraints on supply.

This is significant for the major Asian energy consumers—China, India, Japan, and South Korea—who, in order to meet their energy needs, source an increasing percentage of their oil and gas imports from the Middle East. The repercussions of this

have been three-fold. First, 'a dynamic of dependence' has developed in which Asia's global economic engines are increasingly tied to the oil and gas supplies of one of the most unstable regions of the world. For the major Asian economies, securing enough oil and gas to drive industrial development is critical to the vision each has of their country's future. In an effort to offset the perceived vulnerabilities created by the increasing dependence on imports from such a volatile region, Asian governments have invested substantially in supply contracts and in acquiring equity in upstream production. But what other ties might result from increasing dependency in a tightening energy market?

Second, heightened investment by South and North Asian states in Middle Eastern oil and gas assets is actually helping to entrench instability in the latter region by providing Middle Eastern regimes with the means to enhance their own security at the expense of social and economic development. Ironically, this has the potential to heighten the risk to energy supplies already posed by the instability of Middle Eastern regimes and to increase the vulnerability of their nationally owned oil and gas institutions in which Asian states have invested heavily.

Third, in its quest to secure Middle Eastern energy supplies by what has been described as 'neo-mercantilist' methods, China in particular has raised concerns in Washington about a potential challenge to US interests in the region. Protecting the supply and transit of oil from the Arabian/Persian Gulf (the 'Gulf') has been a central pillar of US foreign policy since the 1940s, even though it was not articulated as a formal foreign and defence policy until the formulation of the 1980 Carter Doctrine. Beyond the Gulf and its strategic Strait of Hormuz, keeping the sea lines of communication open is part of America's commitment to preserving market-based access to energy supplies and maintaining the

global market mechanisms by which oil and gas prices have been set.

A debate is underway in Washington as to what would be the impact of a decision by China and other Asian energy consumers that the need to secure their energy supplies is too important to be left to the interplay of market forces. The extent to which the major Asian energy users will act to forestall, remove or minimise their actual or perceived vulnerability to a denial of, or interruption to, their access to energy supplies is as yet unknown. But as Doran and Russell have argued, 'the possibility that the price and supply of energy may become subject to strategic pressure, disconnected from the demands of the marketplace, is something to which the United States can be expected to react in strategic terms.'³ This debate, and how it might be resolved, has obvious implications for Australia in balancing its relationship with one of its key trading partners, China, and with that of its key security partner, the United States.

Thus the purpose of this *Special Report* is first, to provide an overview of developments in the global energy market; second, to highlight Asia's growing dependence on the global oil market generally, and more specifically, on oil and gas supplies sourced from the Middle East; third, to examine the current security environment of the Middle East in order to assess potential threats to the supply of oil and gas from the region in the short-to-medium and medium-to-long terms; and fourth, to reflect on the implications of those developments for Australia.

Energy security: the geopolitics of supply and demand

The International Energy Agency (IEA) predicts that global energy usage will continue to increase over the next twenty years by as

much as 45%. While the United States will continue to be a significant consumer of global energy, much of the increase will be required by the emerging economies of the Asia-Pacific region, in particular China and India, whose total energy use has already increased over the last decade by 118% and 59% respectively. Contrary to predictions about the imminent demise of accessible energy supplies, the world has, according to the 2009 *BP Review of World Energy*, 'enough proved reserves of oil, natural gas and coal to meet the world's needs for decades to come. The challenges the world faces in growing supplies to meet future demand are not below ground, they are above ground. They are human, not geological.'⁴

This assessment relating to the management of future energy supplies is nothing new. The energy market has always been susceptible to political and strategic influence, the 1973 oil embargo being the most notable historical example. In more recent times, spikes in the price of oil have been caused by attacks by insurgents on Nigeria's oil facilities, and by the 'pipeline politics' played by Russia in periodically shutting off natural gas supplies in an effort to dictate market terms to its customers.

Currently, oil accounts for the largest share of global energy use (35% in 2008),⁵ due largely to the oil dependence of the transport sector.⁶ In 2008, global oil consumption amounted to 84.5 million barrels per day (mb/d). This figure is expected to rise to 106.5 mb/d in 2030. The increase is largely accounted for by the anticipated rise in the number of cars that will be purchased by consumers in emerging markets, particularly those of the so-called BRIC countries⁷. China already has the world's second largest car market. By 2030, China's transport needs alone will require an estimated 17 mb/d, representing an average annual growth rate of 3.5%.

On the supply side, estimated gross global oil reserves range between 1.120 trillion barrels and 1.258 trillion barrels,⁸ sufficient to place the hypothetical peak of known oil reserves beyond a twenty to fifty year horizon.⁹ But the infrastructure that supports and exploits those reserves is in far from ideal shape. The current global economic downturn has resulted in a reduction in investment in upstream production, including exploration and development of new oilfields and in the maintenance of existing infrastructure. Moreover, the prominence of national oil companies (NOCs) on the supply-side of the market, which now control some 90% of global oil reserves, has exacerbated the problem of under-investment in future production capacity. Unlike international oil companies (IOCs), which control some 4% of reserves, NOCs do not use their oil revenues for output growth but rather to pursue national policy agendas.

Without the required investment, unutilised production capacity will diminish once the global economy strengthens, resulting in the oil market again tightening as it did during the previous period of economic growth. The capacity of gas suppliers, also, to meet the predicted increases in demand once global economic growth resumes will hinge on timely investment in the infrastructure required to extract and transport this commodity, either through pipelines in the case of regular gas or on tankers for Liquefied Natural Gas (LNG).

Concerns about inadequate capital investment are compounded by the slow but steady depletion of the economically recoverable oil reserves of non-OPEC producers, resulting in the concomitant rise in dependence upon OPEC suppliers,¹⁰ in particular the Middle East's Gulf states. Combined, the Gulf littoral states¹¹ presently hold 60% of all globally proven oil reserves and more than 41% of the world's proven

natural gas reserves. Saudi Arabia alone accounts for 21% of world oil reserves, while Iran accounts for 16% of all known reserves of natural gas (second only to Russia).¹²

The IEA predicts that over the next twenty years the share of global oil trade represented by net exports of oil products from the Middle East will rise from 49% currently to 52%. Saudi Arabia alone is expected to account for almost half of all Gulf production, an amount greater than that expected from Africa and the Caspian area combined. Over the same period some 46% of the projected growth in world gas production will come from the Middle East.

Energy produced from natural gas accounts for the third largest share of global energy consumption, which reached 24.1% in 2008, the highest share on record. According to the IEA, global gas consumption is set to rise from 2726.1 billion cubic meters (bcm) in 2008 to 4434 bcm in 2030. To meet the increased demand, global gas production grew by 3.8% in 2008 (above the 10-year average of 3%). By 2030, the proportion of globally produced natural gas that is used for electricity generation will rise from 39% to 45%. In absolute terms, the highest growth in gas demand is projected to occur in the Middle East (due to local availability), but the *rate* of demand growth will be fastest in Asian states, in particular, China, India and Japan.¹³

The primary market for oil and gas exports from the Middle East will be the Asia–Pacific region,¹⁴ which in 2008 had only 3.3% of globally proven oil reserves, but accounted for 30% of global consumption. Already in 2004, oil from Gulf producers made up more than 50% of the oil imported by Japan, India, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand. In 2008, Asian net oil-importing countries sourced 60% of their oil and 32% of their LNG supply from the Middle East. The dependence on Middle

Eastern suppliers of oil and gas by Asia's four major energy importers is especially striking.

Asia's growing reliance on Middle East oil and gas (LNG)

Currently, the major oil consumers in the Asia–Pacific region are China, India and Japan (which are the world's second, third and fourth largest oil consumers respectively after the US¹⁵), and South Korea (the world's ninth largest oil consumer). The analysis below concentrates on those consumer countries, for the simple reason that the IEA expects them still to be the region's major net oil-importing countries in 2030.

Although China is a major domestic oil producer, it has been a net importer since 1993. Further, China has embarked upon a strategy to build its strategic petroleum reserves (SPR) to 480 million barrels by 2020, for which it has also raised its imports.¹⁶ In 2008, China sourced 42% of its oil imports from the Middle East, mainly from Saudi Arabia and Iran. Historically, gas has not been a major fuel in China, although its share in the country's energy mix is increasing. China's imports of LNG from the Middle East have also grown and it recently concluded multi-billion dollar agreements with Iran to develop Iran's gas fields and to produce LNG.

Japan, with virtually no domestic oil reserves, is the second-largest net importer of crude oil and largest net importer of LNG in the world.¹⁷ In 2008, it sourced 80% of its imported oil from the Gulf, primarily from Saudi Arabia and the United Arab Emirates (UAE); and 25% of its LNG came from the Gulf.

India, after China, has the second-largest known oil reserves in the Asia–Pacific region, but it, too, still needs to import oil to meet its energy needs. In 2008, 72% of those imports came from the Gulf, mainly from Saudi Arabia and Iran. Regarding LNG, India has become

the sixth largest importer of LNG in the world, most of which is purchased from Qatar, but also from Egypt, Oman, and the UAE.

South Korea, like Japan, has limited domestic energy resources. In 2008, 67% of its oil imports came from the Gulf, with Saudi Arabia its single largest supplier. In regard to gas, South Korea is the second largest LNG importer in the world. In 2008, it purchased 48% of its imports from the Middle East, primarily from Qatar and Oman, with smaller volumes from Egypt and the UAE.

Concerns of increased vulnerability resulting from rising dependence on oil and gas supplies from the Gulf have driven Asian governments to encourage their countries' energy companies to sign supply contracts of varying duration with supplier states, invest in foreign oil and gas infrastructure development projects, and to acquire equity in foreign oil and gas industry assets. China has been most active in this regard, using sovereign wealth funds and its state-owned companies¹⁸ to spearhead its efforts to secure future oil and gas supplies in more than twenty countries spanning four continents, focusing on Africa (including Sudan, Nigeria, Kenya, and Equatorial Guinea) and the Middle East in particular.

For example, although United Nations sanctions have deterred investment in Iran by Western firms having expertise and technology to develop oil and gas reserves, Chinese companies have entered into several oil and gas production contracts with the Islamic Republic. In October 2004, Sinopec signed a Memorandum of Understanding (MoU) with the Iranian Government to acquire a 51% stake in the large Yadavaran oilfield, which is thought to hold up to 18 billion barrels. The US\$70 billion deal is also to include a commitment by China to buy LNG from Iran over 30 years. The contract was entered into in 2007, and the parties

signed a further agreement under which Sinopec is to invest US\$2 billion to develop the Yadavaran oilfield.

In 2009, China National Petroleum Corporation (CNPC) and the National Iranian Oil Company (NIOC) signed an agreement worth US\$1.76 billion for the development of Iran's North Azadegan oilfield, which has an estimated reserve of 6 billion barrels of oil. In March the NIOC signed another agreement worth US\$3.2 billion with a consortium of three Chinese companies to produce LNG from Iran's South Pars gas field over the next three years. South Pars is the world's largest reservoir of gas, which Iran shares with Qatar. In June, NIOC signed a further US\$4.7 billion contract with CNPC to develop another Iranian section of the South Pars field in the Gulf. In neighbouring Iraq, CNPC and the Iraqi Government officially inaugurated in March 2009 the al-Ahdab oil project located in Iraq's south-eastern Wasit province.

But perhaps the most important relationship that China has developed with Gulf energy producers is with Saudi Arabia. The two countries established a 'strategic partnership' in 1999, under which Sinopec would cooperate with Saudi's Aramco to develop Saudi oil and gas fields while Saudi Arabia would invest in Chinese refineries and petrochemical plants. This led in 2004 to an equity agreement between Sinopec and Aramco facilitating Chinese exploration and development of natural gas in *Ar-Rub' al-Khali* (the 'Empty Quarter'), for which Sinopec is entitled to a four-fifths share of the natural gas extracted. In turn, Aramco is a major investor in a US\$5 billion joint venture with China's Sinopec and Exxon Mobil in the Fujian Refining and Petrochemical Co. Ltd in China's south-eastern Fujian province.

The two states have also exchanged high-level government delegations. In 2006, Saudi's King Abdullah visited China where he

and President Hu Jintao signed an agreement on oil and gas cooperation, which was reported in the Chinese press as having laid a solid foundation for future strategic relations in energy and other areas. In February this year, Hu visited Saudi Arabia on a 'journey of friendship and cooperation' to promote bilateral trade, in particular, an 'all-round energy partnership'. That same month, the first cargo of Saudi crude was sent to the Fujian refinery. Already Saudi Arabia is China's largest oil supplier. As the US continues to decrease its imports from non-Western Hemisphere sources over the next decade,¹⁹ it is likely that China will in turn become Saudi Arabia's most important customer.

To date, India has had less success than China in consolidating energy imports from the Middle East. An agreement estimated to be worth US\$40 billion was signed in 2005 by a consortium of Indian companies to invest in LNG production from the Yadavaran gas field and to import LNG from Iran for twenty-five years. The deal is yet to be approved by the Iranian High Economic Council. More successful was the 2004 contract signed between India's Petronet and Qatar's RasGas in which RasGas agreed to supply India with LNG for a twenty year period.

Japanese companies, too, have actively sought participation in natural gas exploration and production projects abroad to help mitigate the country's shortfall in domestic natural gas resources. The government's 2006 energy strategy plan encouraged Japanese companies to increase energy exploration and development projects around the world with the goal of importing up to 40% of the country's oil requirements from Japanese-owned concessions by 2030 (an increase over the current figure of 15%). Thus far, most of the successful bids are located in the Middle East and Southeast Asia. In 2004, for example, Japan's part state-owned

Inpex was awarded a US\$2 billion contract to develop Iran's Azadegan oilfield. In the original contract Inpex was the field operator and held a 75% share. However, in 2006 NIOC cut Inpex's share to 10% and assumed responsibility for operations in accordance with its 'buy back' principle.²⁰ In Kuwait, the Japanese-owned Arabian Oil Company has a supply contract to purchase oil from the Khafji field until 2023.

In 2006, Korea National Oil signed production-sharing contracts with the Kurdish regional government for oilfields in northern Iraq's Kurdish areas, and agreed to buy stakes in six other oilfields. In February 2009 South Korean President Lee Myung Bak and Iraqi President Jalal Talabani signed a MoU in Seoul valued at US\$3.55 billion that would see Korean businesses develop an oilfield in Basra and build infrastructure including power plants.²¹ A contract was due to be signed by mid-year. South Korean companies have also signed agreements with Iran to develop sections of the South Pars gas field, while SK Engineering & Construction has won a US\$0.91 billion order from a unit of Abu Dhabi National Oil Company to build a new gas plant. In Saudi Arabia, South Korea's Daelim Industrial Company, Samsung, and SK Engineering & Construction (as well as Japan's Chiyoda Corporation) were awarded contracts in June 2009 to contribute to the new Jubail oil refinery.

This snap-shot of a proliferation of foreign investment and equity agreements highlights the increasing linkages between Middle Eastern export and Asian import markets as Asian importers seek to insulate their economies from oil and gas shortages in the medium to long term. However, growing dependence upon the Middle East as a source of oil and gas in turn increases the importers' vulnerability to short-term supply interruptions and price spikes driven by the region's notorious instability.

Not only has the Middle East been the scene of substantial supply disruptions in the past, its shipments of oil and LNG also transit vulnerable maritime routes to eastern (and western) markets. One of the most vulnerable points along those routes is the Strait of Hormuz at the mouth of the Gulf through which 16–17 mb of Middle East oil passes each day, approximately two-thirds of total oil trade by tanker, representing some 20% of world oil consumption. A significant quantity of LNG from Qatar also passes through the Strait.

A disruption of oil supply through the Strait of Hormuz would also, crucially, mean the removal from the market of most of the world's excess production capacity that has in the past been brought on line quickly to mitigate the adverse effects of a sudden oil supply crisis and concomitant price spike. Given the negative impact that price shocks have been shown to have on economic growth in developed economies,²² a prolonged disruption of Gulf energy supplies would more than likely impact severely on global economic performance and the development of the now energy-import-dependent Asian economies in particular.

Longer term, investments in Gulf upstream facilities and equity oil and gas agreements remain vulnerable to the endemic weaknesses of Middle Eastern states generally and the Gulf oil and gas supply states in particular. It seems unlikely that another Gulf state will experience externally-driven regime change as occurred in Iraq in 2003. Yet domestic tensions—of varying degrees—are ever-present: nobody predicted the recent demonstrations in Iran following the 12 June presidential election, in which hundreds of thousands of protesters poured onto the streets shouting 'death to the dictator', openly defying not only President Ahmadinejad but also the Supreme Leader Ayatollah Khamenei

and the entire apparatus of theocratic rule. After placing the Iranian capital, Tehran, under complete lockdown, and killing up to 200 of its own people, the regime seems secure for the time being, but in Iran and other Gulf countries, deep-seated resentment against authoritarian and totalitarian regimes lies just below the surface of apparent stability.

What, then, is the short- to longer-term strategic outlook for the Middle East as it relates directly to the supply of liquid fuels from the Gulf?

Middle East strategic outlook

Since the beginnings of modern state formation in the Middle East in the immediate post-World War II period, the region, not surprisingly, has witnessed numerous wars, civil conflicts, invasions, military coups, revolutions and terrorist attacks. Despite this high degree of instability, the region has been a relatively reliable supplier of oil to the global market. Notable exceptions, during which the average gross shortfall of oil supply to the world market has been between 30 million and 640 million barrels, occurred during the 1956 and 1967 Arab–Israeli wars when shipping through the Suez Canal was blocked, the 1973 Arab oil embargo, the 1979 Iranian Revolution, the 1980–1988 Gulf war, the 1990–1991 Gulf war, and the 2003 Iraq war and subsequent attacks on the country's oil facilities.²³

In more recent years, instability in the region has been caused by non-conventional violence, including the asymmetrical conflict between Israelis and Palestinians, and religious and social divisions and tensions between the region's Sunni and Shia populations. The latter continue to be played out in Lebanon's precarious democracy and most violently in post-war Iraq. It is unlikely, though, that those sources of conflict will have a direct impact on the supply of Gulf

oil, with the possible exception of Iraq in the wake of the withdrawal of US forces from Iraqi cities that is currently underway.²⁴ Already the country has seen an increase in terrorist attacks for which the Sunni group 'The Islamic State of Iraq', an umbrella insurgent group that includes 'al-Qaeda in Mesopotamia', has taken responsibility.

In other parts of the Gulf, al-Qaeda and its affiliates present a more likely threat to the security of the region's oil supplies in the short to medium term. For al-Qaeda, attacks on oil production and export systems are not only justified but encouraged in order to stop the supply of 'Muslim oil' to 'the enemies of Islam'. Declared targets of al-Qaeda are the 'apostate' Arab regimes, among which the al-Saud regime has first priority, and the United States, viewed as the protector of pro-Western Arab regimes and their misuse of oil resources. By attacking Saudi oil interests,²⁵ al-Qaeda seeks to target the kingdom's economic foundations, destroy the regime and drive the Americans from the region.

Al-Qaeda succeeded in carrying out a number of terrorist attacks in Saudi Arabia throughout 2003 and 2004, in response to which the Ministry of Interior, which is responsible for the protection of the kingdom's energy facilities and fields, began a substantial counter-terrorism program. Thus far, it has spent more than US\$2.5 billion on infrastructure protection and training and equipping internal security and intelligence services.²⁶ The results have been impressive. In February 2006, an al-Qaeda attack on the major crude oil processing facilities at Abqaiq, which supplies almost 10% of the oil on the global market, was repulsed. Whilst the attack did not stop exports, it did push up oil prices by US\$2 a barrel. By the end of 2007, some 180 additional terrorist plots had been foiled. Further, since March 2008, more than 800 arrests have been made of members or affiliates of al-Qaeda, including fighters,

commanders, logisticians, theologians, and financiers.

To date, the organisation has failed in its effort to re-organise and re-group in Saudi Arabia, instead moving into Yemen. Yemen is considered by al-Qaeda to be of strategic significance due to its weak government and geographic location along the southern border of Saudi Arabia. Here the Yemeni and Saudi branches of al-Qaeda merged in January 2009, calling themselves 'Al-Qaeda in the Arabian Peninsula'.²⁷

Strong links are known to have been subsequently established between 'Al-Qaeda in the Arabian Peninsula' and 'Al-Qaeda in Iraq'. A number of Yemeni jihadists have travelled to Iraq to fight and upon return, have played a large part in the increased sophistication of militant attacks now being carried out in Yemen. Also of concern are recent reports of al-Qaeda militants moving from the Pakistani tribal areas into Yemen. This follows statements by Ayman al-Zawahiri (Osama bin Laden's deputy) identifying Yemen as an important staging ground for attacks both within Yemen and beyond. From its new base of operations in Yemen, al-Qaeda could stage hit and run strikes at oil infrastructure and transportation targets throughout the region and directly threaten shipping in the Strait of Hormuz.

Perhaps a more acute threat to the security of the export of Gulf oil is an escalation of the international community's conflict with Iran over its nuclear program and the threat of proliferation. Iran has been developing nuclear energy since the 1950s. According to the Iranian Government, the sole purpose of its nuclear program is to produce electricity so that it can export more of its valuable oil and gas and increase its hard currency earnings. Iran's right to pursue nuclear power for this purpose is

not in question, as long as it honours its commitments under nuclear nonproliferation agreements to declare its activities and to allow short-notice access to its nuclear sites by International Atomic Energy Agency (IAEA) inspectors.²⁸ The problem is that the Iranian Government has repeatedly violated those commitments.²⁹ In defiance of its obligations and three sets of UN Security Council sanctions,³⁰ Iran continues to develop uranium enrichment technology that could allow it to gain a nuclear weapons capability. It is also in the process of developing a missile delivery system.

Based on the IAEA's most recent report of 5 June 2009, analysts have concluded that Iran now has enough low enriched uranium to convert into highly enriched uranium (used in the explosive core of nuclear weapons) to make a simple nuclear device within one to two years of deciding to do so.³¹ It is thought that it would take some five years to produce a nuclear warhead that could be delivered by an existing or future Iranian ballistic missile.³²

The prospect of Iran acquiring a nuclear weapon has already sparked grave fears of a nuclear arms race in the region, with an increasing number of Middle Eastern states already expressing greater interest in civil nuclear programs. Traces of processed uranium were found by IAEA inspectors at the site of the nuclear reactor that Syria was apparently building at Dir a-Zur (located in eastern Syria). A reactor would have enabled the Syrians to irradiate fuel, and thereby to create plutonium, a by-product of a fission reaction. Israel destroyed the building in an air strike in 2007.

In the light of the calls made by the Iranian President and other Iranian leaders for Israel's destruction, Iran's development of a nuclear-weapons capability would pose a particular danger to Israel, threatening to

devastate it either physically or economically. The mere announcement by Iran that it possesses such a capability could spark mass emigration from Israel (and the Palestinian territories). While it awaits a hopeful outcome of international diplomatic efforts and the UN sanctions, the Israeli Government has made it clear that it has not taken the military option off the table. The US, too, has not ruled out the use of military force to prevent Iran from acquiring nuclear weapons or the capability to make them.³³

If an Israeli military strike was to occur, it would more than likely be limited to disabling Iran's key nuclear installations as was the case with Israel's air strikes against Iraq in 1981 and Syria in 2007.³⁴ However, in both of those cases, the reactors were easy and prominent targets, above ground. Iran's facilities include multiple, deeply-buried nuclear sites.

If its nuclear sites are attacked Iran would almost certainly retaliate. The nature and extent of Iran's retaliatory measures would be constrained by its limited military and economic capacities and by the still-powerful US military presence in the region and America's determination to defend its Gulf allies. Whether the initial strike against Iran is carried out by Israel or the US, Israel could expect missile attacks from Iran's proxies, Hezbollah in Lebanon, and perhaps Hamas in Gaza.

Closer to its own territory, Iran's Republican Guards could launch maritime attacks against civilian and other shipping in the Gulf. Still, self-interest would limit Iran's options in that regard. Iran's own economy is dependent upon the security of the sale of its oil and gas to the global markets, and imports of refined petroleum for its own internal market, so it would not be in Iran's interests to disrupt trade through the Strait of Hormuz for any length of time.

The possibility of Iran igniting another round of fighting between Hezbollah and Israel might have been mitigated somewhat by the recent victory of the pro-Western coalition in Lebanon's June 2009 election. However, with the suppression of protests against the disputed re-election of Mahmoud Ahmedinejad as Iran's President on 12 June, the Islamic Republic will be anxious to return to 'business as usual'. It is now highly unlikely that the Iranians will change their nuclear policies in the short term. The crackdown by the regime on dissidents protesting at Iran's contested election outcome, which is believed by many to have involved fraud on a massive scale, revealed its determination not to embark on any fundamental change of course.

Longer-term threats to the supply of oil from the Middle East arise from the endemic instability of a region of authoritarian regimes that face long-term challenges from disaffected populations frustrated by high unemployment, inadequate education, corruption, economic mismanagement, and inequitable wealth distribution.

The vast investment of money and resources by Gulf regimes to secure themselves physically and politically has come at the expense of investment in good governance and in sustainable growth through economic and human development.³⁵ Arab governments, for example, spend more each year on military imports than on health and education combined. Not surprisingly, the region has witnessed growing unemployment, which was 17 million or 14% across the Arab world in 2008 and 12.5% in Iran (this being the official government figure). Many of the jobless were university graduates.³⁶ Education standards are also deficient, evidenced by poor student performance in international tests in mathematics and science, and university graduates who are inadequately prepared for jobs in the commercial world.³⁷

This does not bode well for the prospects of finding productive jobs for the region's relatively high youth population. Two-thirds of the region's population are under 30. In the member states of the Gulf Cooperation Council, 40% of people are under the age of 15. It is estimated that within only a decade, the Arab Gulf countries will need to create 4 million new jobs for their citizens, 80% of them in Saudi Arabia, just to prevent unemployment rates from rising. This will be a challenge for a region in which foreign workers comprise about 72% of the total labour force. If the jobs do not materialise, the economic and social exclusion of large numbers of disaffected youth in the Gulf region will not only stunt development but also lay the foundations for future social strife.

The irony, therefore, is that current investment by Asia-Pacific states in Middle Eastern oil and gas assets is helping to entrench corruption and repression in the region, and contributing to tendencies towards extremism and unrest. Enhancing the security of regimes in the Middle East at the present time by adding to their resource revenues has the potential to breed regional instability in the future. The perverse consequence of a new oil boom could be a Middle East that is far wealthier but even more unstable than it is today, with disturbing medium- to long-term implications for the rest of the world's increasing reliance on Gulf oil and gas.

Accordingly, while terrorist activities or a military strike on Iran might create short-term disruptions to oil and gas supplies from the Middle East and spikes in energy prices, entrenched deficiencies in governance and economic management in the region are more problematic in the long term. The prospect of social upheaval and regime changes can only serve to call into question the future profitability and viability of foreign direct investment in the development of energy resources in the region.

Implications for Australia

It is clear that the growing dependence on the supply of Gulf oil and gas to meet the demand of the net energy importers of the Asia–Pacific region, in particular China, India, Japan and South Korea, presents dual geopolitical concerns. On the supply side, the political instability of the Gulf and by extension, Yemen, threatens to contribute to volatile energy prices, which in turn contributes to the continuing sense of vulnerability amongst states with rising energy demands. On the demand side, the ability of the global markets to provide reliable and affordable oil and gas is critical to ensure that Asian consumers do not reach the decision to abandon the market in favour of unilateral deals, coercive diplomacy or some form of ‘resource conflict’.

Australia is already assisting towards providing stability of energy supplies through its contribution to the multinational combined Task Force 152, which is responsible for maritime security in the Gulf. Australia could play an even greater role in securing the supply of Gulf oil by contributing to the protection of the sea lines of communication that pass through the Indian Ocean from the Gulf to the Pacific. This could be done by providing support to the US and Japan in anti-terrorism and law-and-order operations at sea, and by developing bilateral maritime cooperation with India.

On the demand side, Australia ought to be concerned by the fundamentally different views of global energy markets currently held by China and the US. China’s view of energy security, according to Lieberthal and Herberg, ‘currently appears rooted in a statist, mercantilist mentality among political leaders in Beijing. The United States, on the other hand, has a stated policy of relying largely on global markets to deliver energy supply security.’ To date, those differences have made ‘effective dialogue on energy issues

both more difficult and more necessary.’³⁸

It is more necessary, as Michael Klare argues, because it is the market that facilitates the de-politicisation of relations between suppliers and consumers. Thus it remains important to Australia that major Asian consumers ensure that the market, rather than politics, ‘governs trade and crude.’³⁹

The actions of China are therefore of particular interest also for Australia, because if demand pressures were to convince China or any other major oil consumers to seek oil supplies beyond the relative safety of a ‘market-allocation’ device, this could threaten to ‘securitize’ energy issues in a far more traditional manner. Equally important is the way in which the US would interpret China’s actions and how it would respond. The implications for Australia of possible tension between China and the US over energy resources have not been lost on Canberra. As noted in the recently published Defence White Paper, growing economic interdependence resulting from globalisation is not a guarantee against the risk of inter-state conflict over resources.

However, the likelihood of the militarisation of energy security resulting in an actual conflict between China and the US is low, assuming both states continue to behave as rational actors. Not only would such a conflict result in potentially crippling energy prices, themselves undermining global security, it would also involve a retreat from globalisation upon which the economic development, and in turn the internal stability, of both states has been and continues to be dependent.

Therefore, to ensure the integrity of the current global system, on which Australia’s future prosperity and stability also depends, it is important for Australia to support measured, market-based solutions to the problems of energy security, ones that facilitate trust and promote multilateral,

regional, and bilateral cooperation on energy issues.

Australia can also contribute to the demand side of the equation presented in this report by addressing its own oil needs. Within the Asia–Pacific region, Australia is in the enviable position of being a net energy exporter, although it is a net importer of crude oil and refined petroleum. Currently, most of the oil that Australia imports comes from Southeast Asia. The largest source is Vietnam. However, like all oil-importing countries in the region, Australia is on a trajectory of importing an increasing quantity of oil, some of which will need to be sourced from the Middle East in the coming decades. So in addition to Australia’s dependence upon the economic development and prosperity of its Asian trading partners which themselves rely on Gulf oil, Australia too will become increasingly vulnerable to the short, medium and long-term risks to energy supplies from the Middle East that add a premium to energy prices.

Even if worst-case scenarios do not eventuate, the interplay of market forces in a revived global economy create further concerns for Australian policy-makers. A revival in the demand for oil and gas coupled with a contraction in supply caused by under-investment in energy infrastructure during the global economic downturn will likely drive energy prices upwards. This is despite the fact that, as already noted, global oil reserves remain sufficient for an estimated period of thirty to fifty years. As Michael Klare has concluded, ‘Ultimately, the only sure strategy for eliminating the “tyranny of oil” is to reduce our consumption of oil, period. That will require a far more ambitious plan of conservation and alternative-fuel development than those now being discussed in Washington.’⁴⁰ Or in Australia.

What is required, globally, is the transformation of the transportation sector from one almost entirely dependent on oil to one powered by sustainable energy, combining transportation efficiency and diversification. The latter might include renewables, bio-fuels and electric vehicles. Technology holds the key to that transition and Australia is already several years behind other countries who are seeking a commercially viable, and environmentally sustainable, alternative to a petroleum-based transportation system that would diminish their future dependence upon the import of oil sourced from unstable parts of the world.

A consoling, but also sobering thought is that, for the next few decades at least, the problems are primarily geopolitical. Wars and terrorist attacks on production and/or transportation facilities in the Middle East will most likely cause price spikes in the short to medium term while, longer term, the nature of the struggle for human security in the Middle East may add to regional instabilities there. A clear part of the longer-term concerns, though, also relate to perceptions of a growing mismatch between increasing demand and finite supply—a mismatch that would be seen as forming a primary constraint on the ‘provision of affordable, reliable, diverse, and ample supplies of oil and gas’. A growing sense amongst major consumers that energy security is becoming a zero-sum game would be a major worry for both regional and global relationships. Because of Asia’s growing reliance on Middle East energy, Australia could expect those tensions to be felt close to home. So it is worth our investing time and resources to do what we can to manage those political challenges of the energy market, alongside our current efforts to enhance efficiencies in oil and gas usage, and to grow alternative energy sources.

Endnotes

- 1 Jan Kalicki and David Goldwyn (eds) (2005) *Energy Security: Towards a New Foreign Policy Strategy* (Baltimore: The Johns Hopkins University Press) p. 9.
- 2 The statistics used in this paper are taken largely from *BP Statistical Review of World Energy June 2009*, the International Energy Agency 2008 *World Energy Outlook 2008 – Global Energy Trends to 2030*, and the US Government's Department of Energy *International Energy Outlook 2009* and country briefs.
- 3 Daniel Moran and James Russell, 2008, 'Introduction: the militarization of energy security' in Daniel Moran and James Russell (eds.), *Energy Security and Global Politics: the Militarization of Resources Management*, (Routledge Global Security Studies) p. 12.
- 4 *BP Statistical Review of World Energy June 2009*, p. 1.
- 5 The primary energy consumption by fuel in 2008 was: oil – 35%; coal – 29%; and gas – 24%.
- 6 In the United States, for example, oil provides 96% of the energy used for transportation with the transportation system accounting for 70% of total petroleum use, which in 2007 was 20 mb/d. In that year, the US' oil import bill totalled US\$327 billion in 2007 (representing an increase of 300% from 2002), which accounted for 35–40% of the US' overall trade deficit in 2006 and 2007 (compared to only 25% in 2002).
- 7 Brazil, Russia, India and China. To highlight the point, the US presently has more than 900 cars for every 1,000 people while China has around 30, and India less than 10.
- 8 Those figures exclude Canadian oil sands, which if included would range between 1.342 and 1.409 trillion barrels.
- 9 The so-called 'peak oil' debate is framed by two opposing views: the pessimistic view predicts an imminent oil production peak, while the optimistic view stipulates that the geological limits of oil reserves have not yet been reached and that new discoveries allow for resources to keep pace with demand.
- 10 In 2008, OPEC accounted for 76% of the world's oil reserves, but only 44.8% of the world's oil production. In contrast, non-OPEC sources accounted for only 24.1% of the world's oil reserves (including 10.2% from the states of the Former Soviet Union) and 55.3% of total production (including 16% from the states of the Former Soviet Union).
- 11 Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.
- 12 Iran also has 10.9% of the world's known oil reserves; Iraq has 9.1%, Kuwait has 8.1% and the UAE 7.8% of the world's proven oil reserves; and Qatar has 13.8% of the world's proven gas reserves.
- 13 China will require 221 bcm, an average annual growth rate of 5.8%, India will require 117 bcm, an average annual growth rate of 4.8%, and Japan will require 128 bcm, an average annual growth rate of 4.8%.
- 14 In this Report, the term 'Asia–Pacific' refers to the area encompassing South Asia, East Asia, Southeast Asia, and Australasia.
- 15 In 2008, the US and China accounted for 9.6% and 22.5% respectively of global oil consumption.
- 16 Shaofeng Chen and Tin Seng Ling (2008) 'China's Strategic Petroleum Reserves: An Update', *EAI Background Brief No. 371* (Washington: Department of Energy) pp. 8–10.
- 17 Japan's total oil consumption has actually decreased since the 1970s, a consequence of fuel substitution, an aging population and the implementation of energy efficiency targets. Yet oil remains Japan's most consumed energy resource.
- 18 Those are the China National Petroleum Corporation (CNPC), the China Petrochemical Corporation (Sinopec), and the PetroChina arm of the China National Offshore Oil Corporation (CNOOC).
- 19 Due to a projected increase in domestic production (see endnote 3) and increasing imports of Canadian oil shale.
- 20 Iran's 'buy back' condition included in its oil and gas deals rewards investment in developing a field with a share of production for a period before the state repurchases the field.

- 21 South Korea deployed some 3,600 non-combat troops to the northern Iraqi town of Irbil from 2004 to 2008 to help rebuild the region and provide medical assistance.
- 22 For an analysis of the link between volatile oil prices and recession in the US and OECD, see Donald W Jones, Paul N Leiby, and Inja K Paik (2004) 'Oil Price Shocks and the Macroeconomy: What Has Been Learned Since 1996', *The Energy Journal*; vol. 25, no. 2, pp. 1–32.
- 23 Bassam Fattouh, 2007, 'How Secure Are Middle East Oil Supplies?', *WPM* 33, Oxford Institute for Energy Studies, p. 2.
- 24 The US is required to meet a 30 June deadline for its combat forces to leave urban areas. For terms of the agreement see: http://www.mnf-iraq.com/images/CGs_Messages/security_agreement.pdf. In May this year, reflecting on existing and future violence in Iraq, General Ray Odierno (the US' top General in Iraq) has stated that, 'There'll always be some sort of low-level insurgency in Iraq for the next 5, 10, 15 years. The issue is, what is the level of that insurgency? And can Iraqis handle it with their own forces and their own government?' Elisabeth Bumiller, 'General Sees a Longer Stay in Iraq Cities for U.S. Troops', *New York Times*, 8 May 2009: http://www.nytimes.com/2009/05/09/world/middleeast/ogmilitary.html?_r=1
- 25 The most strategic energy targets would be Abqaiq and the refining and export facilities at Ras Tanoura and Juaymah on the Gulf, and the Rabigh and Yanbu complexes on the Red Sea.
- 26 In addition to the Saudi General Security Service, an estimated 35,000 troops constitute its Special Emergency Forces and an additional 10,000 troops make up the Special Security Forces.
- 27 The head of the group is Nasir Wuhaiishi (confirmed by Ayman Al-Zawahiri) and his deputy is Said Ali al-Shihri, a former prisoner at Guantanamo Bay, released from Saudi custody in 2007.
- 28 A number of other states in the Middle East are presently pursuing plans to build nuclear energy plants, including Egypt, Jordan, Saudi Arabia and the UAE. The plants are for civilian nuclear power for power generation and water desalination as well as for agricultural, industrial and medical uses. In the case of the plant in the UAE, unlike Iran, a neutral country will be responsible for enriching the required uranium and reprocessing of spent fuels, thus reducing the potential for the crossover with a nuclear weapons program.
- 29 Iran signed the NPT in 1968 and has claimed consistently that its nuclear activities are directed to peaceful purposes. However, in 2003–2005, following revelations by the PMOI (an Iranian opposition group) about secret nuclear sites, the IAEA conducted intensive inspections, which revealed that for almost twenty years, Iran had engaged in a range of undeclared nuclear activities, including uranium enrichment and plutonium separation efforts, including the enrichment capacity of Iran's heavy-water 40 megawatt reactor being built at Arak. <http://www.iaea.org/Publications/Documents/Board/2004/gov2004-83.pdf>
- 30 In September 2005, the IAEA determined Iran to be in non-compliance with its NPT Safeguards Agreement, and in February 2006 it reported Iran's case to the UNSC. On 31 July 2006, the SC adopted UN Security Council Resolution S/2006/1696 (<http://www.un.org/News/Press/docs//2006/sc8792.doc.htm>), which required Iran to cease its enrichment and reprocessing activities. The SC has passed three subsequent resolutions imposing sanctions on Iran for its failure to comply with Resolution 1696. On 15 September 2008, the IAEA concluded that Iran was continuing to resist efforts to respond to allegations of military-related work. Two months later it reported that, contrary to the decisions of the SC, Iran had not suspended its enrichment related activities.
- 31 In the report, the IAEA noted that Iran had 'significantly expanded uranium enrichment with almost 5,000 centrifuges now operating' at its underground Natanz enrichment hall, having 'increased its rate of production of LEU [Low Enriched Uranium] [and] boosting its stockpile by 500 kg to 1,339 kg in the past six months.' Further, in an interview with BBC in June 2009, Mohamed ElBaradei, head of the IAEA, stated that 'It is my gut feeling that Iran would like to have the technology to enable it to have nuclear

weapons, if it decides to do so. They want to send a message to their neighbours, to the rest of the world, don't mess with us.' http://news.bbc.co.uk/2/hi/middle_east/8104388.stm

- 32 For an analysis of Iran's current nuclear and missile programs, see EastWest Institute. 2009, *Iran's Nuclear and Missile Potential: A Joint Threat Assessment by U.S and Russian Technical Experts*, New York.
- 33 President Obama has said he will give diplomacy until the end of 2009 to resolve the issue, but he has also announced his commitment to seeking 'the peace and security of a world without nuclear weapons.' To this end, the Obama administration will negotiate a new Strategic Arms Reduction Treaty with Russia and pursue US ratification of the Comprehensive Test Ban Treaty. During a speech in Prague in April 2009, Obama identified Iran's nuclear and ballistic missile activity as posing 'a real threat, not just to the United States, but to Iran's neighbors and our allies.' He stated that as long as this threat exists, the US will go forward with a missile defence system in Europe. However, if 'the Iranian threat is eliminated, we will have a stronger basis for security, and the driving force for missile defense construction in Europe will be removed'. [http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered/] This and other statements Obama has made highlighting his opposition to the proliferation of nuclear weapons might not be viewed as simply aimed at mobilising diplomatic support. He has also stated that if negotiations and UN sanctions do not work in securing an end to Iran's enrichment program under its current conditions, no option, including a military response, has been 'taken off the table'. [Jon Meacham (2009) Interview with Barack Obama, *Newsweek*, 15 May <http://www.newsweek.com/id/197891/page/3>]
- 34 Traces of processed uranium have been found by IAEA inspectors at the site of the nuclear reactor that Syria was building at Dir a-Zur (located in eastern Syria), which was designed to produce weapons-grade plutonium.
- 35 For an assessment of the linkage between resource wealth, growth and autocracy in the Middle East see Suzanne Maloney (2009) 'The Gulf's Renewed Oil Wealth: Getting it Right this Time?', *Survival*, vol. 50, no. 6, pp. 129–150.
- 36 The current financial crisis has had a detrimental effect on employment trends in the Gulf Cooperation Council countries, having reversed the gains made in previous years due to the strategy of labour market 'nationalization' through citizen quotas in private sector employment. http://www.carnegieendowment.org/files/economic_crisis_wc_english.pdf
- 37 Arab Labor Organisation. 2008, *The First ALO Report on Employment and Unemployment in Arab States: Towards Effective Policies and Mechanisms* <http://www.alolabor.org/nArabLabor/images/stories/Tanmeya/Reports/firisthumanreport/firistemploymentreport.doc>
- 38 Kenneth Lieberthal and Mikal Herberg, *NBR Analysis*, vol. 17, no 1, April 2006, p. 9.
- 39 Michael Klare, 'Tithing at the Crude Alter', *The National Interest*, July/August, 2009. <http://www.nationalinterest.org/Article.aspx?id=21648&usg=AFQjCNHO8hdBkUBVZ2gXdrfvESNaPPy76Q>
- 40 Michael Klare, 'Tithing at the Crude Alter', *The National Interest*, July/August, 2009. <http://www.nationalinterest.org/Article.aspx?id=21648&usg=AFQjCNHO8hdBkUBVZ2gXdrfvESNaPPy76Q>

About the Author

Dr Leanne Piggott is the Deputy Director of the Centre for International Security Studies where she heads up the new Energy Security program. She is a specialist on the Middle East, with a particular interest in governance reform and security in the region, and is the author of the book, *The Arab-Israeli Conflict: A Timeless Struggle*. Her other recent publications include *The Evolving Terrorist Threat to Southeast Asia: A Net Assessment*, a jointly authored book published by the RAND Corporation.

Leanne is a member of the Australian Government's Foreign Affairs Council and the Editorial Advisory Board of the Department of Foreign Affairs and Trade.

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Tel +61 2 6270 5100
 Fax + 61 2 6273 9566
 Email enquiries@aspi.org.au
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