GOVERNMENT OF
WESTERN AUSTRALIA

Energy Resources Down Under:
Right Place, Right Time

13 April 2010

Note: All figures are in Australian dollars (AUD)

Energy Resources Down Under – Right Place, Right Time

Speech by Hon Colin Barnett MLA, Premier of Western Australia

Introduction

It is an honour to be invited to Rice University to address the James A. Baker lll Institute for Public Policy. Both the University and Institute enjoy a well deserved international reputation.

It is also a pleasure to be in the great state of Texas, though it is with a sense of trepidation I note that my own state of Western Australia is three times the size of Texas. Having said that, I might not get out alive!

We have much in common. Texas found new prosperity with the oil discoveries of the 1930's. For Western Australia, it was a gold rush in the 1890's. A young American mining engineer, Herbert Hoover, was among the thousands who came to Western Australia in search of fame and fortune.

Texas is the United States' top oil producing State. Houston is the energy capital of the world. Western Australia might claim to be the world's leading mining economy. Perth, the capital city, has become the centre of Australia's petroleum industry.

We also have a link through space exploration. Perth became known as the "city of lights" after astronaut John Glenn identified its location from space and thanked the people of Perth for leaving the lights on as he orbited overhead. The Carnarvon tracking station in Western Australia relayed signals to the Houston Space Center during the Apollo missions, including the lunar landings. Even Skylab managed to disintegrate and fall to earth over Western Australia in 1979.

Australia at Asia's Edge

Australia is in the top 20 of world economies. It has a federal structure of government like that of the United States. Powers are divided between the federal government, broadly responsible for laws affecting the nation such as taxation, defence and immigration, and six state governments, responsible for areas such as health, education, environment and police.

The federal government is headed by the Prime Minister, Kevin Rudd, while the six state governments are headed by Premiers, of which I am one. My equivalent in United States terms would be your State Governor, Rick Perry. Our parliamentary system is more similar to that of the United Kingdom.

With just 22 million people, Australia's population is small in comparison to the billions of people living to our north.

Australia is a prosperous, progressive and peaceful nation. Its historic ties to the United Kingdom and the Commonwealth nations remain strong. Next year, Perth will host 54 Commonwealth nations at the Commonwealth Heads of Government Meeting. Although today, Australia's most important defence and strategic alliance is with the United States. This is based on the ANZUS Treaty signed in 1951. Australians have not forgotten that it was the United States that came to our rescue at the Battle of the Coral Sea in 1942.

Asia and Australia

As both a first world economy and western society, Australia holds a unique geo-political position, perched as it is on the southern extremity of Asia. After two centuries of feeling distant and isolated from Europe and America, suddenly Australia finds itself near the centre of the action with the Asian economic expansion. There is no doubt that the emergence of a modern Asia is the economic and political phenomenon of this century.

Australians have not always felt comfortable with their proximity to Asia. At one time, Australia's immigration policy – the White Australia Policy - actively discriminated against Asian immigration. In more recent times the issue has been the arrival of asylum seekers by sea – the so-called 'boat people'. This continues to be a contentious political and social issue.

My own observation is that a new and younger generation of Australians is far more comfortable with our closeness to Asia. If nothing else, one in 12 Australians were either born in Asia or are of Asian descent. That figure will continue to grow.

What we are now seeing is a modern Australia transforming itself from being an interested observer of Asia to a full participant in Asia.

The Mining State

The state of Western Australia covers one third of the Australian continent. As the west coast state, it is physically and economically closer to Asia than Australia as a whole, with the Indian Ocean dominating most of its coastline. Western Australia is at the forefront of Australia's relations with Asia and has been since the 1960's.

With a land area of 2.5 million square kilometres (965,000 square miles) and stretching north to south over 2,400 kilometres (1,490 miles), it is hardly surprising that isolation and distance have a pervading influence over almost everything. The trip from Perth to the Kimberley in the far north of the state is longer than London to Moscow. There are only nine countries in the world with a larger land area than Western Australia. Perth is second only to Honolulu as the most isolated capital city in the world. With so much land and so few people, it is a paradox that three quarters of the state's 2.3 million people live in the Perth metropolitan area.

Natural resources drive the Western Australian economy. Agriculture is important, as is tourism, education and health. We boast a Nobel Laureate in Barry Marshall, who discovered a cure for stomach ulcers, Fiona Wood, the inventor of spray on skin for burns victims, and Ralph Sarich, the inventor of the orbital engine. But it is mining and petroleum that dominate and for which the state is best known.

Western Australia is blessed with an extraordinary natural endowment of mineral and petroleum resources. The mining sector is mature, the petroleum sector is still in the comparatively early stages of development. An American petroleum executive recently said to me that Western Australia's offshore oil and gas reserves were "at the stage the Gulf of Mexico was 30 years ago".

If Australia is known for its mining industry, then that is because of Western Australia. The state accounts for 62 per cent of Australia's mineral production (excluding coal), 73 per cent of natural gas and 64 per cent of crude oil and condensate. It has over 500 commercial mining and petroleum projects producing over 50 different products. The value of mining and petroleum production in Western Australia last year was more than $70 billion. For Australia as a whole, mining and energy exports make up nearly 70 per cent of all merchandise exports.

The true significance of the resources sector is borne out by the shares of world production from Western Australia and the even larger shares of international trade in key commodities.

Western Australia's Resources Industry

Commodity	World Production Share %	World Trade Share %	Value 2008/09 $billions
Iron ore	19	37	34
Alumina	20	n/a	5
Nickel	15	36	3
Diamonds	9	n/a	0.3
Mineral sands	17	n/a	0.5
Gold	6	n/a	5
LNG	7	7	9
Salt	4	n/a	0.4

In international trade, Western Australia 'punches above its weight', producing more than one third of exports with just one tenth of the nation's population. What is not so obvious is the importance of commodity trade to Asia and the role played by the Western Australian mining industry. Sixty six per cent of Australia's exports to China are from Western Australia. For Japan, Western Australia is the source of 33 per cent of exports. For India, the corresponding figure is 42 per cent.

Western Australia is being relentlessly drawn closer to Asia. Given the long term growth prospects of Asia and the seemingly insatiable demand for raw materials that Western Australia has, it is possible that the state will produce over 40 per cent of national exports by the end of the decade. Three quarters or more of these will be destined for Asia.

That is the significance of the mining industry and that is what makes Western Australia important. It is why Western Australia might claim to be the world's leading mining economy. It is why Western Australia leads Australia's relations with Asia.

International Business

Not surprisingly, global resource companies have a major presence in the Western Australian economy. Overseas investment has always been welcomed and continues to be. Indeed, the state could not have succeeded without it.

The combination of natural resources and relative proximity to Asian markets is the attraction. To that can be added the comfort of doing business in a first world nation with both political and legal stability. The protection of intellectual property is just one consideration.

The world's two largest mining companies, BHP Billiton and Rio Tinto, each have around one third of their global assets in Western Australia. Among American mining companies, Alcoa has three alumina refineries in the state, which collectively produce almost 11 per cent of the world's total production. Newmont Mining has around one third of its global gold reserves in Western Australia, though this figure is likely to be higher. For Newcrest Mining, the figure is around 90 per cent of gold reserves. Mining services companies include Kellogg, Halliburton, KBR, Fluor, and Schlumberger. Caterpillar sells about seven per cent of its total heavy earth moving vehicles into Western Australia.

There are around 30 international oil and gas companies and more than 40 oil and gas service companies with offices in Perth. It is a 'who's who' of world companies - Apache Corporation, BHP Petroleum, BP, Chevron, Conoco Phillips, ExxonMobil, Hess Corporation, Inpex, Shell, Total, Woodside and others. The Gorgon liquefied natural gas project, which has just gone into construction on Barrow Island off the Western Australian coast, is, at $43 billion (US $39 billion), Australia's biggest project and the largest Chevron has ever undertaken, either inside or outside America.

I'm conscious that many of Australia's resource projects are dependent on United States investment – that's one of the reasons I'm here! Just over 24 per cent of Australia's direct foreign investment comes from America, making you our largest direct foreign investor. Your presence and contribution to Western Australia's economy and, more broadly, the Western Australian community has been long-standing, substantial and overwhelmingly positive.

What is sometimes not well understood by overseas companies is the legal ownership of minerals and petroleum in Australia. The situation is very different from that of the United States, where ownership is more complex and some landowners have mineral ownership rights. The constitutional arrangements in Australia place the ownership of natural resources in the hands of government on behalf of the people. In other words, a private landowner has no rights to the mineral deposits below the surface.

I remember well a discussion some years ago with an American mining executive who had been appointed to head a major mining company. He was somewhat shocked when I pointed out that the state government, not the company, owned the minerals he was mining. He had been in the job for several months.

There is a further variation on ownership. Mineral deposits below land are owned by the relevant state governments, as are petroleum reserves below land and beneath the sea to three miles beyond the shoreline. Beyond the three mile limit, all petroleum and mineral deposits are owned by the federal government.

My only advice to an overseas company is to understand the role of government in Australia and maintain a good working relationship with federal and state governments. You need both.

As to the future, there is much to be optimistic about. Many of the developing nations of Asia have been little affected by the global financial crisis of 2008 and its aftermath. China and India have both returned to growth rates in the range of five to nine per cent. Japan, the most mature economy in the region, has been badly affected, with a negative growth rate of 5.4 per cent last year. Australia itself did better than most developed nations, slowing to just over one per cent growth over the past year. Forecasts for growth this year are around 1.5 per cent and 2.75 per cent for 2010-11.

Asia's expansion translates directly into increased demand and higher prices for key commodities. For Western Australia, the impact is magnified. The iron ore price has doubled this year. Gold has increased by around 20 per cent over the past year and nickel by 120 per cent.

This further translates into an investment surge in new mining and petroleum projects. While not every project will go ahead as its promoters may wish, there is around $170 billion worth of projects in the investment pipeline for Western Australia over the next five or so years. The biggest push is in iron ore and natural gas.

NEW RESOURCE PROJECTS IN WESTERN AUSTRALIA (Indicative data only)[1]

Name	Type	Owners	Capex ($ Billion)	Start Date	Status
Worsley Refinery Expansion	Alumina	BHP Billiton/Worsley Alumina	2.5	2012	Construction commenced
Ammonium Nitrate Plant	Ammonium Nitrate	Burrup Nitrates Pty Ltd	0.6	2013	Going through approvals process
Underground Mine Stage 1	Diamonds	Argyle Diamonds	1.2		Ongoing construction
Browse LNG Precinct Project	Gas	Woodside/BP/BHP Billiton/ Chevron/Shell	30.0	2016/2017	Feasibility
Devil Creek	Gas	Apache	0.8	2011	Under construction
Gorgon	Gas	Chevron/Shell/ExxonMobil	43.0	2014	Under construction
Macedon	Gas	BHP Billiton/Apache	1.0	2014	FEED
North Rankin Development	Gas	Woodside Energy	5.0	2013	Under re-development
Pluto	Gas	Woodside	12.0	2010	Under construction
Scarborough	Gas	ExxonMobil/BHP Billiton		2017	Concept select
Wheatstone	Gas	Chevron/KUPEC/Apache	23.0	2015	Pre FEED
Australian Premium Iron Joint Venture - Iron Ore Mine	Iron Ore	Aquila/AMCI	4.0	2015	FEED
Brockman 4	Iron Ore	Hamersley Iron Pty Limited	2.0		Under construction
Cape Lambert Project	Iron Ore	MCCAH	3.7	2015	Pre - FEED
Cape Preston Mine and Processing Projects	Iron Ore	CITIC Pacific	5.2	2011	Under construction
Extension Hill Magnetite Mine	Iron Ore	Asia Iron	0.7	2011	Construction to commence
Iron Ore Rapid Growth Project 4	Iron Ore	BHP Billiton	2.1	2009	Operational
Iron Ore Rapid Growth Project 5	Iron Ore	BHP Billiton	5.3	2011	Under construction
Iron Ore Rapid Growth Project 6	Iron Ore	BHP Billiton	2.1	2012	Seeking environmental approvals
Jack Hills Stage 2 Hematite Mine	Iron Ore	Crosslands Resources	0.8	2006	Operational
Karara Iron Ore Project	Iron Ore	Gindalbie Metals/Ansteel	1.8	2011	Construction commenced 2009

[1] Department of State Development, April 2010

Name	Type	Owners	Capex ($ Billion)	Start Date	Status
Magnetite Iron Ore Mine	Iron Ore	Australasian Resources Ltd	2.7	2011	Under consideration
Mesa A/Warramboo Iron Ore	Iron Ore	Robe River Mining Co Pty Ltd	1.2	2010	Operational
Mine, Rail and Port Project	Iron Ore	Fortescue Metals Group	3.2	2009	Commenced operation
Southdown Magnetite Mine	Iron Ore	Grange Resources	1.6	2013	Addressing non environmental issues
Weld Range Hematite Mine	Iron Ore	Sinosteel Midwest Corporation	0.8		BFS to be completed in 2010
Western Turner Syncline	Iron Ore	Hamersley Iron Pty Limited	0.2		Under construction
Ord East Kimberley Expansion Project	Irrigation	WA State Government/ Federal Government	0.4	2012	Under construction
Spinifex Ridge	Molybdenum/Copper mine	Moly Mines	1.3		Seeking Finance
Cossack Wanaea Lambert Hermes Redevelopment Project	Oil	Woodside Energy	1.8	2010	
Pyrenees Oil Project	Oil	BHPB	2.0	2010	Operational
Van Gogh Oil	Oil	Apache	0.6	2010	Operational
Oakajee Industrial Estate	Port/Rail	WA Govt/OPR	4.0	2014	Pending
7 Mile Power Station	Power station	Hamersley Iron	0.7	2010	Under construction
Bluewaters II Coal Fired Power stations	Power stations	Griffin Energy	0.4		Construction
Bluewaters III and IV Coal Fired Power Stations	Power stations	Griffin Energy	0.8	2015	Environmental approvals issued
Coal to Urea Plant	Processing plant	Perdaman Chemicals and Fertilisers	3.5	2013	Commenced EPA approvals process
Yannarie Salt Project	Salt	PTT Asia Pacific Mining	0.2		Review by company
Yeelirrie Uranium	Uranium	BHP Billiton		2014	Environmental assessment
TOTAL			**172.2**		

The Dream of Value Adding

Spectacular as the growth of the mining and petroleum industry has been over the past 50 years and promises to be over coming years, it is fair to say that not all of the state's objectives have been achieved.

In Western Australia, most of the large mining and petroleum projects have been developed under special legislation or state agreement acts. These are designed to facilitate project development but do not extend to equity participation. While Government does have a say, the industry remains a truly private enterprise industry.

The state agreement acts cover around 80 per cent of mining and petroleum production in the state. They carry a 'prestige status', especially in Asia, and have been important in securing project finance and long term sales contracts. The actual detail of the agreement acts vary from project to project, though they are mostly about long term resource security and the right to build and own infrastructure, including railways, ports, pipelines and towns. Some have also included royalty concessions as a means of encouraging investment, though these are now being phased out.

The agreement acts also usually include an element of mutual obligation or, if you like, corporate responsibility. This may involve local employment, housing, community facilities and a fair opportunity for local contractors to bid for work. The most debated obligation, especially for the older agreement acts, is a requirement to add value through the further processing of natural resources. The idea being that the state economy would develop beyond mining, as iron ore was turned into steel, as bauxite was turned into aluminium metal and as natural gas was turned into chemicals.

Admirable as the further processing obligations are, they have not worked. The success stories have been limited to the production of intermediate products or the application of new technologies to low grade mineral deposits. For example, the conversion of bauxite to alumina, the processing of mineral sands to a titanium oxide and the cooling of natural gas to a liquid. Low grade ore bodies have been commercialised through the carbon in pulp method for gold, the Bayer process for bauxite and the pressure acid leach technology for lateritic nickel ores.

As a resources minister in the 1990's, I tried to go further to make the dream of value adding come true. Like those before me, my success was limited. Western Australia is still at the mining end of the value adding chain.

I now have a slightly different view. The objective of value adding is still there, though the pathway is different. If you think about it, there is little to be said for trying to make an iron ore miner become a steel producer or a natural gas producer become a chemical company. And why would a raw material producer want to go into competition with their overseas customer?

I came to this rather obvious realisation during my days in the political wilderness following an election loss in 2005. The defining moment for me was when Western Australia could not compete with the small Caribbean island of Trinidad on a gas to liquids project. What Trinidad had was a ready-made industrial precinct in which the processing plant could be easily located.

The objective of value adding for this century is more likely to be achieved by attracting the buyers of natural resources to set up their manufacturing plant in Western Australia. To do that two things are necessary. First, a world class industrial site, with all the necessary services, in which to locate the plant and second, the availability of reliable and competitively priced energy. After all, the further processing of minerals is energy intensive.

As far as sites are concerned, the state government is working with industry on the development of a new deep sea port at a place called Oakajee on the mid west coast. This will be serviced by an adjacent industrial estate and an extensive railway network of several hundred kilometres. This project, at a total value of around $4 billion, has the potential to develop a major new mineral province. Further north in the Pilbara region, a new iron ore port is planned at a location known as Anketell. In the far north Kimberley region, a specialist gas processing precinct is planned at James Price Point. Each of these projects is an immense undertaking in its own right.

If the dual policies of industrial estates and competitive energy can be achieved, then Western Australia may just capitalise on the unique opportunity presented by the Asian expansion and realise the dream of moving beyond a mining economy. The world class mining and petroleum companies may be joined by their customers in setting up manufacturing projects in Western Australia. That is the next step. A step in which energy is the key.

Australia's Energy Advantage

Australia, as a nation, is rich in energy resources. This includes coal on the east coast, gas on the west coast, uranium in the interior and wide potential for renewable energy.

Coal, in spite of its high level of greenhouse gas emissions, is certain to continue as a major energy source for decades to come. Around 42 per cent of the world's electricity is generated using coal. For Australia, the most valuable black coal deposits are found in the east coast states of Queensland and New South Wales. The state of Victoria, also on the eastern seaboard, has large reserves of a lower quality brown coal.

Australia has the fourth largest coal reserves after the United States, the Russian Federation and China. Australia also ranks fourth in coal production. In world trade, Australia is the top coal exporter with total exports (both thermal and metallurgical) of 260 million tonnes in 2008. For metallurgical coal, used in steel making, Australia accounts for nearly 60 per cent of global exports.

With Australia's electricity generation overwhelmingly dependent on coal-fired power stations, accounting for about three quarters of total generation, the federal government is putting great faith in clean coal technology. I admit to being somewhat sceptical as these technologies are yet to be proven and their retro-fitting to existing power stations seems problematic.

Australia has a similarly significant position in uranium, with easily the world's largest recoverable reserves at an estimated 36 per cent. The next highest reserves are in Kazakhstan (15.5 per cent), the Russian Federation (10.2 per cent) and Canada (8.7 per cent).

In terms of current production, Australia ranks third, being marginally behind Canada and Kazakhstan. With nuclear power generation expected to increase globally by around 45 per cent to 2030, it is clear that there will be a significant expansion of uranium mining in Australia. In an Asian context, it is worth noting that the world's most populous nations – China and India – each have only two per cent of total electricity generation from nuclear power. Both have major plans for expansion. China has 21 nuclear power plants currently under construction. My own information is that Japan will also ramp up its nuclear power industry.

At present, Australia has only three uranium mines, even though it has been a uranium producer since the 1930's. The largest mine, Olympic Dam in South Australia, is also the world's largest uranium deposit and is about to undergo a major expansion.

Despite Western Australia having around three per cent of the world's uranium reserves, my state does not, as yet, have a producing uranium mine. However, there are 28 known deposits, with several companies progressing plans for mine development. The most advanced are Toro Energy's Lake Way deposit, BHP Billiton's Yeelirrie deposit and Mega Uranium's Lake Maitland deposit. There is a lot more uranium yet to be discovered in Western Australia.

As an aside, uranium mining was a major political issue at the most recent state election held in September 2008. The then Labor Government had a policy of no uranium mining. This was an unusual policy position to have in a mining state. My party, the Liberal Party, has always had a pro-uranium mining position. In spite of a strong scare campaign by Labor, they lost the issue and the election. I can honestly say that during the entire campaign, only two people approached me to express their opposition to uranium mining. It just shows the average person has more sense than the average politician.

In a geo-political sense, it is worth noting that, as a signatory to the Nuclear Non-Proliferation Treaty, Australia will only export uranium to treaty members. This includes China and Japan but, at this stage, not India.

On renewable energy, Australia has a mix of applications – hydro, wind, solar, geothermal, wave, tidal and bioenergy. In total, renewable energy accounts for 6.5 per cent of electricity generation. Importantly, the federal and state governments have jointly committed to a target of 20 per cent of renewable energy for electricity generation by 2020.

In Western Australia, we have a natural advantage in a number of areas. For starters, it's fairly windy. Average wind speeds are comparable with those in the most favourable areas throughout the world for wind energy. Australia's first wind farm was built near Esperance in the State's south and my government has recently approved a new wind farm that will more than double the state's installed wind capacity.

While Western Australia is a very sunny place, application of solar power is mostly of a smaller scale in the remote parts of the state where transport costs make diesel power generators expensive.

The state also has a growing expertise in biomass energy. A local university – Murdoch University – is achieving some of the world's best production rates of oils from algae grown in open saline ponds. Western Australia is an ideal location for algae biofuel because of its access to seawater, industrial carbon dioxide and one of the best resources of sunlight in the world.

Important as this research and development is, it is natural gas that is at the centre of energy development.

Natural Gas – The Biggest Game in Town

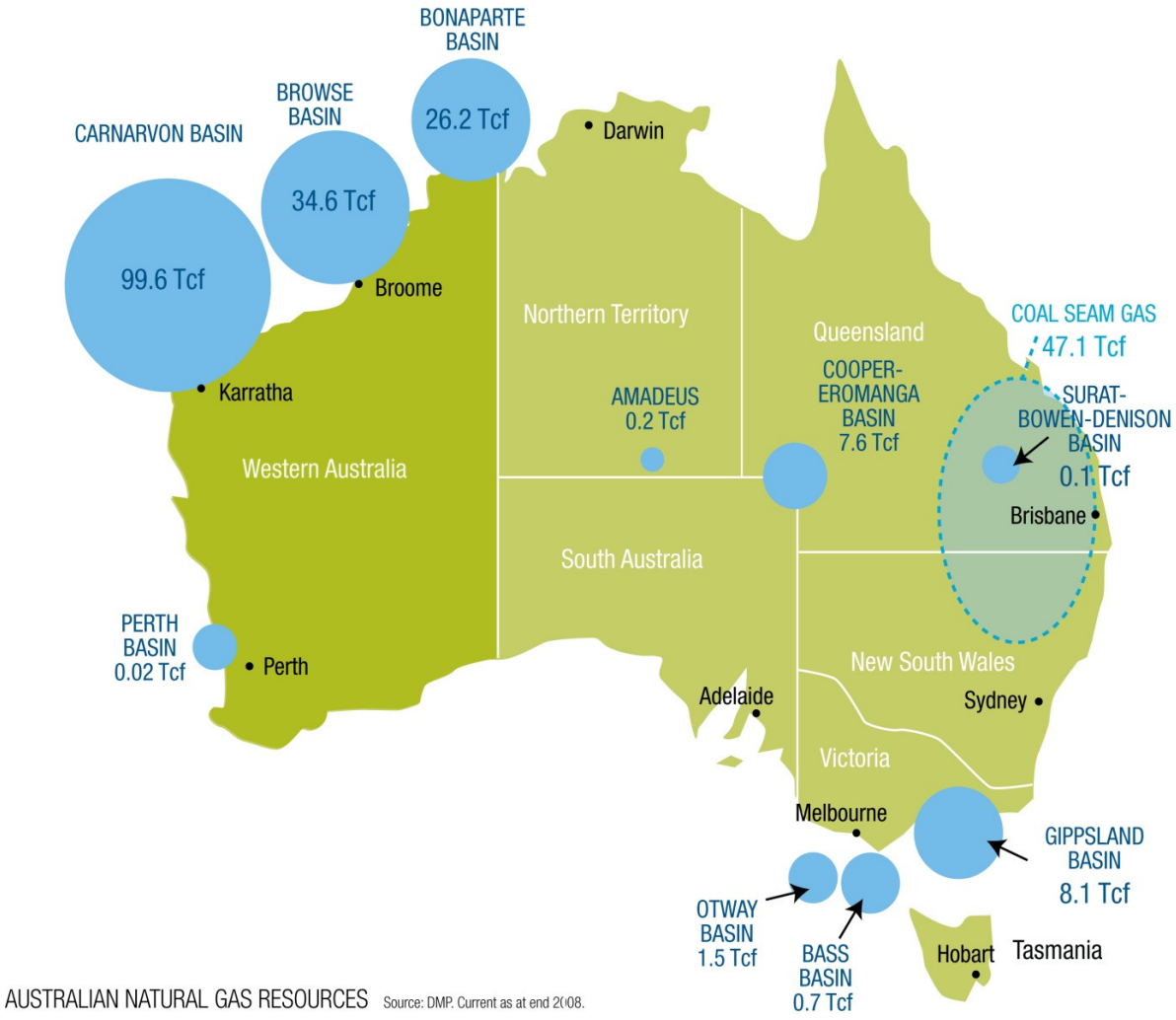
The growth of the petroleum industry, both oil and gas, has been for Western Australia the most important economic change since the Pilbara iron ore projects of the 1960's. The value of petroleum production has increased more than eight times since 1992 and is now around $21 billion, with crude oil and condensate worth $11 billion, LNG $9 billion (with liquefied petroleum gas and other gas worth about $1 billion). The industry has essentially relocated from Melbourne to Perth, although I note that some US companies still have their head offices in Melbourne.

In every sense, the biggest game in town is the development of mega projects for the export of LNG. These projects, both existing and proposed, dwarf any other industrial projects in Australia.

The global demand for natural gas is expected to grow more quickly than that for oil or coal. Gas is a clean and flexible fuel. The emissions from a combined cycle gas plant are around one third of that from a conventional coal fired power station. Gas also has a hierarchy of use from town gas to electricity generation to chemical production. For countries dependent on energy imports, gas is important for both the security and diversification of supply. All of these advantages are well understood in Asia. Asia likes gas.

At present, natural gas provides around 21 per cent of world primary energy. Consumption is growing at a strong three per cent a year. By 2030, it is expected that global demand for natural gas will have increased by 55 per cent from the 2005 level and that gas will be the energy source for some 27 per cent of world electricity generation.

Australia's Natural Gas Resources



Australia's gas reserves are not large in comparison to world reserves, making up only two per cent of the total. They are, however, relatively undeveloped and strategically located in the Asia Pacific region. Over 90 per cent of Australia's gas reserves are to be found off the Western Australian and Northern Territory coast. The Carnarvon, Browse and Bonaparte basins have proven reserves of 160 trillion cubic feet (Tcf). My own estimate is that ultimate reserve levels will prove to be well in excess of 200 Tcf as further discoveries are made. To put this in context, an easy rule of thumb is that three Tcf of gas is enough to produce two million tonnes of LNG a year for 20 years. Australia as a whole consumes just over one Tcf of gas a year and in our history has used only 27.7 Tcf.

Whichever way you look at it, the gas reserves off the Western Australian coast are world class and still in their early stages of discovery and development. To this point, only 11 Tcf has been used. These gas reserves are Australia's most valuable natural resource. There is enough gas to transform the Western Australian economy and enough gas for export. This is, potentially, a 100 year resource.

The first major gas development was the North West Shelf joint venture. The gas was off the remote Pilbara coast and distant from any market. The two stage project saw gas delivered to Perth by a pipeline in 1984 and then the export of LNG to Japan in 1989.

Today, after successive expansions, the North West Shelf project has an installed capacity of more than 16 million tonnes per annum (Mtpa) of LNG. The only other producing Australian project, at this stage, is ConocoPhillips in the Northern Territory with a capacity of 3.7 Mtpa.

For natural gas and LNG the most exciting and challenging times are yet to come. For Western Australia this is a spectacular opportunity. Before I comment on the new projects, either in construction or proposed, it is worth making some brief comments on world LNG trade.

The first thing to note is that the sea transport of natural gas is a comparatively new industry. The trade was pioneered by the French, with the first ever LNG shipment from Algiers to Britain in 1964. The first Asian trade was from Alaska to Japan in 1972.

The industry is not only young, it is essentially Asian. Around two thirds of world LNG demand and over 40 per cent of world LNG production is in the Asia Pacific region. The Middle East accounts for a further 25 per cent of production. It is Australia's closeness to Asia that makes our gas so important. It takes seven to 10 days to ship LNG from Western Australia to customers in Asia, which is half the time it takes to ship from the Middle East.

The other unique feature of this industry is that it is a select club. There are only 15 export nations and 18 import nations. Most of the producer nations can be further categorised as developing economies with direct government involvement in their LNG projects through state owned corporations and production sharing agreements. This includes Qatar, Malaysia, Indonesia, Algeria and Brunei. Australia is the exception to the rule. The North West Shelf project was for many years the only truly private sector LNG project in the world.

Market structures and contract pricing is complex. With large investment decisions, for both buyers and sellers, the industry has grown on the basis of long term sales contracts, typically for 20 year periods. It is only in more recent years that short term contracts and spot sales have developed but these account for only a very small share of total trade

As to market growth, it is a case of onwards and upwards. Asian economic growth and the advantages of natural gas are driving the market. Over the past four years, world LNG production has grown by around 30 per cent to almost 180 Mtpa. Forecasts are for world LNG demand to reach 290 Mtpa by 2015. Demand for LNG in Asia is expected to more than double by 2030.

With Australia close by and with largely undeveloped reserves, the implications are obvious. Existing and proposed LNG projects, mostly in Western Australia, show an investment cycle of world proportions. Exports from the Gorgon project alone will account for eight per cent of world supply. Production is set to treble by 2020 to 60 Mtpa and elevate Australia from its current ranking as the world's sixth largest LNG exporter to number two in the world, second only to Qatar.

Existing and proposed LNG projects in Australia

Project	Companies	Status	Capacity (Mtpa)	Capex $billion	Start-up	Basin
Browse LNG (Brecknock and Scott Reef trains 1-3)	Woodside/Chevron/ Shell/BP/ BHP Billiton	Planned	Up to 15	30	First train 2016/ 2017	Browse
Gorgon	Chevron/ExxonMobil/ Shell	Committed	15	43	2014	Carnarvon
Ichthys gas	Inpex/Total E&P	Planned	8	21	First shipment scheduled for 2012	Browse
North West Shelf	Woodside/BHP Billiton/BP/ Chevron/Japan Australia LNG/Shell	Operational	16	27	1989	Carnarvon
Pluto project (train 1)	Woodside/Kansai Electric/Tokyo Gas	Under construction	4.3	12	First gas expected end of 2010 and first LNG early 2011	Carnarvon
Pluto project (train 2)	Woodside/Kansai Electric/Tokyo Gas	Planned	4.3	2.5	n/a	Carnarvon
Pluto project (train 3)	Woodside/Kansai Electric/Tokyo Gas	Planned	4.3	n/a	n/a	Carnarvon
Prelude	Shell	Planned	3.5	5	n/a	Browse
Scarborough gas field	ExxonMobil/BHP Billiton	Possible	6	n/a	First gas maybe in 2015/2017	Carnarvon
Wheatstone / Iago (Carnarvon Basin LNG)	Chevron/Apache Julimar Pty Ltd/Kuwait Foreign Petroleum Exploration Company (KUFPEC)	Planned	8.6	23	2015	Carnarvon
Australia Pacific LNG	Origin/ ConocoPhillips	Proposed	7	35	2006	Surat, Bowen
Darwin LNG	ConocoPhillips/Eni/ Santos/INPEX/Tokyo Electric/Tokyo Gas	Operational	3.71	n/a	2006	Bonaparte
Fisherman's Landing	Arrow	Planned	1.5	2.2	2012	Bowen
Gladstone	Santos/Petronas	Proposed	3.5	n/a	2014	Bowen
Sunrise	Woodside/ ConocoPhillips/ Shell/Osaka Gas	Proposed	5.3	n/a	After 2013	Bonaparte
TOTAL			**106.01**			

Existing and proposed Domestic Gas projects – Western Australia

Project	Companies	Status	Capacity (Tj per day)	Capex $billion	Start-up	Gas Field
Devil Creek	Apache/Santos	Committed	200TJ	0.8	2011	Carnarvon
Macedon	BHP Billiton/ Apache	Proposed	200TJ	1	2012	Carnarvon
North West Shelf	Woodside/BHP Billiton/BP/Chevron/ Japan Australia LNG/Shell	Operational	660TJ	27	1984	Carnarvon
Varanus Island	Apache	Operational	365TJ	18	1989	Carnarvon

I understand the long lead times for new LNG development, the extraordinary costs involved in exploration, development and operation of projects, and the need for certainty in law and policy to attract and maintain investment.

The state is doing its bit to ensure streamlined approval processes, the provision of suitable land and working with companies on understanding infrastructure needs. This is an ongoing challenge but an important one given that a significant proportion of new global LNG supply will come from projects located off the coast of Western Australia.

The markets for Western Australian LNG are diversifying. The original North West Shelf sales were to Japan. After that came the Chinese market. To date, contracts for LNG from the Gorgon project have been signed with Japan, Korea, China and India. ExxonMobil's deal to sell 1.5 million tonnes of LNG a year from the Gorgon project to India is particularly significant because it is Australia's first long-term sales agreement for LNG with India. This is a sign of things to come. India's rapid economic growth is expected to make it the third ranking economic power behind China and the United States in the next 15 years. While it might be an exaggeration, one senior Indian official did make a passing comment to me that India could buy every molecule of gas Western Australia has.

As optimistic as the forecasts are, you can never be sure of future market changes. Just a few years ago, the United States was seen as a new growth market for LNG. That has suddenly changed with advances in technology bringing on previously non-commercial reserves of tight gas and shale gas. United States domestic gas reserves now seem to be sufficient for up to 100 years. While not a major market, Europe is likely to be a strategically important LNG customer, given concerns over security of pipeline supply from Russia. Even in Australia there are changes with the prospective development of a coal seam methane project in Queensland to export gas to China and Japan. While these trends are significant, they are likely to have only a moderating impact on demand for LNG from conventional sources. Their effect is more likely to be a downward pressure on prices.

Projects of this scale do not come without their issues. For a start, Australia, as a first world economy, has the highest of environmental standards. The approach of the state government is to promote development without compromising the environment. The recent explosion and oil spill from the West Atlas drilling rig off the coast of the Northern Territory has, unfortunately, damaged the industry's standing.

The Gorgon project is a far better story. The gas reservoir has a 12 per cent carbon dioxide (CO2) content. This could not simply be released into the atmosphere. As Resources Minister in the 1990's, I somewhat casually suggested that the solution might be to re-inject the CO2 below the surface of Barrow Island, from which Chevron had been producing oil since the 1960's. As it turns out, that is exactly what will happen with the capture and storage of the CO2 from the project being the largest geosequestration exercise in the world.

Apart from the technical issues, Barrow Island is a conservation reserve and has been for 100 years. It is a piece of the ancient Australian continent that is home to some 24 species that are found nowhere else in the world, including birds, skinks and snakes. To the frustration of the anti-development movement, the survival of these species is directly attributable to the environmental management practises of Chevron over the past 50 years, which have effectively made the island a quarantine zone. It is because of that exemplary record that an LNG project on Barrow Island won both government and public support.

For the Browse gas fields in the far north of the state, environmental issues matter but the major issue is negotiating a positive outcome with traditional owners. The development of the Browse Basin gas had struggled for years and, eventually, Western Australia lost the $21 billion Inpex project to the Northern Territory. The nail in the coffin was the previous state government's policy of giving traditional owners a right of veto over the project. One of the first decisions of my government was to lift that right of veto and get on with productive negotiations with the traditional owners on a site for a gas processing precinct. The site – at James Price Point just north of Broome – has been secured with the agreement of the traditional owners and the project proponent, Woodside. The project will provide current and future generations of Aboriginal people in the Kimberley with long-term jobs and a real opportunity for genuine self determination and prosperity – a far better outcome than welfare dependency.

Other issues for the industry include ensuring that local business gets a fair share of contracts, and finding enough skilled and unskilled workers at both the construction and operational phases of project development.

I know the issue of industrial disputation is on industry's radar. It is also on the state government's radar. There has been greater union activity in Western Australia over the past 12 to 18 months. This is as a result of a number of factors including increased construction and production activity, greater competition between unions and the federal Labor government's changes to industrial relations laws. These changes have swung the pendulum too far in favour of unions. The state government is watching this issue closely and I have called on the federal government to intervene in unlawful disputes. My government is not prepared to see Western Australia's well earned reputation as a stable, secure and reliable supplier of natural resources eroded by unjustified industrial activity.

Another significant issue for industry is the supply of natural gas to the domestic market. The state government's policy is that 15 per cent of reserves be retained for local consumption. And this policy has bi-partisan political support. It is part of the 'jigsaw' in ensuring gas is available for Western Australia at a competitive price. Without that, the dream of a more mature economy with value adding to our natural resources will not be realised. I appreciate that for the industry this is a contentious policy. All I can say is that the policy is applied on a case by case basis with room for some flexibility.

I accept that the larger gas fields, especially those in deeper water, can only be developed for the export LNG market. The supply of some of that gas to the domestic market is a fair and reasonable expectation. Moreover, the price at which it is made available to the domestic market should not be above the effective price at which the gas is fed into the LNG plant. It is not an acceptable situation to have domestic gas prices well above world prices, as is the case at present with current domestic gas prices in Western Australia.

I would say to the major companies, public support is heavily dependent on your support for the domestic gas market in Western Australia. I do understand that the export of LNG is the main game. It is just that for me, Western Australia is the main game.

A related point is that Western Australia has a policy of using natural gas as a clean energy source. Over 60 per cent of electricity is generated from gas. This is a far better environmental outcome for Australia as a whole, with the heavy dependence on coal in the eastern states, where around 90 per cent of electricity is generated from coal. I have argued publicly over the years that switching to a greater use of natural gas for power generation across Australia, with half to one third the greenhouse gas emissions of coal, is a far more effective method of reducing Australia's emissions than the complex emissions trading scheme put forward by the federal government. This scheme is now on hold, at least until after the next federal election later this year.

Politics and the Asia Connection

To fully understand Western Australia and its relationship to a modern Asia, you need to know something of our past and something of our psyche. Much like the great state of Texas, success has been achieved on the back of rich natural resources and a culture of big thinking, no doubt due to the combined influence of isolation, distance and vastness.

In Western Australia, there has been a unique interplay in our history between politics and business. From my observation, business often underestimates the role of politics. It may sound strange, but politicians do trust each other. It is a bit like 'honour among thieves'! I remember visiting a mining site with the Vietnamese Prime Minister. He had been told by the company that the mine workers lived in the modern brick and tile houses he had just seen. He simply did not believe the company. He only accepted the truth when it was confirmed by me – a fellow politician.

The post-war reconstruction of Japan was the catalyst for the state's second mining boom, which connected us to Asia. Japan needed natural resources and Western Australia had them, predominantly iron ore and then natural gas.

This relationship with Japan began in the early 1960's, just 15 years after Australia had faced invasion from Japan and had endured numerous bombing raids over northern towns. My father had served in the islands to the north of Australia in fighting back the Japanese advance. To convince him and his generation that our economic future lay with Japan took some doing. To the great credit of a former Premier, Sir Charles Court, this was done. A once in a lifetime opportunity had been grasped.

An export ban on iron ore was lifted and the massive Pilbara iron ore projects were developed at breathtaking speed – mines, towns, ports and railways were built by companies in less than two years. The boom quickly spread to other minerals such as nickel, alumina and mineral sands.

Next came natural gas. The discovery of gas by a small Australian company – Woodside – in the 1960's eventually led to the emergence of the North West Shelf joint venture in the 1970's, with Woodside as the Australian face of the project. The state government played a major role by effectively underwriting the initial domestic gas stage of the project through a take or pay contract to purchase gas and by building a 1,500 kilometre (or 930 miles) gas pipeline to Perth. The export stage followed with the first liquefied natural gas (LNG) shipments to Japan in 1989.

The relationship with Japan was carefully thought through and in advance of development. Japan was both a foundation investor and a foundation customer for the major iron ore and gas developments. Politicians were more prominent on our side than on the Japanese side, though all that happened was with the guidance and blessing of Japan's Ministry of Trade and Industry.

The Japanese are rightly proud of their boldness in taking risks to invest in Western Australia's economic development. And they did it well. The Japanese trading houses formed business partnerships with well established Australian, American and British companies, taking small, stable investment shares in quality projects. One example many of you may be aware of is Mitsui and Mitsubishi's one sixth share in the North West Shelf project, which they have held from the project's very beginning. This was backed up by Japanese steel mills and energy utilities entering into long term take or pay contracts for the purchase of iron ore and gas.

For Japan, a secure and long term supply of natural resources was assured. For Australia, the formula of Japan taking modest equity positions in major projects and holding on to them has been successful and well accepted. It was out of respect for this enduring relationship that my first overseas trip as Premier was to Japan. Since then there has been two visits by Japanese foreign ministers to Perth.

The growing relationship with China has not been so smooth. Part of the explanation is simply the speed of the Chinese expansion. I first visited China in 1994 and on my return predicted that China would be as important to Western Australia over the coming years as Japan had been in the 1960's. It seems obvious now but it wasn't then.

A measure of China's growth is steel production. In 1996, China's steel production exceeded 100 million tonnes per annum for the first time, making it the world's largest producer. Last year, China produced more than 567 million tonnes of steel with Western Australia supplying 40 per cent of China's iron ore imports. The impact on our state economy has been enormous. The only problem is being able to expand mine capacity quickly enough.

This extraordinary growth brings with it price volatility. Iron ore prices rose by 85 per cent in 2008, fell by 37 per cent in 2009 and this year have increased by 100 per cent. Such is the reality of a commodity based economy like Western Australia.

After many years as a customer, China is now becoming an investor. But this aspect of the relationship with China has not been given the same political and business thought as was given to the relationship with Japan. This is in spite of a visit to Perth by President Hu Jintao in 2007. Surely that was a signal of how China viewed Western Australia and its natural resources! At the time, China had been a high profile player in aggressive stock market bids to buy companies involved in smaller and more speculative ventures, predominantly in mining. Australians have been apprehensive about this. The issue has come to a head over the past three years. There was and still is a fear we could be swamped. From China's perspective, there were also some poor investment decisions.

There are some further complicating factors. China is a one-party communist state. The private sector may be half the economy but the major businesses which deal with Western Australia are all state-owned enterprises. They include steel mills, energy utilities, commodity traders and banks. To this can be added the government-owned sovereign wealth funds.

There is confusion in China about Australia's position on Chinese investment – inconsistent rulings by Australia's Foreign Investment Review Board left China feeling Australia discriminated against her. Part of the problem seems to be that China simply hasn't had the benefit of knowing what sort of relationship Australia wants when it comes to investment in our natural resources. That is our fault, not China's fault.

I visited China in July 2009. This coincided with a low point in China-Australia relations. It was a 'perfect storm' with: tension over a proposed merger of the iron ore operations of BHP Billiton and Rio Tinto; the arrest of an Australian on bribery charges; the breakdown of an investment deal with Chinalco; and the coming visit to Australia of an anti-Chinese political activist. Needless to say, my welcome was polite though a little cool. My message was simple: China's investment was welcome in Western Australia and I urged Chinese involvement in major projects with quality partners and a moderate equity holding. In relation to smaller projects or less strategic resources, I said I didn't see an issue with larger or majority holdings. There is no reason to 'sweat the small stuff'. By the end of the week I had a full police escort!

What matters is that the relationship with China is now in far better shape. The hesitancy over investment has gone. There has been some clarification of foreign investment rules. Last year, Australia was China's largest outward investment destination. While the latest foreign investment data is not yet available, the expectation is that China will be in the top three of foreign investors in Australia, coming from nowhere just a few years ago. China has become fully involved in the Oakajee and mid west developments, as well as contracting for major LNG purchases from the Gorgon project. Just two weeks ago, Chinese steel company Ansteel signed a long term off-take contract with Gindalbie Metals for magnetite iron ore from the Karara project in the mid west, valued at more than $70 billion. Petro China have signed contracts with ExxonMobil and Shell for LNG from the Gorgon project, estimated at more than $80 billion.

Perhaps one anecdote is worth telling. The politics of doing business in Asia was at centre stage in the lead up to the first sale of natural gas to China. The North West Shelf project was built to supply gas to Japan. In my dealings with the Japanese customers it was very clear that they saw it as their project and their gas. For that reason alone the negotiations in the late 1990's to sell gas to China were highly sensitive. Placating the Japanese was as important as wooing the Chinese. It was a tricky time. The eventual and historic deal to sell gas to China was a triumph for everyone. It was as much a political deal as a commercial one.

It had all begun with a visit to Western Australia by Chinese Vice Premier Zhu Rongji in 1997. On a trip to the Pilbara mines, it was clear his interest was only in iron ore. On the return flight I talked him into doing a low altitude 'figure 8' over the North West Shelf project. That was the start of China's interest in LNG. The joint venture partners began the sales effort in China but were struggling to get access at the highest levels. The then state Premier, Richard Court, got involved and opened doors in China that the companies couldn't. Then Prime Minister John Howard also played an important role in bringing the negotiations to a conclusion. The contracts were signed at a value of $25 billion and the first LNG cargo was delivered to China in May 2006, just eight years after the 'figure 8' flight. It was a triumph for business and a clear demonstration of the importance of politics and government to government relations in China. This was China's first purchase of LNG.

There are many more stories and anecdotes. The point I make is that the countries of Asia are still developing. They have different political systems with governments far more directly involved in investment and trade than is the case for western nations. This may change over time, but it is the reality of today. For western business, there is something to be gained by realising and making use of government to government relations and the personal links from one politician to another.

The growth of China with India to follow has brought with it the third great wave of economic development for Western Australia. The state has the natural resources Asia needs. We are in the right place at the right time. Some four billion people, or 60 per cent of the world's population, live to our north and in the same time zone. As a prominent journalist recently wrote, "the tyranny of distance has become the triumph of proximity".

For America, our long held and trusted friends, there is a wonderful opportunity to be part of this era of growth. There is already a sense in Perth that the Americans are back! You are and you are very welcome.