



Parliament of Australia

Report of the Parliamentary Delegation
to
Japan and the Republic of Korea

9 November to 21 November 2014

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Members of the Delegation

Mr Don Randall MP
Leader of the Delegation

Senator Alex Gallacher
Deputy Leader of the Delegation

Senator Sean Edwards

Mr Ken O'Dowd MP

Mr Jerome Brown
Delegation Secretary

Introduction

The aims of the parliamentary delegation to Japan and the Republic of Korea (ROK) were to:

- discuss the trade relationships, particularly in the context of the free trade agreements being finalised with each country at the time of the delegation's visit, and to build on the Joint Standing Committee on Foreign Affairs, Defence and Trade's inquiry into the trade and investment relationship with each country;
- explore the role of Australia's energy and minerals exports in the Japanese and ROK economies, and the countries' approaches to energy policy in the aftermath of the Fukushima nuclear accident in Japan;
- learn about Japanese and ROK foreign policy perspectives, including the key strategic issues facing each of the countries, and the bilateral relationships with Australia; and
- reinvigorate the parliamentary relationships, noting that the last delegation visit to Japan took place in 2006 and the previous visit to the ROK occurred in 2010.

Japan and the ROK were highlighted in the *Australia in the Asian Century White Paper* as two of the key countries in the Asian region of strategic importance to Australia. Australia has longstanding and highly complementary trade relationships with both countries. This has been buttressed by extensive people-to-people contacts and, potentially, more extensive security cooperation.

The delegation was deeply honoured by the generous hospitality extended to us, particularly by the Presiding Officers and parliamentary friendship groups in each country.

The delegation wishes to record its appreciation for the work of the Parliament's International and Parliamentary Relations Office and Australia's diplomatic missions in Japan and the ROK for their efforts in developing the programs and the excellent support provided during our visits.

This report details the themes discussed in the delegation's appointments and describes the site visits in each country. The delegation's full program is included as an appendix to this report.

Tragically, the leader of the delegation, Mr Don Randall MP, died in 2015. The delegation members express their sincere condolences to his family and appreciation for his leadership of the delegation.

Japan

The delegation visited Japan from 9 November to 15 November 2014. The program commenced with appointments in Tokyo and a site visit in Yokohama, followed by meetings and site visits in Osaka.

The bilateral relationship

The Department of Foreign Affairs and Trade states that the relationship with Japan is Australia's closest and most mature in Asia. The relationship is said to be fundamentally important to both countries' strategic and economic interests. The relationship is underpinned by a shared commitment to democracy, human rights and the rule of law, as well as common approaches to international security.¹

The trade and investment relationship between Japan and Australia is highly complementary and of critical importance to both countries.

Australia is viewed as a safe, secure and reliable supplier to Japan of minerals and energy resources, as well as food products. Australia's principal exports to Japan are coal (valued at \$11.7 billion in 2014-15), iron ore (\$6.6 billion), beef (\$1.8 billion) and copper (\$1.7 billion).

Japan is Australia's second-largest export destination, with merchandise exports to Japan worth \$44.5 billion in 2014-15. In 2015, two-way trade was valued at \$62.8 billion, almost 12 per cent of Australia's total trade. Australia's trade surplus with Japan is the nation's second largest.

Japan is the third largest source of foreign investment in Australia with

investment stocks worth over \$174.6 billion in 2014, of which \$66 billion was direct investment, notably in LNG projects.²

Japan is Australia's third-largest source of imports. Merchandise imports from Japan were valued at \$18.3 billion in 2014-15 and included passenger motor vehicles (\$6.1 billion), refined petroleum (\$3 billion), and iron / steel pipes (\$1.3 billion).

Japan is Australia's sixth largest destination for foreign investment, which was worth \$69.6 billion in 2014.

In July 2014 Australia and Japan entered into a Japan-Australia Economic Partnership Agreement (JAEPA) which, at the time of the delegation's visit, was yet to be approved by the National Diet of Japan. The JAEPA subsequently received Diet approval and entered into force on 15 January 2015.

The JAEPA is claimed to be the most liberalizing bilateral trade agreement that Japan has ever concluded, and the most significant economic accord between the two countries since a 1957 Agreement on Commerce.³

People-to-people links between Australia and Japan are also very strong. A record 244,600 Australians visited Japan in 2012 and some 324,000 Japanese people visited Australia in 2013. Links are fostered through a myriad of connections, such as the 473 formal partnerships between Australian and Japanese universities and the Japan Exchange and Teaching Programme. The New Colombo Plan, which will assist many thousands of Australian undergraduates to undertake study and

internships in Indo-Pacific countries, will also deepen knowledge of Japan among younger Australians and foster people-to-people links.

Japan's foreign policy and its relationship with Australia

In December 2013 the Government led by Prime Minister Shinzō Abe issued Japan's first National Security Strategy. The Strategy defined Japan's national interests as being:

- maintaining the country's sovereignty, territorial integrity and safety;
- achieving prosperity for the nation through economic development, free trade and an international environment that is stable, transparent and predictable; and
- maintaining an international rules-based order underpinned by values of freedom, democracy, respect for human rights and the rule of law.

The Strategy outlined three national security objectives, as follows:

- strengthen the country's deterrent capability so as to maintain Japan's security;
- improve the security environment of the Asia-Pacific region and reduce threats to Japan by cooperating with the US and other partners; and
- play an active role in efforts to maintain the international rules-based order.⁴

Security challenges in the Asia-Pacific region identified in the Strategy include the rapid rise of China, the massive expansion in its military capabilities and conduct in the East China and South China seas which, the Strategy argues, are contrary to international law. North Korea's nuclear weapons capability and

provocations, together with the abduction of Japanese nationals, are also cited.

In responding to these challenges, Ministry of Foreign Affairs (MOFA) officials told the delegation that Japan would, inter alia, strengthen its diplomatic and defence capabilities, including its maritime surveillance and cyber capabilities, revise the Guidelines for Japan-US Defence Cooperation, and enhance security and defence cooperation with Australia, South-East Asian nations, India and Europe.

Japan's diplomatic efforts would also seek to contribute to the country's economic growth by taking an 'All-Japan' approach to diplomacy, including 'top level sales' initiatives involving the Prime Minister and Minister for Foreign Affairs, Fumio Kishida, promoting economic partnership agreements, strategic use of Japan's Official Development Assistance, and supporting Japanese companies to expand in emerging markets.

Illustrating Australia's strategic importance to Japan, MOFA officials stated that Japan relies very heavily on Australia for mineral and energy resources and food products. Japan's energy dependence on Australia was said to be 24 per cent – Japan's largest.

It was noted that 290,000 Australians are learning to speak Japanese (the fourth largest in the world), that 78,000 Japanese nationals reside in Australia (the third largest Japanese population outside of Japan itself), there are 687 Japanese-affiliated companies in Australia and 109 sister city relationships have been formed.

The assistance that Australia provided to Japan following the Great East Japan earthquake in 2011 (a search and rescue team and C-17 aircraft) and former Prime Minister Gillard's visit to the affected area were mentioned favourably.

MOFA emphasised that Japan shares fundamental values and has common strategic interests with Australia. It was noted that Prime Ministers Abe and Abbott had elevated the relationship between the countries to that of a 'special strategic partnership'. The close rapport between the two Prime Ministers was seen as particularly valuable for the relationship.

It was explained to the delegation that, from Japan's perspective, there are two 'major pillars' to the bilateral relationship: strengthening the complementary economic ties, and security cooperation.

As examples of the economic relationship, MOFA noted that Japan relies heavily on Australia for natural resources and food. For instance, 64 per cent of Japan's coal imports are supplied by Australia, 59 per cent of iron ore, 21 per cent of natural gas and 19 per cent of uranium imports. In terms of food products, 62 per cent of barley imports are sourced from Australia, 51 per cent of beef imports, 32 per cent of raw sugar and 17 per cent of wheat imports. In total, Australia is Japan's third largest food supplier and fourth largest trading partner overall.

The Japan-Australia Economic Partnership Agreement, signed by the two countries' Prime Ministers on 8 July 2014, along with the Trans-Pacific

Partnership (TPP) and Japanese investments in Australian energy resources and infrastructure projects were cited as measures to further strengthen the economic relationship. Under JAEPA, some 97 per cent of Australia's merchandise exports to Japan will receive preferential access or enter duty-free when the Agreement is fully implemented.

The delegation had the welcome opportunity to explore the potential benefits presented by the JAEPA and other bilateral trade issues with representatives of Murray Goulburn, Meat and Livestock Australia, Austral Fisheries and Horitomi Commercial and Industrial at a lunch held at the Ambassador's residence and hosted by the Deputy Head of Mission, Mr Tom Connor.

For the security cooperation dimension of the relationship, MOFA mentioned the 2007 Japan-Australia Joint Declaration on Security which elevated the bilateral relationship to a 'strategic partnership', bilateral consultation and cooperation (including on non-proliferation, peace keeping operations, information sharing, disaster relief and maritime security), joint military exercises and multiple rounds of 2+2 Foreign and Defence Ministerial consultations.

Measures to strengthen security cooperation mentioned to the delegation included a Japan-Australia Information Security Agreement (March 2013), a Japan-Australia Acquisition and Cross-Servicing Agreement (January 2013), and an Agreement Concerning the Transfer of Defence Equipment and Technology (2014). MOFA indicated that Japan and Australia could further

expand cooperation between the two militaries for peace keeping activities and disaster relief operations.

The outcomes of Prime Minister Abe's highly successful visit to Australia in July 2014 were summarised. These included the signing of the JAEPA, commitment to negotiations on the TPP, the announcement of an Australia-Japan 135 East Longitude Initiative, joint research on marine hydrodynamics, a decision to commence negotiations for an agreement to facilitate joint operations and exercises, and an intention to further strengthen trilateral cooperation between Japan, the US and Australia. The support expressed by Prime Minister Abbott for the Japanese Government's decision to revise its legal framework for security (the new constitutional interpretation on Japan's collective self-defence) was also welcomed.

In the context of the discussion on the bilateral relationship, it was of interest that on the day the delegation arrived in Tokyo the *Asahi Shimbun*, one of Japan's national newspapers, reported that 'Japan and Australia are becoming each other's quasi-allies', referring to a joint military training exercise then underway in Miyagi Prefecture involving Japanese, US and Australian military personnel. The paper also reported on Ministry of Defence consideration of Japanese Self-Defense Force participation in Exercise Talisman Saber, Australian consideration of a status of forces agreement with Japan, possible export of submarine technology to Australia, and cooperation on the F-35 Joint Strike Fighter. The paper also reported that Prime Minister Abe and the Japanese

Government view Australia as a 'quasi-ally' of Japan.⁵

Asked to nominate Japan's top foreign policy priorities, MOFA officials said the following three were of particular importance: strengthening the Japan-US alliance; deepening relations with China and the Republic of Korea; and strengthening Japan's economic relationships as a means to revitalising Japan's economy.

Added to these three priorities for Japanese diplomacy, a fourth is Japan's intention to contribute constructively to global issues, for example in UN peacekeeping operations and in nuclear disarmament and non-proliferation, in what Prime Minister Abe refers to as Japan making a 'Proactive Contribution to Peace'.⁶

With regard to the relationship with China, MOFA noted that Prime Minister Abe and the President of China, Xi Jinping, were to meet in person for the first time that morning on the sidelines of the APEC summit taking place in Beijing. This was seen as a significant first step in restoring bilateral relations which had become strained, particularly over the Senkaku/Diaoyu Islands dispute.

The delegation mentioned that there had been a decline in the number of visitors to Australia from Japan and enquired what the reasons might be for this. MOFA suggested that the decline might be due to the unfavourable exchange rate and the availability of inexpensive airfares to closer holiday destinations in Asia.

In a briefing received from other interlocutors later in the Japan

program, the delegation was told that Australia had acquired a reputation in Japan for being expensive and providing poor customer service, which may also have contributed to the declining tourist numbers. The delegation also learned that the Japanese Government has actively promoted domestic tourism. The delegation was told that single international tourism campaigns do not work in Japan, that more information about Australia needs to be made available in the Japanese market, and that Australia could learn from the approaches taken by others, such as the French. Nevertheless, Australia was said to experience good 'repeat tourism' from Japanese people who do visit, such as students.

The delegation had the pleasure of meeting the Vice-Minister for Foreign Affairs, Mr Takashi Uto, who made the welcome opening observation that Japan's relationship with Australia had never been closer, and had been elevated to a 'special relationship'.

The Minister noted that Prime Minister Abe would be attending the G20 Summit in Australia later that week and would that day, 12 July 2014, be meeting with Prime Minister Abbott on the sidelines of the APEC summit.

The Minister welcomed the JAEPA and expressed confidence that it would shortly be approved by the Diet. The delegation was told that the Abe Government's highest priority was to secure economic growth and to get the country out of deflation. The other key issue for Japan was strategic, referring to China's island building activities. The Minister was pleased to note that Japan was chosen as one of the four pilot countries for the New Colombo Plan.

Asked about Japan's current energy situation and the role of nuclear power, the Minister noted that LNG imports are very costly and, while restarting nuclear reactors is a very sensitive issue, Japan simply must utilise nuclear power. The Minister noted that he is from the Kagoshima Prefecture in which the Sendai nuclear units, expected to restart shortly, are located.

While praising the extremely close economic relationship, the Minister expressed the hope that Japan and Australia could strengthen security cooperation and the military to military relationship also.

Japan's public diplomacy efforts

MOFA officials described the 'Cool Japan' soft power public diplomacy initiative, which formally commenced in 2012, as an attempt to shape perceptions of Japan held by the public and other non-government actors in foreign countries.

These efforts are intended to counter what the officials described as Japan's declining profile relative to other neighbouring countries (China and the Republic of Korea in particular), as measured by opinion polls commissioned by the Foreign Ministry. Examples of this polling included perceptions among US opinion leaders of which country is the most important partner for the US in Asia, the relative popularity of Japanese television programs, the number of foreign students learning Japanese, numbers of tourists visiting Japan relative to other countries and so on.

It was noted that both China and the Republic of Korea had stepped up their public diplomacy efforts in recent years

and, in some respects, Japan had lagged. It was commented that China's massive infrastructure build as part of its development assistance is repeating errors that Japan allegedly made in the 1980s and 1990s. It was also observed that China has succeeded in keeping a focus on the 'comfort women' issue, which was said to have detracted from Japan's efforts to focus on the post-war period.

The three objectives of Japan's public diplomacy were summarised: promoting public opinion favourable to Japan; fostering 'Japonophiles'; and promoting an understanding of Japan's history, culture and government policies.

Issues the various public diplomacy activities are directed at include shaping views about Japan's territorial integrity (for example, Japan's perspective on the Senkaku Islands dispute) and Japan's history.

Two principal public diplomacy activities were described: strategic public relations initiatives, and utilising Japanese soft power.

It was explained that Japan's soft power is comprised of three principal elements:

- cultural exchanges, e.g. support for sports and theatrical events, promoting Japanese pop culture and cuisine;
- intellectual and people-to-people exchanges, e.g. support to foreign think tanks and Japanese studies programs, the Japan Exchange and Teaching (JET) Programme (Australia is the fourth largest JET Programme participant), and the

network of Japan-East Asia youth and students; and

- promotion of Japanese language studies, notably the Japanese Language Education Program conducted by the Japan Foundation.

In a point of particular interest, it was noted that Australia's messaging has concretely assisted to foster a favourable opinion of Japan. The speech given by Prime Minister Abbott to welcome Prime Minister Abe to the Australian Parliament on 8 July 2014, in which the then Prime Minister referred to Japan as an 'exemplary international citizen' and welcomed Japan's decision to be a 'more capable strategic partner' in the region were again mentioned as examples. Prime Minister Abbott's support of Japan on that occasion was said to have received widespread and positive coverage in Japan.⁷

To coordinate public diplomacy activities, the Japanese Foreign Ministry has created a Public Diplomacy Strategy Division within the Foreign Minister's Secretariat. The Division determines suitable messages, appropriate target groups, speakers, timing and tools for strategic public relations activities.

It was clear to the delegation that the Japanese Government takes public diplomacy seriously. MOFA officials stated that it was currently a top priority for the Ministry and that the budget for public diplomacy activities in 2015 was expected to be approximately 50 billion yen (¥) – more than \$500 million. The final budget allocated to the Foreign Ministry for public diplomacy activities in 2014-15 was actually ¥70 billion.⁸

Asked how the Foreign Ministry intends to measure the outcomes of this investment, MOFA indicated that effectiveness is difficult to measure. However, a 'greater familiarity with Japan', while not entirely satisfactory, would be one measure. More specific success measures would be determined for each individual program (e.g. the number of favourable articles published, responses to surveys etc.).

People-to-people links – Cultural, scientific and educational exchange

In a briefing which fitted well with the preceding discussion of Japan's soft power, the delegation was informed about the role and work of the **Japan Foundation** by its President, Mr Hiroyasu Ando.

The Japan Foundation was established in 1972 and is an independent administrative institution under the jurisdiction of the Foreign Ministry. The Foundation has the objective of promoting Japanese culture internationally or, as stated in its corporate information, to promote international cultural exchange through a comprehensive range of programs in all regions of the world.

The Foundation has a staff of 230 and a budget in 2014 of ¥19.8 billion (approximately \$198 million), but was said to be under financial pressure. The Foundation has 22 overseas offices in 21 countries, including an office in Sydney which opened in 1978. Based on a Japanese Government endowment of ¥78 billion, the activities of the Japan Foundation are financed by government subsidies, investment revenue, and donations from the private sector.

The Japan Foundation conducts programs, in partnership with other organisations in and outside Japan, with a focus on three main activities: arts and cultural exchange; Japanese-language education overseas; and Japanese studies and intellectual exchange.

Support and promotion for the study of Japanese language in foreign countries is a key aspect of the Foundation's work. Programs include organising the Japanese-Language Proficiency Test, developing teaching materials, supporting Japanese courses, and providing training programs for Japanese language teachers.

It was explained that in 1979 some 127,000 people were learning Japanese outside Japan, while in 2012 the number had risen to almost four million. The Foundation also sends native Japanese language teachers to various South East Asian Nations, with 65 sent the month before the delegation's visit. The Foundation's aim is to send 3,000 teachers overseas by 2020, including some to Australia. Quoting a figure larger than that mentioned by MOFA, Mr Ando stated that there are 360,000 students learning Japanese in Australia, more than are learning Chinese, and that it appears Australia needs additional native Japanese language teachers.

Mr Ando noted that 2016 would mark the 40th anniversary of the signing of the Basic Treaty of Friendship and Cooperation between Australia and Japan which sought to broaden bilateral relations beyond an economic partnership.

As examples of its activities involving Australia, Mr Ando mentioned that the Foundation is supporting an art exhibition and sending Japanese theatrical productions to coincide with the anniversary of the opening of the Japanese Embassy in Australia. The Foundation will support a Japanese Film Festival in Sydney and supported a lecture series held in July 2014 at the Art Gallery of NSW on Japanese Performing Arts.

Noting that Japan has such an exemplary international reputation, particularly as a manufacturer of quality high-technology goods, the delegation enquired about the necessity for the Foundation's work. Mr Ando responded that the purpose of the Foundation is to 'present Japan's face to the world', so that the world can understand the Japanese way of living and better appreciate that Japan is 'not just gadgets'. He also made the point that the Foundation's objective is not about dominating other cultures but facilitating two-way exchanges and collaboration. The work of the Foundation was said to lay solid ground for improved people-to-people links between Japan and other countries.

The delegation had the welcome opportunity to visit **Miraikan, Japan's National Museum of Emerging Science and Innovation** which opened in 2001, and to tour its exhibits. These included the Museum's 'symbol exhibit' Geo-Cosmos – a large suspended globe with a 6 meter diameter made up of over 10,000 panels which realistically project the figure of the Earth from space with super high resolution exceeding 10 million pixels. The delegation was also fascinated to see the famed humanoid robot ASIMO in operation, as well as

the Shinkai 6500 submersible vessel and a seismic observation network that was developed in the aftermath of the Great Hanshin-Awaji earthquake (the Kobe earthquake), which occurred in January 1995.

Miraikan engages in three main activities: disseminating information about Japan's cutting edge science and developing methods to communicate this science; training science communicators; and maintaining a link with eight stakeholder science museums around the world, one of which is the National Science and Technology Centre (Questacon) in Australia.

Half of the original construction cost for Questacon (\$10 million) was paid for with a generous grant from Japan. The MOU with Questacon and the other science museums relates to cooperation in academic research and educational research.

The delegation enquired how interest in science could be stimulated in young people. Miraikan staff responded that it is important first to create a 'sense of wonder' in science amongst children, then later encourage study of STEM subjects. The advantage of Miraikan and similar facilities is that they allow young people to have these real and engaging experiences with science.

It was also remarked that teaching science is challenging and tends to be more male focused. Japan, and Miraikan specifically, were said to be making efforts to open opportunities for women to engage with science.

It was noted that the day before the delegation's visit, the Japanese

Antarctic research vessel travelled via Fremantle to Antarctica. Hope was expressed there could be greater cooperation between Australia and Japan in Antarctic research and logistics in the future.

During its visit to Tokyo, the delegation was also pleased to meet seven extremely impressive students, from universities across Australia, participating in the New Colombo Plan pilot. The delegation appreciated having the benefit of their views on the program and hearing about the placements they are undertaking.

Japan's energy situation following the Fukushima nuclear accident

The Fukushima Daiichi nuclear accident, which occurred as a consequence of a tsunami triggered by the magnitude 9.0 Great East Japan earthquake on 11 March 2011, had a significant and enduring effect on the electricity market and the Japanese economy as a whole.

All of Japan's 48 nuclear reactors, which had been supplying 32 per cent of the country's electricity needs, were either closed or had their operations suspended pending assessments by the newly established Nuclear Regulation Authority (NRA) that the reactors met heightened safety requirements.⁹

Prior to the accident and under the country's 2010 Basic Energy Plan, the nuclear share in Japanese power generation was set to increase to 50 per cent by 2030. Instead, by May 2012, all of Japan's nuclear reactors had been shut down.

As explained to the delegation in a comprehensive briefing by officials of

the Ministry of Economy, Trade and Industry (METI) and its Agency for Natural Resources and Energy (ANRE), the consequences of the nation-wide nuclear shutdown were profound.

Japan's power generation mix changed rapidly and significantly. The percentage of power obtained from fossil fuel use rose from 60 per cent in 2010 to 90 per cent in 2014. In particular, the share of gas-fired electricity generation rose markedly – from 32 per cent in 2010 to almost 50 per cent by 2012, and associated demand for liquefied natural gas (LNG) increased by 30 per cent. Use of oil for power generation trebled from 5 per cent in 2010 to 16 per cent in 2012.

The increased fuel cost to power companies was ¥2.3 trillion in 2011, ¥3.1 trillion in 2012 and ¥3.6 trillion in 2013 – a cumulative total for the three years of ¥9 trillion (approximately \$110 billion). Losses across Japan's power companies were in the order of ¥1 trillion (\$12 billion) per year.

As a consequence of the increased fuel costs, notably for oil and LNG, Japan recorded a balance of trade deficit in 2011, the first time in 31 years. The deficit rose to a record ¥11.5 trillion (approximately \$126 billion) in 2013. The cumulative trade deficit from April 2011 to the end of March 2014 was ¥23.25 trillion (\$255 billion). Japan's current account has also been affected by the deterioration in the trade balance.

The average cost of electricity generation rose by 57 per cent following the nuclear accident, from ¥8.6 per kilowatt-hour (kWh) in 2010 to ¥13.5kW/h in 2012.

Electricity prices for consumers rose steeply. Between 2010 and 2014 average electricity prices rose by 25 per cent for households and 38 per cent for industry due to the increased use of fossil fuels, rising fuel prices and the rising renewable energy promotion surcharge.

The effect of the nuclear shutdown on Japan's carbon emissions was also dramatic. Approximately 100 million tonnes more carbon dioxide per year is being emitted than when the nuclear reactors were in operation, adding 8 per cent to Japan's total emissions. The country's emissions target adopted prior to the Fukushima accident had to be abandoned. Japan's emissions target of a 25 per cent reduction on 1990 levels by 2020 was changed in 2013 and that year emissions were almost 11 per cent higher than 1990 levels.¹⁰

In 2012, Japan was self-sufficient for just 6 per cent of its energy demand, primarily from hydro. Japan's reliance on imported primary energy resources (including oil) was over 90 per cent at the time of the delegation's visit. METI officials stated that this degree of import dependence presents a major vulnerability for Japan, the energy security of which would clearly be threatened if supplies were disrupted. It was emphasised to the delegation that a top economic priority is reducing electricity prices, and a key focus for energy policy is diversifying the sources of energy supply so as to lower fuel import costs.

Similarly, Japan's *Diplomatic Bluebook 2014*, which was provided to the delegation, states that it is imperative for Japan to secure stable supplies of energy at reasonable prices to ensure

the viability of the country's economy. To this end, Japan intends to bolster its resource diplomacy, diversify its range of suppliers and reinforce the security of transportation routes.¹¹

Japan's Strategic Energy Plan

In April 2014, three years after the nuclear accident, the Japanese Government issued a new Strategic Energy Plan which is intended to guide Japan's energy policy for the next 20 years. A principal objective of the Plan is to reform the country's energy sector so that Japan remains a competitive location for business and to encourage economic growth.

As explained to the delegation, the Plan details a range of structural challenges facing Japan's energy sector, several of which were exposed by the Fukushima accident. These problems include:

- reduced security of energy supplies brought about a record high dependence on imported fossil fuels, combined with a significant outflow of national wealth, mentioned above;
- an excessive dependence on some resource suppliers, referring specifically to the fact that Japan depends on the Middle East for 83 per cent of its oil imports and 30 per cent of its LNG imports (Australia supplies 21 per cent);
- the differences in electricity frequency between East and West Japan, and the absence of an emergency system to deliver oil products;
- a power supply system characterized by regional monopolies comprised of ten vertically-integrated electricity power companies (EPCOs), also referred to as general electricity

- utilities (GEUs).^{*} These EPCOs lack a system to transmit electricity beyond regions, maintain strong price control and are exposed to little competition, and are limited in their ability to handle changes in energy mix, including an increase in renewables; and
- the development of unconventional (shale) gas and crude oil in North America (the so-called ‘shale revolution’) which is having a major impact on global fossil fuel supply structures, notably causing large gaps in international gas prices which is predicted to make energy-intensive industries in Japan (and Europe) significantly less competitive.

To address these challenges, the Energy Plan proposes a series of strategies based on a ‘3E + S’ policy: ensure stability of energy supplies (‘Energy security’); reduce the cost of energy supplies by enhancing efficiency (‘Economic efficiency’); climate change mitigation (‘Environment’); and ‘Safety’.

The Plan proposes an energy supply and demand structure for Japan which is:

- ‘multilayered’, in that there is a range and combination of energy sources available so that each source can exert its advantages to complement others’ drawbacks;
- ‘resilient’, so that stability can be assured even in times of crisis;
- ‘flexible’ so that new players can enter the electricity and gas markets in order to increase competition and promote

^{*} A ‘vertically-integrated’ power company refers to one which includes the generation, transmission, distribution and retail supply of electricity.

- efficiency, and allow greater choice for consumers; and is
- increasingly ‘self-sufficient’, by deploying more renewables, nuclear energy as a quasi-domestic energy source, and use of resources in Japan’s EEZ such as methane hydrate.

Of the ten measures detailed in the Plan, each of which contains a number of sub-elements, the following were brought to the delegation’s attention by METI.

First and foremost, Japan will seek to secure stable supplies of energy resources. It aims to achieve this by diversifying major energy resources and, for each resource type, reduce procurement risks by diversifying supply sources, secure interests in upstream projects and enhance relationships with supplying countries.

As examples, Japan intends to obtain oil and natural gas from Russia and engage in an expanding range of upstream oil, gas, coal and metals projects in Australia, Indonesia, Russia, US, Canada, Kazakhstan, Mozambique, Vietnam and the Middle East. Mention was made of Japan’s intention to accelerate projects operated by Japanese firms, such the Ichthys LNG project in Australia which is operated by INPEX and expected to commence production in 2016.

In terms of diversification of gas supplies, METI observed that the shale revolution may be a ‘game changer’ in that it could make available significant additional supply and add flexibility for Japan. Japan currently has five LNG projects in the US, equivalent to the total imports from Australia today. LNG

supplies from these projects are expected to start in 2016 and will put downward pressure on the LNG price. Japan also has LNG projects underway in Canada (production start: 2019), Russia (start: 2018) and Mozambique (start: 2018).

It was noted that while US shale gas is inexpensive, the projects involve more risk. Australia was said to be 'very stable' and Japan has a 'strong relationship' with the country. It was also remarked that Woodside and other LNG producers are attempting to put downward pressure on costs for Australian LNG projects. In the longer term, Japan expects price convergence for LNG across regions.

Significant reforms to Japan's electricity supply structure are also envisaged and commenced with a Cabinet decision in April 2013 to realise objectives which include suppressing electricity prices to the maximum extent possible and expanding choices for consumers and businesses.

The three main steps in this reform are to:

- enable cross-regional flows of electricity, including by creating a body to control supply and demand of electricity on a national basis;
- introduce full retail competition; and
- unbundle transmission and distribution from each of the GEUs (i.e. separate transmission and distribution from the operation of power plants and retail sales).

The first two steps have been achieved, with the creation of the Organisation for Cross-regional Coordination of Transmission Operators (OCCTO) on

1 April 2015 and the commencement of full retail competition on 1 April 2016.¹² Unbundling of the transmission and distribution sector and full liberalisation of retail electricity rates are planned to occur by 1 April 2020.

Japan will also engage in reforms to the electricity grid. The delegation was intrigued to learn from METI officials that Japan does not have a single electricity grid, but instead has separate eastern and western grids which operate at different frequencies (Eastern Japan at 50 Hz and Western Japan at 60 Hz). The separate grids are connected by frequency converter stations but these have limited capacity. After the Fukushima accident, severe electricity shortages occurred in Eastern Japan but sufficient power could not be transferred from the Western grid. Hence, a priority under the Plan is to strengthen the interconnection between the regions and increase the combined grid's capacity to handle changes in the energy mix, particularly a planned increase in renewable penetration.

Under the Plan, there will be an accelerated introduction of renewables through measures such as: shortening periods for environmental assessment for onshore wind farms; grid reinforcements and the establishment of the cross-regional transmission organisation (the OCCTO) to manage expanded renewable supply; promoting distributed energy systems; and continuing the feed-in-tariff (FiTs) scheme (for solar, wind, hydro, geothermal and biomass) which was introduced in July 2012, while closely monitoring the cost burden on consumers.

The solar FiT was introduced at ¥42/kWh (41¢ US) for ten years, but this was reduced in April 2013 to ¥38 for small systems, and reduced again in April 2014 to ¥37 for residential and ¥32 for systems over 10 kW. The wind FiT in 2012 was ¥23.1/kWh for units above 20 kW.¹³ The FiT scheme has seen a significant percentage increase in deployment of solar PV in Japan.

Asked about the current contribution of renewables to Japan's energy supply, METI advised that renewables contribute approximately 10 per cent at present, comprised of 9 per cent hydro and 1 per cent solar PV. Renewable sources that are said to present the greatest potential in Japan are geothermal and wind. However, the two issues for greater renewable penetration in Japan were said to be the higher cost to consumers and the capacity of Japan's grids to manage the nature of renewable supply.

The Plan calls for the power supply mix to include hydro, geothermal, nuclear and coal as the country's four baseload (i.e. low cost and constant generation) power sources. Gas is seen as an intermediate (i.e. middle cost and adjustable generation) source for power generation and oil is a peaking power source (i.e. high cost but generation can be controlled).

In terms of strategies for each energy source, it was remarked that coal is very attractive to Japan because it is a relatively cheap baseload source and for this reason will continue to be used. Particular mention was made of next-generation high-efficiency and low-emissions coal technologies such as integrated gasification combined cycle and the ultra-supercritical technology

currently being used at the Isogo power plant at Yokohama, which the delegation subsequently visited.

In July 2015 METI specified the percentage goals for each energy source under the Strategic Plan. Japan now intends to generate between 20 and 22 per cent of its power from nuclear by 2030, with increased use of energy efficiency measures, a doubling of renewables (to 22 per cent) and increased thermal power generation (LNG – 27 per cent, coal – 26 per cent and oil – 3 per cent). This is a marked change in the country's power mix compared to the previous (2010) Energy Plan which forecast that coal and gas would supply just 10 per cent each and nuclear would provide 50 per cent.¹⁴

Prospects for nuclear power

A notable measure in the Strategic Energy Plan is the reestablishment of nuclear energy policy and endorsement by the Abe Government for the restart of nuclear reactors, subject to NRA approvals.

The Strategic Energy Plan supports use of nuclear energy because it:

- represents a quasi-domestic energy source (i.e. nuclear power can be produced for several years just with domestic stockpiles of fuel);
- generates an overwhelmingly large amount of power per unit of fuel;
- has low and stable operating costs; and
- produces zero carbon dioxide emissions at point of generation.

The Plan states squarely that, even prior to the Fukushima accident, concerns with nuclear power and resentment towards the Government

and the nuclear industry was widespread among the Japanese public. Difficulties at the Monju prototype fast breeder reactor, repeated delays to the construction of a reprocessing plant in Rokkasho and delays in selecting a final disposal site for high-level waste all generated public distrust. Cover-ups of information on the Fukushima accident and ongoing difficulties at the plant site, notably the treatment of contaminated water, are further causes of public concern.

METI explained that, notwithstanding the establishment of an independent Nuclear Regulation Authority and rigorous new safety standards, opinion polls show that 60 per cent of Japanese people remain opposed to the country's nuclear reactors being allowed to restart.

It is not surprising then that, as one its key priorities, the Japanese Government intends to address public anxiety about nuclear energy and the distrust of nuclear regulatory agencies and plant operators. It was explained that the Government is endeavoring to communicate scientific and factual information about the risks of nuclear energy and the impact of the Fukushima accident, including through public hearings in affected regions. It is also seeking to reestablish trust with local municipalities hosting nuclear plants.

The Plan emphasises the reconstruction of the Fukushima Prefecture, ensuring compensation is paid to victims, decommissioning the four units at the Fukushima Daiichi plant and tackling the problem of contaminated water at the plant site. It is expected that full

decommissioning of the four Fukushima Daiichi reactors will take up to 40 years.

Under the Plan, the Government intends to develop Fukushima as a centre for energy industry technology, including building an integrated gasification combined cycle demonstration project, floating offshore wind technology and an LNG terminal.

The Government also intends to 'drastically reinforce and comprehensively promote' efforts to manage the disposal of spent reactor fuel.¹⁵ This will include selection of a final disposal site while allowing for retrievability, expansion of intermediate storage facilities, and the development of technologies to reduce the volume and radiotoxicity of nuclear waste.

On this issue, the delegation enquired about Japan's approach to the treatment of used nuclear fuel and was advised that there are essentially two options: direct disposal, typically following a 'once-through' cycle; or to reprocess the spent fuel, in which the unused fissile material is extracted and recycled in the fabrication of fresh fuel.

The Strategic Energy Plan commits strongly to reprocessing used fuel in Japan and to utilising the recovered plutonium in light water reactors. A large reprocessing plant has now been constructed which is located at Rokkasho (Honshu). However, with NRA assessments pending, the plant is not expected to commence operating until at least 2016.

Until a reprocessing facility was constructed, most used fuel from

Japanese reactors was sent for reprocessing to the UK and France, and then returned to Japan as vitrified high-level waste, together with mixed (plutonium-uranium) oxide (MOX) reactor fuel. Shipments to Europe ended in 1998 and used fuel now accumulates in Japan, mostly at reactor sites. The Plan commits to solving the various problems that have arisen concerning the Rokkasho plant and to the construction of a MOX fuel fabrication plant.¹⁶

METI noted that two of the key benefits to reprocessing used fuel are that it enables a 75 per cent reduction in the volume of high-level radioactive waste and significantly shortens the period required for the radiotoxicity of the used fuel to decline to that of natural uranium to less than one-tenth of direct disposal. METI also noted that the Fast Reactor / Fast Breeder Reactor fuel cycle, which is being studied in Japan, may be able to further reduce the amount of high-level radioactive waste. Reprocessing is also expected to significantly reduce the cost of final disposal.

As noted above, the Abe Government has now set a goal of generating between 20 and 22 per cent of electricity from nuclear plants by 2030. METI explained that 20 reactor units at 13 plant sites are now under review for restart by the NRA, in accordance with new processes and safety regulations issued in July 2013.¹⁷

Two units at Sendai (Kyushu) were the first to obtain approval to restart and were expected to do so in early 2015 (the units were restarted in August and October 2015). On 6 April 2016 a Japanese high court rejected an appeal

by local residents seeking a temporary injunction against the operation of the Sendai reactors, with the presiding judge determining that, according to the latest scientific knowledge, the new safety requirements are adequate and that the plant is at no specific risk.¹⁸

It was explained that under the new regulatory requirements plant operators must receive approval from both national and local governments for a restart to occur.

As at March 2016, four units had been restarted (Sendai 1 and 2, and Takahama 3 and 4). However, a district court issued an injunction on 9 March 2016 which required Kansai Electric Power Company to shut down the Takahama units.¹⁹ Nevertheless, some commentators estimate that between six and 12 units will resume commercial operation by March 2017.²⁰

METI observed that the restarts may eventually place downward pressure on gas prices and reduce Japan's extreme reliance on imported fossil fuels.

Asked about the relative costs of power generation by energy source in Japan, METI advised that energy generation costs for 2010 were as follows: nuclear power costs at least ¥8.9/kWh (approximately 11¢/kWh), coal costs ¥9.5/kWh, and LNG costs ¥10.7/kWh. Costs for oil-fired plants were estimated at between ¥22 and ¥36/kWh. Wind costs in the range of ¥10 to ¥17/kWh and solar PV cost in the range of ¥33 to ¥38/kWh.²¹

The cost figure for nuclear power includes capital, operational and back-end costs, as well as additional post-Fukushima safety measures, subsidies

given to host communities of nuclear plants, R&D costs, and damages identified at present for the Fukushima accident (¥5.8 trillion, or ¥0.5/kWh).

However, the accident risk fund component was said to be a minimum figure and costs would increase by ¥0.09/kWh for each additional ¥1 trillion (approximately \$12 billion) of damage, including compensation to residents, resulting from the accident. For example, if damages amount to an additional ¥10 trillion (approximately \$120 billion), then nuclear generation would cost ¥9.3/kWh. Even in this scenario, however, nuclear power would still be less costly than other baseload power sources in Japan.

Japan-Australia energy relationship

Australia's energy relationship with Japan is extremely close. Australia is Japan's largest supplier of energy resources, providing almost 25 per cent of Japan's energy needs, including: 64 per cent of Japan's coal imports (valued at \$11.9 billion in 2014), 21 per cent of LNG (\$14 billion) and 19 per cent of uranium imports.

As noted by METI officials, Japan is a vital export market for Australia's energy resources, receiving 81 per cent of Australia's LNG exports, 37 per cent of Australia's coal exports and 23 per cent of uranium exports.

METI explained that Japanese corporations have interests (both as participants and buyers) in ten LNG projects in Australia at the present time:

- *Gorgon* (Tokyo Gas, Osaka Gas, Chubu EPCO)
- *Curtis Island* (Tokyo Gas)

- *Darwin* (INPEX, Tokyo EPCO, Tokyo Gas)
- *Sunrise* (Osaka Gas)
- *Prelude* (INPEX)
- *Ichthys* (INPEX, Total, Tokyo Gas, Osaka Gas, Chubu EPCO, Toho Gas, Kansai EPCO, Osaka Gas, Kyushu EPCO)
- *Browse* (Mitsubishi, Mitsui)
- *North West Shelf* (Mitsubishi, Mitsui, Tokyo EPCO, Kansai EPCO, Chubu EPCO, Chugoku EPCO, Kyushu EPCO, Tokyo Gas, Osaka Gas, Toho Gas)
- *Pluto* (Kansai EPCO, Tokyo Gas)
- *Wheatstone* (JOGMEC, Mitsubishi, NYK, Tokyo EPCO, Kyushu EPCO, Tohoku EPCO, Chubu EPCO)

METI also noted that the Ichthys Project is the first Japanese-operated world-class LNG project. The Project, which is being led by INPEX, represents a \$34 billion investment. Australia's share of Japan's energy imports will expand further once Ichthys commences production.

The delegation notes that on 20 March 2016 Chevron announced that the first shipment of LNG from the Gorgon Project had departed Barrow Island off northwest Western Australia for Chubu EPCO in Japan.²²

Low emissions coal-fired power generation technology

Having been briefed by METI on the place of coal in Japan's future power mix (forecast to be 26 per cent in 2030) and the country's intention to expand R&D in high-efficiency and low-emissions (HELE) coal-fired power technologies for export, the delegation was fascinated to visit the **Isogo Thermal Power Station**, reputed to be

the most advanced commercial coal-fired power station in the world.

The Isogo Power Station, which is comprised of two units with a combined generation capacity of 1,200 megawatts (MW), is located in Yokohama and operated by J-Power, a wholesale electricity company operating 66 (mostly hydro) plants across Japan. The Isogo plant uses coal sourced from Australia and Indonesia.

The Isogo Power Station originally consisted of two 265 MW units which were constructed in the 1960s. J-Power entered into a pollution prevention agreement with Yokohama city in the 1990s which involved maintaining power supply while constructing new units on the same site. In what J-Power described as a 'Build, Scrap and Build' approach, a new (600 MW) unit was built on the site while the original facility remained in operation. Once the new unit became operational in 2002, the older units were shut down and demolished. A new second unit (also 600 MW) was then constructed on the site of the old plant and commenced operating in 2009.

As explained to the delegation by Dr Hiroshi Sasatsu, the Director of the Isogo Power Station, the new units use a technology which raises the steam pressure and temperature to the ultra-supercritical (USC) level; specifically, the plant operates at a steam pressure of 25 megapascals (3,626 psi) and a temperature of 600°C.

This USC technology allows the plant to achieve an energy efficiency (i.e. the power output achieved for a given input of fuel) of 45 per cent, which is among the world's highest efficiency

levels for coal-fired plants. Worldwide, the average efficiency for coal-fired generation is 35 per cent. As a consequence, the Isogo plant emits more than 25 per cent less carbon dioxide (0.8kgCO₂/kWh) than a plant operating with global average efficiency.

As a comparison, in 2010 the energy efficiency of coal-fired power generation in Australia was 34 per cent and the carbon dioxide intensity was 1.01kg/kWh.²³

The Isogo Power Station also emits very low amounts of nitrogen oxides (NOx) (0.07g/kWh compared to 1.2g/kWh for US plants) and sulphur oxides (SOx) (0.03g/kWh, compared to 3.3g/kWh for US plants), making it the cleanest coal-fired power plant in the world. The Isogo plant's NOx and SOx emission levels are similar to those of combined cycle gas-fired power plants.

Combined, the two new larger units generate more than double the power but emit 50 per cent less SOx, 80 per cent less NOx, 70 percent less particulates (soot and dust) and 17 per cent less CO₂ than the older subcritical units that they replaced.

J-Power has calculated that if its USC technology were used in place of current coal-fired power stations operating in the US, China and India carbon dioxide emissions could be reduced by a combined total of 1.3 billion tonnes per year. This figure is equivalent to approximately 5 per cent of the world's total carbon dioxide emissions, or about the same as Japan emits annually. J-Power hopes to transfer the technology both as a business opportunity for the company

and as a contributor to global emissions mitigation.

Asked about the economics of USC, METI stated that the capital costs of USC units are approximately 20-30 per cent higher than conventional (subcritical) units. However, the greater thermal efficiency of USC technology reduces fuel and emissions costs by 25 to 30 percent and hence significantly reduces operating costs over the life of the plant.²⁴

J-Power is continuing to make R&D investments to lift the efficiency of coal-fired power generation even higher, and thereby reduce emissions. In particular, the company is working on oxygen-blown coal gasification technology and applying this to integrated coal gasification combined cycle (IGCC) and integrated coal gasification fuel cell combined cycle (IGFC) systems. Advanced ultra-supercritical (A-USC) and IGCC are seen as the next stages in the evolution of low-emissions coal technologies.

The delegation notes that should USC and other HELE technologies become more widely adopted this would undoubtedly be beneficial, both for Australia's coal exports and global carbon emissions.

METI officials made the telling observation that Japan and Australia have the same position on the role of coal and coal-fired power generation into the future; a view which is opposed to that held by the US and UK. Specific mention was made of the Obama Administration's opposition to the financing of new coal-fired power plants in developing countries by multilateral lenders.

Business perspectives on Japan's energy policy

Following the briefing from METI and the visit to the Isogo power station, the delegation met with Mr Katsunori Nemoto, Managing Director of Keidanren, Japan's Business Federation, to gauge business perspectives on the nation's energy policy. The delegation was briefed by Mr Masami Hasegawa, Senior Manager of Keidanren's Environment Policy Bureau, who presented the delegation with two of Keidanren's energy policy position papers.

Keidanren's membership comprises over 1,300 Japanese companies, 112 nationwide industrial associations and 47 regional economic organisations.

Keidanren noted that following the earthquake in 2011 electricity prices for businesses rose by some 30 per cent, and that this had significantly affected business operations. Combined with the costs of fuel imports and Japan's declining current account surplus, Keidanren argued that four energy policy measures needed to be taken urgently in order to support economic growth:

- Accelerate the process for restarting nuclear power plants. Specifically, Japanese business wishes to see the Government provide clear explanations to the public about the necessity for nuclear power and do more to encourage its utilisation. It was argued that efforts should be made to expedite the safety review process for plants by increasing the NRA's resources;
- Abolition of Japan's carbon tax. Keidanren wish to see the 'Tax for Climate Change Mitigation', which was introduced after the

earthquake, abolished. It was argued the tax has accelerated the rise in energy costs, is hindering economic growth, may discourage investments in R&D and may actually increase emissions by moving business offshore.

- Overhaul renewables policy. Keidanren notes the potential presented by renewables but is concerned at the burden placed on consumers by the FiT and that the scheme has encouraged an inappropriate growth in solar PV. Business would like to see the FiT mechanism reviewed and preferably abolished, arguing that efforts at emissions reduction should be focused on R&D and technological innovation. Keidanren noted several drawbacks to wider deployment of renewables, such as its low efficiency, instability, intermittency and relatively high cost.
- Reduce energy costs. Noting the limits on the capacity of businesses to operate more energy efficiently, Keidanren argues for reforms to the subsidy, financing and taxation systems associated with energy efficiency measures.

In terms of electricity market reform, Keidanren expressed concern about the possible impacts of deregulation and unbundling of transmission and distribution on the ability of generators to obtain finance. Keidanren argued that consideration should be given to using capacity mechanisms or an open bidding procurement method for future power generation projects.

Keidanren supported the Government's efforts to identify a location for a high-level waste repository and for early

operation of the reprocessing and MOX fuel fabrication plants. However, it called on the Government to clarify the extent of the 'grave natural disaster' exemption in the legislation for compensation for nuclear damage.

Asked about the intensity of public opposition to nuclear power, Keidanren commented that, once the Sendai units restart, it is hoped that the atmosphere in Japan will start to change.

Parliamentary engagements

The delegation was honoured to meet the Presiding Officers of the National Diet – Mr Masaaki Yamazaki, President of the House of Councillors, and Mr Bunmei Ibuki MP, Speaker of the House of Representatives – and to hold meetings with members of the Japan-Australia Parliamentary League of Friendship, led by Chairman, Mr Ichiro Aisawa MP.

The JAEPF and its consideration by the Diet figured prominently in discussions. It was noted that the Agreement represents an historic development in economic relations between the two countries and will strengthen the partnership between Japan and Australia.

League members observed that 2014 was an extraordinary year in the relationship between Japan and Australia, noting that the Prime Ministers have visited each other's countries, meetings have been held between the Foreign Affairs and Defence Ministers, and the trade relationship has never been stronger. It was remarked that Australia is a very special friend and that Japan would like to deepen this partnership in both the economic and security fields.

Issues raised in discussions with the League included how Japan and Australia could cooperate on the setting of international trade rules, such as for the TPP. Delegation members were asked how the economic reforms undertaken in Australia in the 1980s came about. Protection of agriculture in Japan was raised and Japanese Parliamentarians noted that while tariffs on rice are very high, the reductions on beef tariffs will be rapid once the JAEPA comes into effect. It was also noted that Prime Minister Abe has commenced agricultural reform in Japan but that this will take time.

League members also remarked that Australia and Japan have an important role to play as democracies. It was noted that some countries act against democratic values and that it was important for these principles to be upheld and affirmed by both Japanese and Australian Parliamentarians.

The welcome shown to the delegation, which was hosted to a meal showcasing Japan's exquisite cuisine in the beautiful surrounds of the Speaker's residence, was quite extraordinary. The delegation records its gratitude to the League of Friendship and the Speaker for their generous hospitality. The delegation was deeply honoured by this occasion and very much enjoyed the warmth and friendliness of our interaction.

While in Tokyo the delegation learned that Prime Minister Abe may call a snap general election. This occurred on 18 November, after the delegation had departed for Korea. Prime Minister Abe called the election for 14 December and stated that he was seeking public support to continue his Government's

plans to stimulate Japan's economic growth; so-called 'Abenomics'. The Liberal Democratic Party, led by Mr Abe, won the subsequent general election and retained its two-thirds majority of the Diet with coalition party, Komeito.

Australia's business relations with the Kansai region

Following informative briefings in Tokyo which provided national policy perspectives, the delegation was able to explore Australia's business relations with the Kansai region, briefed and hosted by the Australian Consul-General and Senior Trade Commissioner, Ms Catherine Taylor.

In particular, the delegation was delighted to be able to witness the use of Australia's mineral and energy resources exports with visits to Osaka Gas Co, the Osaka Steel Works of Nippon Steel & Sumitomo Metal, the Sakai LNG Terminal and Sakaiko Power Station owned by Kansai Electric Power Company.

These visits gave the delegation an insight not only into the central role that Australia's energy and mineral exports play in the Japanese economy, but also the impressive scale and sophistication of Japanese industry.

The delegation was informed that the Kansai region has a population of over 22 million, which is 17 per cent of the nation's total population. The region is responsible for 16 per cent of Japan's GDP and has a gross regional product of US\$879 billion. Osaka was said to be the hub of manufacturing in Japan, with companies such as Toyota and Honda, as well as leading electrical companies located there. The region is also

significant for R&D, for example, in pharmaceuticals and semiconductors. Osaka also has the highest concentration of SMEs in Japan – some 40,000.

The delegation was informed that Australia has a strong relationship with the Kansai region. Osaka is a base for Australia's imports to Japan, notably of food and energy resources. There are some 96 connections between Australian universities and those in the region. Several Australian companies, such as ANZ, NAB and the Goodman Group have a presence in Osaka.

The delegation visited the headquarters of Osaka Gas Co and was pleased to meet with Mr Kazuhisa Yano, Senior Executive Officer and a member of the Board, and Mr Shigeki Hirano, Chairman of Osaka Gas Australia.

Founded in 1897, the **Osaka Gas Group** is a leading energy supplier in Japan. The Group supplies natural gas to 7.1 million customers in the Kansai region, including the urban centres of Osaka, Kobe and Kyoto. It is the second largest domestic supplier, accounting for 25 per cent of all natural gas sold in Japan. Osaka Gas imports 8 million tonnes of LNG annually (from seven countries: Indonesia, Malaysia, Brunei, Australia, Oman, Qatar and Russia), which is 9 per cent of Japan's total LNG imports. Some 20 per cent of Osaka Gas' LNG is sourced from Australia. Osaka Gas is involved in all aspects of the natural gas supply chain, from LNG production, LNG receiving terminals (three in Kansai), gas transmission and distribution, and retail sales.

The Group consists of 150 affiliated companies employing over 21,000

people. In 2014 the Group had assets valued at US\$15.7 billion and annual revenues of US\$13.9 billion. It was explained to the delegation that the company invests ¥9 billion (approximately \$100 million) on R&D activities annually and employs over 230 staff for this purpose.

Upstream LNG projects in Australia in which Osaka Gas has an interest include Gorgon (1.25 per cent), Sunrise (10 per cent), Evans Shoal (10 per cent), Ichthythys (1.2 per cent) and Crux (LNG and condensate) (3 per cent). Osaka Gas' downstream projects in Australia are currently Hallett 4 Wind Farm (39.9 per cent) and EII gas plants and pipelines (30.2 per cent).

The Osaka Gas Executives noted that Ichthythys and Gorgon will soon commence producing and that Australia's Resources Minister has stated that he would like to see more LNG projects constructed. Noting the resources available in Canada, the US and some African countries, the Executives expressed their hope that Australia would remain a competitive and stable supplier.

It was explained that Osaka Gas is looking to diversify sources of supply and the company's Annual Report states that the Group is looking to procure additional supplies from projects in Papua New Guinea and Australia. In the future, Osaka Gas intends to obtain shale gas from the US.

The delegation commented how vital Japanese investment has been to the development of Australia's iron ore and now LNG resources.

The delegation raised Australian domestic gas policy issues, noting the debate occurring about reserving gas for domestic use and the differences between Western Australia and the eastern states on this question. Mention was also made of the infrastructure needs for piping of gas and the Executives expressed Osaka Gas' interest in this type of infrastructure investment. Mr Yano advised that Osaka Gas is participating in the Cooper Basin resource development talks and would very much like to be part of projects for the supply of gas for domestic use in Australia.

Asked about the company's involvement in power generation, the delegation was advised that Osaka Gas is pursuing power generation as a second core business. It operates 15 plants in Japan, using gas, coal, wind and solar. Outside Japan, the company operates eight generation projects using gas, oil and wind, producing a total of 6.6 gigawatts (GW). These plants are located in the US, Australia, Spain and the UAE. Osaka Gas has plans to expand its investments in coal-fired generation, noting that this fuel source is relatively cheap. The delegation was also told that the company has an interest in exploring brown coal gasification in Victoria.

The delegation was conducted on a tour of the company's Central Security Control Centre and the Iwasaki Energy Centre to learn about the deployment of district heating and cooling installations in Kansai.

Osaka Gas manages a 60,000 km pipeline network in the Kansai region. This includes central control

monitoring, safety monitoring and dispatching. As explained to the delegation, measures to deal with earthquakes and other natural disasters include a back-up distribution control centre, the use of 'blocks' in pipelines which prevent supply to only the damaged areas, installation of hundreds of seismometers, and wireless and satellite communication networks. Gas supply is automatically suspended when a seismometer detects an earthquake above a specified level.

Following its visit to Osaka Gas, the delegation was briefed on **Nippon Steel & Sumitomo Metal Corporation** (NSSMC) and toured the rail wheels casting works at the Corporation's **Osaka Steel Works**.

Sumitomo Metal Corporation, which was established in 1901, merged with Nippon Steel in 2012. The merged corporation is a major steel maker and manufactures products in the following eight categories across 15 countries, including at 16 steel works in Japan:

- steel plates for structures such as ships, bridges, high-rise buildings, storage tanks and large marine structures;
- flat sheet steel products, for automobiles, beverage cans, electrical appliances and housing;
- bar and wire rods for products such as vehicle suspensions and drive trains;
- construction products, such as H-beams;
- pipes and tubes, used in applications such as oil and gas extraction;
- railway, automotive and machinery parts, notably railway rolling stock and forged crankshafts for automobiles;

- titanium and specialty stainless steel products, including for aircraft engines; and
- stainless steel products.

NSSMC employs 84,000 people and in 2015 had net sales of ¥5.6 trillion (approximately \$54 billion). The company produced 49.3 million tonnes of crude steel in 2014, the second largest by volume in the world. The company has a global market share of 10 per cent.

The delegation was informed that NSSMC sources 50 per cent of its iron ore from Australia and has done so for the past decade. The company is developing new materials for rail freight use and has tested its high-hardness wheels in Australia to improve their anti-wearing and anti-shelling properties. These field tests were successfully completed in May 2014. As a consequence, the rejection rate of the company's Class D rail wheels is much lower than Class C; specifically, the survival rate of Class D wheels is 1.8 times more than the C Class. NSSMC intends to deepen its relationship with Australia, for example, by seeing its wheels introduced into vehicles for mining.

The delegation had the opportunity to tour the facilities at the company's Osaka Steel Works and saw an array of finished railway and automotive products, such as car and truck crankshafts, bogies for subway trains, solid and corrugated train wheels, forged steel brake disks and hollow axles. Of particular note, the Steel Works has been the sole manufacturer of the axels and wheelsets for Japan's Shinkansen high-speed ('bullet') trains since they commenced operating in

1964. The delegation observed many impressive forming, machining and assembly processes at the Steel Works, including a die-forging shop for crank shafts, a rail wheel rolling mill, high-speed precision forging machines, and wheelset and bogie assembly shops.

The delegation was briefed on the operations of **Kansai Electric Power Company (KEPCO)**, the processes for receipt of LNG and supply of natural gas from the **Sakai LNG Centre** to KEPCO's Nanko and Sakaiko power stations, and saw the **Sakaiko Power Station** in operation.

The delegation was briefed on the operations of the Sakai LNG Centre by the President, Mr Tetsu Shiota. The Centre is located in the Sakai-Senboku coastal industrial zone in the Osaka Prefecture. The LNG supplied by four producer countries (Australia, Malaysia, Indonesia and Qatar) is received at the Centre, which is an LNG regasification terminal. The gas is then supplied to the KEPCO power stations and to a factory in the vicinity.

Some 3.9 million tonnes of LNG is received at the Sakai terminal each year and Australia supplies the largest share – 1.5 million tonnes, or 38 per cent, in 2013. The Australian LNG is sourced from Woodside's Pluto project in which KEPCO has an interest. Australia's share of LNG supply at Sakai is expected to increase.

The processes for the receipt and supply of LNG were explained in detail. LNG arrives by tanker, transported at a temperature of minus 160°C. The LNG is then piped from the tankers into one of three LNG storage tanks at the Centre. These have a capacity of 140,000kL

each. The LNG tanks have very large dimensions (80 metres in diameter and 50 metres high) and are constructed of double containment steel and 70cm of pre-stressed concrete. The tanks sit on a foundation made up of vertical steel pipes, each of which is 40 metres long, which can withstand large scale earthquakes. When required, the LNG is regasified using the heat from seawater. The natural gas (NG) is then piped, at room temperature, to the two gas-fired power plants and the factory. The delegation was shown the Centre's Control Room and was able to view the storage tanks from the Centre's roof.

The Sakaiko Power Station comprises five 400 MW units and the Nanko Power Station is comprised of three 600 MW units. The two power stations have a combined generation capacity of 3,800 MW. Gas received at the Sakai terminal travels along a 3.5 km pipeline, which has a width of 75 cm, at a pressure of 4.58MPa to the Sakaiko Power Station.

The Sakaiko Power Station commenced operating in the 1960s with eight 250 MW oil-fired units. These were converted to operate on natural gas in 1974. In 2006 the facilities were upgraded to five 400 MW combined cycle gas turbine (CCGT) units which have improved the Plant's thermal efficiency by 40 per cent (now 58 percent, compared to 41 per cent before the conversion).

Thermal or generating efficiency is crucial to a plant's economic performance. It was pointed out to the delegation that even a one per cent increase in thermal efficiency can reduce the cost of operations by several hundred million yen.

The conversion to CCGT also substantially improved the plant's environmental performance. For instance, carbon dioxide emissions have been reduced by 30 per cent (from 510gCO₂/kWh to 360gCO₂/kWh), and SOx and particulates have been reduced to zero. NOx emissions have been reduced by 60 per cent. By undertaking the upgrade to CCGT, the amount of land required for the power station was also halved.

The delegation was briefed and escorted on a tour of the power station, including the turbine floor, by the Station's Manager, Mr Tetsui Yamamoto. In CCGT systems gas and steam turbines are used in combination to generate electricity. Power is dispatched from the plant on 154kV transmission lines to four substations in the region.

Sakai also supplies LNG and NG to HydroEdge Co, which is located next to the Centre and operates one of the largest production plants of liquefied hydrogen in Japan. It was explained that hydrogen is currently used for the manufacture of semiconductors, ammonia, optical fiber and, in the future, for fuel cells and liquid hydrogen fueled cars.

KEPCO supplies electricity to the Kansai region and sells the second largest amount of power after TEPCO among Japanese utilities. Sales amounted to 140,400 gigawatt-hours in 2014. KEPCO has total generation capacity of 35.9 GW, across a fleet of thermal (17.9 GW), nuclear (9.7 GW) and hydro (8.2 GW) plants. This accounts for 17 per cent of Japan's total generation capacity, which was 208 GW in 2014. For comparison, total generation

capacity in Australia's national electricity market is 44.6 GW.

Among KEPCO's fleet of thermal plants (LNG, oil and coal) LNG and oil both account for 45 per cent, or 8 GW of generation capacity, while coal accounts for 10 per cent. KEPCO officials noted that the effect of the Great East Japan earthquake and the nuclear shutdown, which took all the company's nuclear plants offline, was to significantly increase the shares of oil and LNG in supplying baseload electricity demand. The additional cost of fuel put KEPCO into a loss.

The delegation concluded its visit to Osaka by meeting staff of the **Asia Pacific Institute of Research** (APIR) and receiving two presentations given by Dr Yoshihisa Inada and Mr James Brady on the topic of 'Growing Kansai: Strategies and Sectors', and by Dr Toshihiko Hayashi on the topic of 'A very long-term prospect for the Australian economy'.

APIR was established in 2011 with the aim of supporting sustainable development in the Asia Pacific region. APIR supports its research through financial support from a large number of contributing firms, which was said to enable the Institute to be neutral and unaffiliated with any particular government or corporate entity.

The presentation on 'Growing Kansai' noted that the region produces 21 per cent of Japan's total exports and over 26 per cent of exports to Asia; that is, Kansai has a relatively high exposure to Asia. Governments in the Kansai region issued a policy in 2012 which articulated a number of strategies for regional revitalization. In APIR's view,

given the context of national population decline, actions should be taken to: promote a 'Kansai Brand' for high value-added industries; improve the utilisation of IT; invest in human capital capable of developing overseas markets; and deepen links with growing Asian economies. Specific sectors identified as having high potential for leading growth in the region were: medical innovation, tourism, 'womenomics' and developing global human resources.

It was explained that Kansai is the top region in Japan for medical drug related production and that Kansai boasts 200 universities and seven major medical clusters. For tourism, it was noted that over 2.3 million foreign visitors arrive in Japan through Kansai International Airport (KIX) each year and this has grown significantly since 2011. Encouraging Chinese tourism is a priority because the Chinese purchase high-value products and will spend up to 20 per cent of annual income while visiting Japan.

In regards to 'womenomics', it was explained that the region lags behind the national average in terms of female employment. Modelling conducted by APIR has found that if the number of working women in the region were increased by 250,000, Kansai's gross regional product would rise by 1.8 per cent or ¥1.5 trillion. A population effect would be likely to follow as female employment and the fertility rate are positively correlated in Japan.

In terms of the links between the Kansai region and Australia, Kansai's share of major imports from Australia is well above the region's share of national population. Australian arrivals at Kansai

range between 3,000 – 5,000 per month. Jet Star has five direct flights per week from KIX to Cairns / Melbourne. Australians are 50 per cent more likely to visit Kansai than the average visitor to Japan and the average spend of Australian tourists was ¥237,000 in 2013, the highest of all tourists.

The presentation on ‘A very long-term prospect for the Australian economy’ argued that population growth is the defining feature in Australia’s continued economic growth. On the assumption that current population expansion continues into the future, APIR predicts continued growth in Australia’s per capita GDP and that Australia’s ranking among the richest countries will rise (from 7th in 2000 to 5th in 2050).

Conversely, APIR predicts that Japan will decline from 13th in 2000 to 21st in 2050. In terms of GDP rankings among the G20 countries, APIR predicts that Australia’s ranking will rise from 12th in 2000 (US\$915 billion) to 10th in 2050 (\$2,344 billion) and rise again to seventh by 2100 (\$2,959 billion). Again, Japan’s relative position is forecast to decline.

APIR discussed the so-called ‘resource curse’ and the Malthusian trap. Unlike some resource rich Middle Eastern countries, Australia had maintained continued growth in per capita GDP while the population has risen. It was argued that countries risk a loss of momentum on this dimension if they don’t make investments in education, infrastructure and so on.

Noting APIR’s predictions for Japan’s per-capita GDP performance, the delegation enquired about population policy in Japan. APIR responded that

immigration is effectively banned but the country will accept high-skilled migrant workers. Japan’s fertility rate is 1.4 (i.e. 1.4 births per woman). As a consequence, Japan’s population is now declining and the economy is facing an acute shortage of labour in some sectors. However, it was explained that the issue of immigration is very sensitive in Japan and no political party will dare propose immigration as a means of making up the deficit created by a low birth rate.

The delegation expresses its thanks to the presenters and APIR’s Executive Director, Mr Yoshinobu Iwaki, for the efforts that they went to in preparing what were interesting and insightful presentations.

Hiroshima

The delegation concluded its program in Japan with a deeply moving visit to the city of Hiroshima, which was devastated by the atomic bomb detonated over the city at 8.15 am on 6 August 1945.

The delegation records its gratitude to the Deputy Director of the Hiroshima Peace Memorial Museum, Mr Noriyuki Masuda, who facilitated the visit and accompanied the delegation through the Museum.

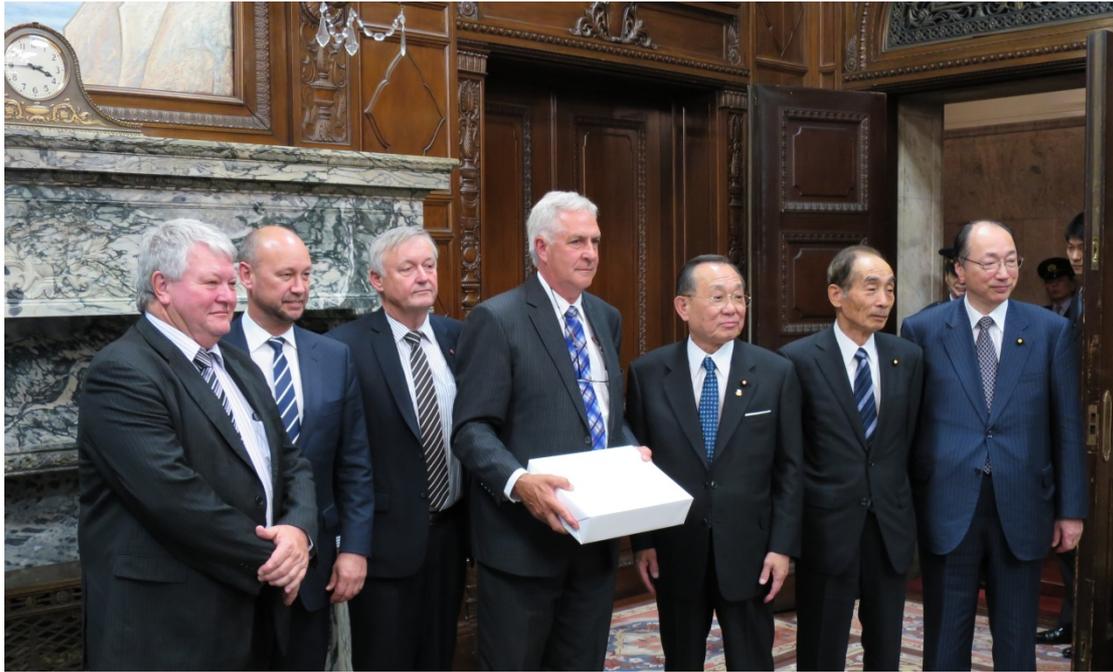
According to the city’s estimates, by the end of December 1945 the number of deaths caused by the use of the weapon had reached approximately 140,000.

The delegation was honoured to lay a wreath at the Memorial Cenotaph, located in the beautiful Hiroshima Peace Memorial Park, which contains

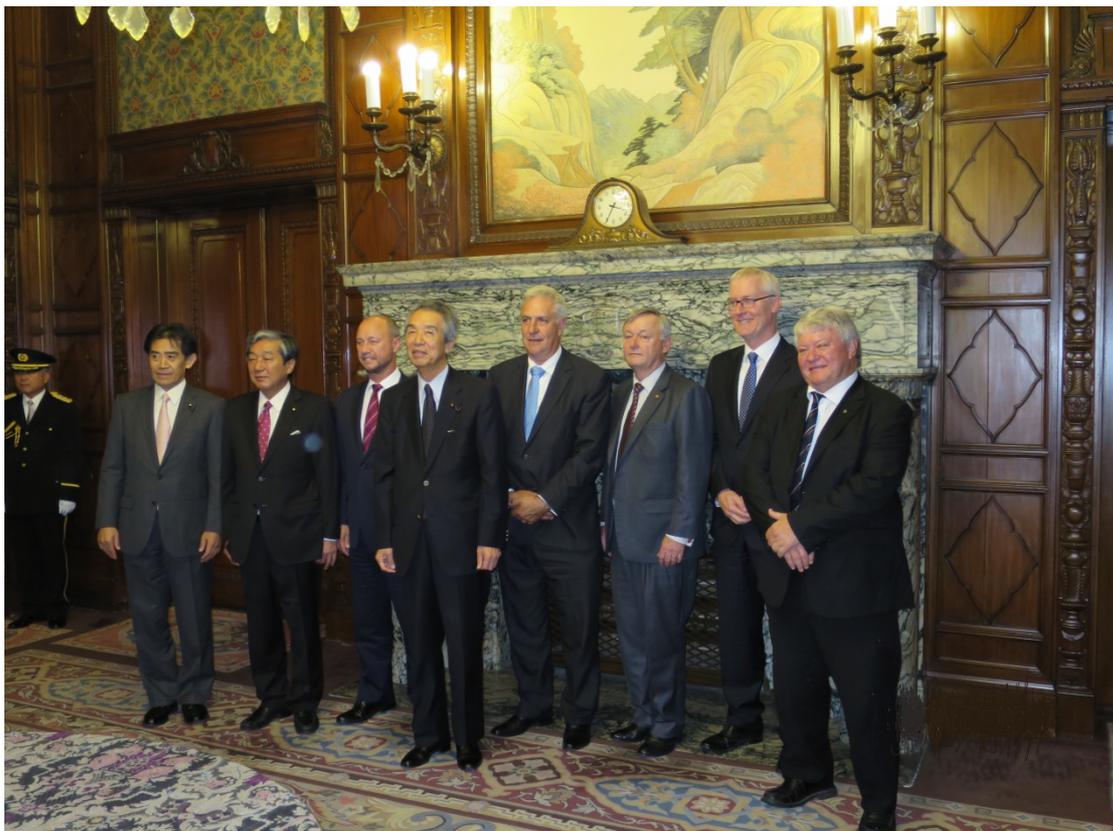
the names of all the people killed by the atomic bomb.



The delegation laid a wreath at the Memorial Cenotaph which contains the names of those killed by the atomic bomb detonated over Hiroshima on 6 August 1945. In the background to the right is the A-Bomb Dome.



The delegation with Mr Masaaki Yamazaki, President of the House of Councillors, National Diet of Japan.



The delegation with Mr Bunmei Ibuki MP, Speaker of the House of Representatives, National Diet of Japan, together with Australia's Ambassador to Japan, His Excellency Mr Bruce Miller.



The delegation with members of the Japan-Australia Parliamentary League of Friendship, Chaired by Mr Ichiro Aisawa MP (front row, second from left).



The delegation with Mr Takashi Uto, Japan's Parliamentary Vice-Minister for Foreign Affairs.



The delegation being briefed on the operations of the Sakai LNG Centre in Osaka by the President of Sakai LNG Corporation, Mr Tetsu Shiota.



The delegation with Australian university students participating in the New Colombo Plan in Japan.

Republic of Korea

The delegation visited the Republic of Korea from 15 November to 21 November 2014. The program commenced with appointments in Seoul and a visit to the Korean Demilitarized Zone, followed by site visits in Ulsan, Pohang and Busan.

The bilateral relationship

The Department of Foreign Affairs and Trade states that Australia and the Republic of Korea (ROK, also referred to here as South Korea) are strong economic, political and strategic partners with common values and interests.²⁵

The relationship is underpinned by substantial economic, people-to-people, political and strategic links. Full diplomatic relations were established between Australia and the ROK in 1961.

Australia and the ROK have evolved a highly complementary trade relationship. The ROK is a key market for Australian minerals and energy resources and education services, while Australia is a major market for Korean passenger vehicles, petroleum and electronic goods.

The ROK is Australia's fourth-largest trading partner, with two-way merchandise trade worth \$32.4 billion in 2014-15, six per cent of all Australia's international trade. The ROK was Australia's third-largest goods export market in 2014-15, worth \$18.8 billion. Major Australian exports are coal (valued at \$5 billion in 2014-15), iron ore (\$4 billion) and beef (\$1 billion). Australia's major services exports to Korea are education (\$779

million in 2014-15) and tourism (\$635 million).²⁶

The ROK is Australia's third-largest source of foreign student enrolments after China and India. In 2013, there were 27,580 enrolments by ROK students in Australian institutions.

The ROK's major exports to Australia are refined petroleum (\$4.9 billion in 2014-15), passenger motor vehicles (\$1.9 billion) and heating and cooling equipment (\$714 million).

The investment relationship is relatively modest but has grown significantly from a low base and has diversified. The total stock of ROK investment in Australia was \$22.8 billion in 2014 and Australian investment in ROK was \$15.4 billion. Significant investments include POSCO's 15 per cent equity share in Hancock Prospecting's Roy Hill iron ore project in Western Australia.

The ROK has signed three major LNG contracts to source gas from Australia – with Santos (Gladstone LNG), Total and INPEX (Ichthys) and Shell (Prelude). Once these projects are producing, it is expected that Australia will supply some 25 per cent of ROK's LNG.

On 8 April 2014 the ROK and Australia signed the Korea-Australia Free Trade Agreement (KAFTA) which, at the time of the delegation's visit, was yet to be ratified by the ROK National Assembly. The KAFTA subsequently received National Assembly approval and entered into force on 12 December 2014.

The KAFTA is said to deliver significant improvements in market access and tariff liberalisation for merchandise trade.

There are extensive people-to-people links between Australia and the ROK. Some 88,000 people of Korean descent live in Australia. The third-largest group of working-holiday makers and eighth largest market of inbound tourists come from the ROK. With the ROK accounting for the third-largest source of international students in Australia, there is a growing and important alumni presence in the ROK. The ROK became part of the New Colombo Plan from 2015.

More than 18,000 Australian troops served under United Nations command and 340 Australians were killed during the 1950-53 Korean War.

Korea's political and economic situation

The delegation commenced its program in South Korea with a highly informative briefing given by Mr Tae-Hyung Ha, President and Chief Executive Officer of the Hyundai Research Institute.

With 150 staff, the Hyundai Research Institute is the largest private research institution in Korea. It works closely with the Korean Ministries of Finance and Education, has a focus on domestic Korean economic matters and consults to local government.

Describing the current political context in Korea, President Ha explained that the sinking in April 2014 of the South Korean ferry, MV Sewol, had profoundly affected the nation. The

disaster cost the lives of more than 300 people, most of whom were school students. The repercussions of the tragedy had completely paralysed Korean politics, with the National Assembly unable to meet for months. Only in the fortnight prior to the delegation's arrival in November had agreement finally been reached on legislation to govern the investigation of the disaster.

The tragedy remained the focus for the media but the effect on the economy was said to have been marked, with many businesses affected. Korea's first quarter growth rate was 0.9 per cent and the second quarter was lower, at 0.5 per cent.

Korea has prospects of entering the so-called '30-50 Club' – economies with GDP per capita of at least US\$30,000 and a population of 50 million people. Only six other countries are in this group – US, Germany, France, Italy, UK and Japan. President Ha explained that South Koreans are, however, deeply concerned at the prospect of so-called 'Japanisation' of the Korean economy; that is, zero inflation accompanied by zero economic growth.

Turning to Australia-Korea relations, President Ha stated that the economic relationship is complementary but noted the significant role that farmers play in Korea – they want subsidies, particularly cattle farmers, and are willing to demonstrate. On the Thursday before the delegation's arrival, the proposed free trade agreements with Australia and Canada had obtained the approval of the Foreign Affairs Committee of the National Assembly, with a final vote in

the Assembly's Plenary expected by 2 December. As noted above, this subsequently occurred and the Agreement entered into force on 12 December 2014.

Attracting greater attention in Korea at the time of the delegation's visit was the ROK's proposed FTA with China. The agreement was prominent because of the significance of that economic relationship – 26 per cent of all South Korean exports are supplied to China, by far the ROK's largest market.

Turning to the issue of the ROK's relationships with neighbouring countries, President Ha explained that Korea had been occupied by Japan from 1910 to 1945 and the issue of an apology from Japan remained a vexed issue. It was suggested that Japan cannot make a clear and straightforward apology because the country's leadership cannot be seen to be blaming the Emperor. Japan is able to offer financial compensation, generally through private intermediaries, but cannot make a meaningful apology. President Park Geun-hye has sought to normalise relations with Japan and is under considerable pressure from the US to do so because, with the FTA negotiations in play and her strong personal connection with President Xi Jinping, Korea is seen as too close to China.

For Korea, maintaining a balance between the vital economic relationship with China and the military and security relationship with the US is difficult. As an example, the US argues that deployment in Korea of its Terminal High Altitude Area

Defence (THAAD) anti-ballistic missile system is essential to protect the Korean Peninsula, but China strongly opposes this. China has established an Asia Infrastructure Investment Bank (AIIB), but the US opposes it and, at that time, Korea was also concerned about the size of China's stake in the Bank. It was commented that the AIIB would undoubtedly give China greater influence in developing countries, notwithstanding that it has stated its share will decline. More generally, it was remarked that China wants to enhance its position in every field possible.

President Ha explained that the Kaesong Industrial Park, which is a collaborative economic development zone between the Democratic People's Republic of Korea (DPRK or North Korea) with South Korea, is attractive to industry because the monthly wage per worker is US\$150. Of this, the North Korean government keeps most and pays the workers 10 per cent; that is, \$15 per month. With wages pressure in the South, companies would welcome having additional economic zones established with North Korea. However, it was explained that President Park is reluctant to provide funds to North Korea because of the regime's intent to build nuclear weapons and the US has indicated that it wants a pause. In February 2016, the South Korean Government announced it would halt operations at the Kaesong Industrial Park following a rocket launch by the DPRK.

North Korea was said to be totally dependent on China. If China withheld aid from North Korea for just three months, the country would collapse.

However, China views North Korea as a valuable buffer zone.

Korea-Australia Free Trade Agreement

The delegation received a comprehensive briefing from Ms Wendy Haydon, the Austrade Trade Commissioner in the ROK on the status of Korea-Australia trade relations and the potential benefits of the KAFTA. It was noted that, to date, Australia's trade with the ROK has been dominated by resources exports, notably from Western Australia and Queensland, and there is potential for significant growth both in agricultural products and in services exports.

Once the Agreement enters into force, 84 per cent of Australia's goods exports (by value) would enter Korea duty free; by full implementation, tariffs on 99.8 per cent of Australia's exports to Korea will be eliminated.

KAFTA is said to put Australia's agricultural exports 'back in the game' with, for example, elimination of tariffs over time on cheese, butter and other dairy products. Tariffs on wine will be eliminated on entry into force, as will tariffs on fruits, nuts, seafood and vegetables. Tariffs on automotive parts would be eliminated on entry into force, as will tariffs on natural gas.

Importantly, it was explained that KAFTA opens new markets in Korea for Australia's services sector and will provide the best treatment for services that Korea has agreed with any trading partner. Legal, financial and accountancy services are expected to benefit. KAFTA also guarantees access in a range of other sectors including education. Korea will

have access to the higher Foreign Investment Review Board screening threshold. This is expected to help diversify and grow investment from Korea into Australia.

The delegation had the welcome opportunity to explore the potential benefits and opportunities presented by the Agreement with representatives of SPC Group, Korea Botany, Treasury Wine Estates and Lotte Chilsung Beverage Co.

Parliamentary engagements

The delegation was honoured to meet Representative Ui Hwa Chung, Speaker of the National Assembly of the Republic of Korea, and to hold a meeting with members of the Korea-Australia Parliamentary Friendship Group, led by the Group's Chairman Representative Yoo-Chul Won (now the leader of the Saenuri Party in the National Assembly following the April 2016 general election²⁷).

The Speaker spoke enthusiastically about the proposed KAFTA, stating that its passage means a great deal to both countries and promises greater prosperity. The Speaker noted that Korea and Australia have complementary economies and are also counter seasonal. He expressed strong confidence that the KAFTA would not encounter difficulties in the National Assembly. He informed the delegation that the Agreement would be considered in the Plenary session which would take place from 2 to 9 December.

The Speaker made particular mention of Australia's participation in the Korean War and remarked that this continues to be deeply appreciated in

South Korea. It was said that Australian's have 'good hearts' and are always willing to contribute to humanity and the cause of peace, for example, with peacekeeping efforts.

The Speaker explained that an urgent issue for South Koreans is to achieve reunification between North and South. To do this, the Republic of Korea needs Australia's support, including for the denuclearisation of the Korean Peninsula.

The MIKTA grouping of countries, comprised of Mexico, Indonesia, the Republic of Korea, Turkey and Australia, was said to be a very promising initiative. The Speaker indicated that he attaches great importance to such middle-power diplomacy and expressed the hope that there would be a gatherings of the Presiding Officers of the five nations on a regular basis, both to advance peace and prosperity, but also as a counterbalance to nations that might seek hegemony.

Speaking on behalf of the Korea-Australia Parliamentary Friendship Group, which hosted the delegation to a very pleasant lunch, Representative Won also recalled with gratitude Australia's contribution in the Korean War and the countries' shared adherence to liberal democracy and a market economy. Representative Won stated that the KAFTA will deepen the trade relationship and expressed the hope that the friendship between Korea and Australia will grow.

The KAFTA and its consideration by the National Assembly figured prominently in discussions. It was noted that the Agreement represents

an historic development in economic relations between the two countries and will strengthen the partnership between Korea and Australia.

The delegation expressed the hope that with the removal of tariffs under the KAFTA, Australia's premium wine will be consumed in Korea and Australian wine makers will be able to engage with local distributors.

On the prospects for the passage of the KAFTA through the National Assembly, Representative Won stated that the KAFTA is likely to proceed quickly as Korea would like to increase its share of the Australian car market. However, other members of the Friendship Group pointed out that Korean farmers are concerned that their markets will be damaged because of imports of Australian agricultural products.

The delegation enquired why the Koreans were insistent on the inclusion of investor state dispute resolution (ISDS) procedures in the KAFTA. It was responded that these safeguards are also in the agreement Korea has with the US and are needed because of unforeseen issues. It was explained that Korea has had cases in the past and the inclusion of ISDS provisions are a safety net.

The Friendship Group were complimentary about the stance taken by then Prime Minister Abbott on the Russian military incursion in Ukraine, and commended his remarks concerning President Putin which they considered brave.

In addition, the delegation was pleased to meet Representative

Moon-Jong Hong, Chairman of the Science, ICT, Future Planning, Broadcasting and Communications Committee of the National Assembly. Representative Hong observed that reform of the National Assembly, including the possibility of introducing an upper house, is being considered. There is a view among the South Korean public that, with some 300 Representatives, the National Assembly is too large and should be reduced in size.

Representative Hong felt that the KAFTA would not destroy Korean farming but observed that farmers in Korea are ageing and their union is very strong. The fine quality of Australian wine, cheese and honey were mentioned.

Asked how South Korea had achieved such fast internet speeds, Representative Hong remarked that intense competition between telecommunication companies had driven down prices and stimulated innovation.

Representative Hong commented on the education linkages between South Korea and Australia. For instance, some 15,000 Korean students are studying in Queensland. However, study in Australia was said to be relatively expensive. The delegation was asked if work and study programs for Korean students in Australia could be expanded.

Australian alumni

It was a particular pleasure for the delegation to meet a group of Korean alumni of Australian universities who had fond memories of their time spent in Australia.

Among the guests present at the alumni reception, the delegation learned about the work of the Centre for Australian Studies (CAS) at Yonsei University. The Director of the CAS, Professor Heejin Lee, explained that the Centre opened in 2008 and has the mission of 'connecting Australia and Korea through research, education and networking.' The CAS is said to be the hub of Australian studies in Korea. The motivation for the Centre's establishment was a perceived lack of knowledge about Australia in Korea and there was no centre for Australian studies.

The Centre aims to cultivate exchanges in various areas and enhance awareness and trust between Korea and Australia. Among its activities, the Centre prepared a remarkable *Australia and Korea: The 120 Years of History* publication and hosts seminars and conferences. The delegation also met Professor Matthew Richards of Deakin University, who was then the Australian visiting lecturer at the Centre.

Korean Demilitarized Zone

Escorted by Captain Brett Dowsing, RAN, Australia's Defence Attaché in the ROK, the delegation had the opportunity to visit the Korean Demilitarized Zone (DMZ) in the Joint Security Area, Panmunjeom and to learn more about the Korean War and the status of the Armistice. The tour included visits to: the Mount Dora Observatory, which looks across the DMZ into North Korea; the Conference Row buildings which straddle the Military Demarcation Line, including the UN Military Armistice Commission conference room; the facilities of the

Neutral Nations Supervisory Commission (NNSC); and the Third (North Korean) Infiltration Tunnel, which was discovered in October 1978 and runs beneath the DMZ to the southern side.

The delegation received comprehensive briefings on the United Nations Command, Military Armistice Commission (UNCMAC) which was established at the end of the Korean War in 1953 to supervise the Armistice Agreement. The delegation was also briefed on the role of the NNSC by Colonel Christian Jørgensen, representing the Swiss Delegation, and Major Peter Forsberg, representing the Swedish delegation, and appreciated their generous hospitality.

Nuclear power in Korea

The delegation was briefed on the Korean Government's policies for nuclear power by Mr Keun-Oh Park, Senior Deputy Director with the Nuclear Power Plant Cooperation Division in the Ministry of Trade, Industry and Energy (MOTIE).

Nuclear power generation in Korea has gone through four phases. The first phase began in 1974 with a Korea-US Atomic Energy Agreement which enabled the transfer of nuclear power technology to ROK, but banned South Korea from enriching uranium or reprocessing used fuel. Nuclear power plants were introduced, on a turn-key basis. This was followed by a second phase in the 1980s which saw the establishment of a 'localisation and technology accumulation' plan. In the 1990s, Korea moved into a third phase of greater technological self-reliance which saw the development

of an indigenous Optimized Power Reactor (OPR) 1,000 MW design. In the 2000s, ROK moved into its fourth and current phase with the development of a third-generation Advanced Power Reactor (APR) 1,400 MW design. Presently, Korea is focussing on exporting nuclear power plants, discussed below, and advancements on the APR (APR+) design.

At the time of the delegation's visit, there were 23 nuclear reactors in operation in ROK, with installed generation capacity of 20,716 MW (20.7 GW), producing 27 per cent (or 138,783 GWh) of Korea's electricity supply. Other power sources are: coal, which generates 38.8 per cent; gas generates 24.6 per cent; oil generates 5.8 per cent; and renewables (hydro) generate 1.7 per cent.

Another five nuclear units are currently being constructed, which will add 6.6 GW capacity. A further six units, which will have 8.6 GW capacity, are planned. All nuclear reactors are operated by Korea Hydro and Nuclear Power Co (KHNP), which is a subsidiary of Korea Electric Power Corporation (KEPCO) in which the Korean Government has a 51 per cent share.

The ROK's 28 reactors either operating or under construction are located at just four sites: Hanul (8 units); Wolsong (6 units); Hanbit (6 units) and Kori (8 units).

Korea's National Basic Energy Plan is set every five years and operates for the following 20 year period. Under the 2nd National Basic Energy Plan, issued in January 2014, nuclear's target share of electricity supply is 29

per cent by 2035. This was reduced from a 41 per cent target under the previous (2008) plan. Renewables are planned to supply 11 per cent by 2035, the same share as identified in the 2008 Plan.

With similarities to the Japanese approach, the ROK's Basic Energy Plan includes elements such as enhancing energy security, establishing a range of power sources and enhancing safety. The reasons given for ongoing use of nuclear power are industrial competitiveness, energy security and carbon dioxide emissions mitigation.

With 27.3 GW of nuclear capacity currently operating or under construction and a further 8.6 GW planned, this means that an additional 7 GW of nuclear capacity will be needed to meet the new national target of 43 GW from nuclear by 2035.

In July 2015, MOTIE issued a 7th Basic Long-Term Power Development Plan of Electricity Supply and Demand which increased the planned 12 new reactors in operation by 2029, with the Kori 1 unit closed by then. This is two more units than planned for in the National Basic Energy Plan issued in 2014 and would see 35 reactors operating in 2029.²⁸

Notwithstanding the strong performance of nuclear power in Korea, evidenced by its unit capability factor and unplanned capability loss factor, there has been increased anxiety and distrust among the Korean public following the Fukushima accident in Japan. Safety enhancements have been applied to all reactors, such as passive hydrogen removal systems, exhaust and

decompression equipment, higher coastal barriers and so on. Korea is also investing in safety improvements in its reactor designs.

To build public acceptance of nuclear power, MOTIE advised that it is carrying out promotional and educational activities which emphasise nuclear energy's safety and economic performance. In addition, MOTIE is increasing public participation and external monitoring. Assistance is also being provided to communities adjoining nuclear plants with funds contributed per kilowatt-hour of power produced for facilities and community programs.

Electricity prices are regulated in ROK and prices to households are subsidised. The delegation was informed that the price of electricity by generation source in Korean Republic Won per kilowatt-hour (KRW/kWh) in 2013 was: nuclear 39.1, coal 58.9, hydro 170.9 and LNG 215.3.

Noting that nuclear power is significantly cheaper than other power sources, the delegation enquired why Korea was utilising LNG and renewables. Mr Park responded that the costs of nuclear power are expected to rise because of social acceptance issues and there are limits on the extent to which nuclear can be expanded. For instance, an attempt to site a new reactor at the city of Samcheok was opposed by the local people and municipal government. For this reason, MOTIE cannot be sure that the Government will be able to build the additional plants required to meet the national goal.

As to nuclear waste management, a facility for the disposal of low and intermediate level radioactive waste is now under construction in Gyeongju city, which was selected in 2005. Most waste is currently stored on site at the plants. Due to the constraints imposed by the Korea-US Atomic Energy Agreement, Korea may not enrich uranium or reprocess used fuel. Korea would welcome offers from other countries willing to take its nuclear waste. Russia was said to be promising to take back waste from plants that they build, but Korea cannot offer this service. A Public Engagement Commission on Spent Nuclear Fuel Management (PECOS) has been established to engage public opinion on spent fuel disposal.

Notwithstanding the two pressing issues of reactor life extensions and used fuel management, MOTIE emphasised that the 'nuclear industry for Korea is compulsory, not optional'.

A Korean consortium was successful in its bid to build four reactors in Barakah in the United Arab Emirates, based on its APR1400 reactor. When complete, the units will have a total capacity of 5.6 GW. The project, which will be completed by 2020, will earn US\$20.4 billion for South Korea. It was commented that it is a point of great pride for Koreans that the country succeeded in winning the UAE project.

All four units are now under construction, with the first unit expected to come on line in 2017. As part of the contract with the UAE, some 200 engineers from the UAE are gaining experience at Korean nuclear plants and the delegation met some of these staff during its visit to the Kori

Nuclear Power Site, described below.²⁹

Asked how Korea had succeeded in its bid for the UAE program (against rival bids from a French consortium, led by Areva, and a US-Japanese joint venture General Electric-Hitachi), MOTIE advised that what distinguished Korea's bid was the price (which was said to be less than half that of the French option) and the shorter construction period. It also assisted that Russia did not submit a bid for the program. Russia is seen as a competitor to Korean reactor exports.

MOTIE is actively marketing Korean reactor technology to a range of countries in the Middle East, Eastern Europe, South East Asia and South America. In 2015, KEPCO announced a target of exporting six reactors, beyond the Barakah plant, by 2020.³⁰

At the time of the delegation's visit, Korea was seeking to have its 1974 agreement with the US amended to better facilitate its capacity to export and to reprocess used fuel. In April 2015 a 20-year extension to the agreement was signed which appears to allow ROK more freedom. The Korean Government believes it has achieved several goals, including the right to manage nuclear fuel and to promote export of nuclear power plants.³¹

The ROK Parliamentarians that the delegation held discussions with were consistent in their view that while nuclear power is a sensitive subject and the Korean public are concerned about safety and the disposal of nuclear waste, nuclear energy must

nevertheless continue to be used in South Korea.

For instance, Representative Hong put the view that with so few domestic energy resources, the ROK has to use nuclear energy as there are no cheaper sources available. He remarked that the community is concerned about safety, particularly following the Fukushima accident and hence the focus is now on ensuring the safety of nuclear plants because without nuclear power the price of electricity in South Korea would increase dramatically.

Underscoring the contentious nature of nuclear power in South Korea, the delegation was told that local governments in South Jeolla Province had opposed the construction of the Low and Intermediate-Level Radioactive Waste Disposal Centre in the Province. However, the city of Gyeongju in North Gyeongsang Province subsequently approved the Centre being constructed in that city.

Following discussions about the role of nuclear energy in Seoul, the delegation visited the **Kori Nuclear Power Site** in Busan. Operated by KHNP, the Kori Site is comprised of six operating nuclear reactors with two under construction (a map of the site appears on page 47). The total capacity of the reactors operating and under construction at the site is 8 GW, or 9 per cent of Korea's total.

As explained to the delegation by Mr Seong-Jin Yeo, a Senior Manager with KHNP, a further two reactors (Shin-Kori 5 and 6) are expected to commence construction in 2015. This will bring the total number of reactors

on the Kori site to ten. When completed, Kori will be the largest nuclear power plant site in the world.

Kori is referred to as the 'cradle' of Korean nuclear power generation. The first Kori unit (Kori 1) commenced operating in 1978. This was the first nuclear power plant in Korea and was built on a turnkey contract with Westinghouse, as were the subsequent two ROK reactors.

The Shin-Kori 1 and 2 units, using South Korea's OPR-1000 design, commenced operating in 2011 and 2012 respectively. Shin-Kori units 3 and 4 were almost completed at the time of the delegation's visit and fuel loading was expected to commence in January 2015. These units, using the newer APR-1400 technology, are also the reference plant for the UAE project. Features of the APR-1400 include: a design life of 60 years; an average construction period of 4 years; built to withstand earthquakes of magnitude 7.0; and have a frequency of radiation leakage of once in one million years.

Shin-Kori unit 3 became operable on 29 December 2015, the first Korean-designed APR-1400 to start. This brought the total number of reactors operating in Korea to 25.³²

The new Shin-Kori 5 and 6 units are in the planning stage and construction was expected to commence in 2015. The delegation saw the cleared land where these reactors would be located.

In terms of support provided to the neighbouring communities, it was explained that Kori funds several local

programs with a total value of approximately \$780 million. The Kori site employs a total of 4,500 staff, of which 1,400 are local residents. The site has contracts with 309 local companies, representing 43 per cent of all contracts, and these were worth \$38.5 million in 2013. Kori also pays a range of local taxes.

The basic operations of the Kori reactors were explained. The reactors at Kori are Pressurised Light Water Reactors (PWR), as are most of South Korea's reactors, whereas the Fukushima plant used Boiling Water Reactors (BWR). The PWR design was said to be inherently safer than the BWR, in which the reactor itself generates steam. The core of the APR-1400 consists of 241 fuel assemblies. Each fuel assembly has 236 fuel rods in a 16 x 16 array. The fuel assemblies are replaced every 18 months.

Mr Yeo explained that the Korean Government has not yet settled on a policy for the final disposal of used fuel, which is accumulating in spent fuel pools at reactor sites. The matter has been under examination since 2009, public consultations have commenced and a Korea Radioactive Waste Agency has been established. However, there was said to be some urgency about this issue as the storage pools at reactor sites are now over 70 per cent full. A priority issue for reactor operators is therefore permanent disposal of high-level waste.

The delegation toured a spent fuel storage pool at one of the Kori reactors. The pool contained the used fuel assemblies from the reactor and had the distinctive blue/green glow of

Cherenkov radiation. The pool appeared to be video monitored by the International Atomic Energy Agency, which indicates the Plant was under safeguards. The delegation also observed a main control room in operation.

The delegation was informed that while carbon dioxide is produced during the construction phase of the reactors, none is emitted while the plants are generating power. Radiation monitoring is undertaken via 20 radiation dose real-time detectors located around the site and these indicate that the radiation dose at Kori is equivalent to natural background levels.

Asked about the design life for the Kori reactors, Kori 1 had a lifespan of 30 years which expired in 2008 but this was extended another ten years. In 2016, the plant operators may seek a further ten year extension. Kori 2 had an initial design life of 40 years. Kori 3 and 4 have an initial design life of 60 years. At the end of the design life, components such as the steam generators would require replacing.

In terms of the process for decommissioning the reactors, it was explained that while this would entail decisions for Government, the expectation is that the reactor would be allowed to sit for four to five years to allow the used fuel to cool. The reactor would then be allowed to sit for a further five to ten years before phased dismantling commenced. The Kori 1 and 2 units are linked and hence the operators would need to wait until after unit 2 ceases operation before decommissioning both.

Asked about safety measures, it was explained that all of Korea's reactors had been systematically inspected following the Fukushima accident in Japan and \$1.2 billion had been invested in safety improvements across the ROK reactor fleet. Some 56 countermeasures have been installed at the Kori reactors following Fukushima. These include: raising the coastal barrier to ten metres in height; installing hydrogen removal systems which can be started without electrical current; portable diesel generators and batteries; and securing emergency battery power from flooding.

Australian resources and relationships with Korean industry

The delegation visited **Hyundai Heavy Industries** (HHI) in Ulsan and was briefed on the fabrication of the Gorgon Project's LNG Plant by Mr Kwang-Jeh Woo, Project Manager for the Project's Barrow Island LNG Plant, and Mr Les Scott, the Chevron Site Manager.

HHI was established by celebrated South Korean businessman Mr 'Asan' Chung Ju-yung, the founder of the Hyundai Motor Company, in 1972. In what was then seen as a highly speculative move, as the Hyundai company had no shipbuilding experience or technology, HHI nevertheless succeeded and is today the world's largest shipbuilder. The company has annual sales of \$28 billion and employs 26,000 staff.

HHI is one of the 'big three' Korean shipbuilding corporations; the others being DSME (Daewoo Shipbuilding and Marine Engineering) and Samsung. The modules for the Prelude LNG

project, operated by Shell, are being constructed by Samsung.

HHI has seven divisions which, in addition to Shipbuilding, include Offshore Engineering, Construction Equipment, Industrial Plant and Engineering, and Electro Electric Systems.

The Offshore and Engineering Division manufactures a range of oil and gas industry products such as floating LNG plants, semisubmersible rigs, fixed platforms, jack-up drilling rigs, subsea pipelines, marine terminals and jetties, and provides a range of associated services.

HHI was awarded the contract to fabricate the LNG Plant for Chevron's Gorgon Project and the delegation observed the construction of the Plant's modules by the company's Offshore and Engineering Division.

As explained to the delegation, the Greater Gorgon Area is located 200km offshore of the northwest coast of Western Australia and contains in excess of 40 trillion cubic feet of recoverable gas. A 45 mile pipeline from the Gorgon field, at a depth of 700 feet, brings the gas onshore at Barrow Island. The LNG Plant, located on the Island, cleans and liquefies the gas ready for transport.

The Gorgon Project involves construction of three LNG processing trains (a liquefaction and purification facility), each of which will have capacity of 5 million tonnes per year, a domestic gas plant to supply gas to the mainland for domestic use, and a carbon dioxide injection facility.

In total, the LNG Plant involved fabrication of 51 separate modules with a total weight of 200,000 tonnes. Fabrication commenced in November 2010 and was completed at the end of 2015. The modules were shipped to Barrow Island, a journey which took 20 days from Ulsan. In total, 3,000 staff were employed fabricating the modules, with a peak of 5,900.

As at March 2016, the Gorgon Project had shipped its first LNG cargo to Japan and all train 2 and 3 modules were on Barrow Island and being erected. Gorgon was said to be the largest single-resource development in Australia's history.³³

In addition to seeing several of the Gorgon Project modules being fabricated, the delegation toured HHI's 1,600 acre shipyard and observed the largest container ship in the world, CSCL Globe, under construction. The ship is 400 metres in length, has a beam of 59 metres and will have a maximum capacity of over 19,000 containers for a gross tonnage of 190,000.

The delegation visited **POSCO Steelworks** in Pohang. POSCO was established as Pohang Iron and Steel Co in 1968, taking its current name in 2002. POSCO has played a major role in South Korea's development following the Korean War and is now one of the largest steel makers in the world, producing approximately 48 million tonnes of crude steel per year. The company employs 8,600 workers and produces 11 main products, including hot rolled steel, steel plate, wire rod, cold rolled steel, galvanised steel, stainless steel and automotive materials. Some 40 per cent of the

Steelwork's output is now exported to 60 countries.

The delegation toured the iron and steel making facilities and saw the plant's six coal silos, each of which contain 60,000 tonnes of coal, and silos for iron ore. Some 46 per cent of the Steelworks' coal and 70 per cent of its iron ore is sourced from Australia.

The delegation observed the range of processes for iron making, steel making, casting and rolling. The company's FINEX technology, which has significantly lower operating costs and produces less emissions than a blast furnace process, was described.

Busan Cooperative Fish Market

The southern port of Busan is the centre of South Korea's fisheries, which provide an increasingly important source of protein for the Korean people.

In a fascinating cultural experience, the delegation visited the Busan Cooperative Fish Market and observed catch being unloaded from vessels, sorted, auctioned and boxed ready for transport. This was followed by a pleasant meal enjoying fresh-caught fish with the Cooperative's President, Mr Ju-Hak Lee, and Mr Yeong-Jin Choi, a Member of the Busan Metropolitan Council. The Market, opened in 1963, now accounts for 30 per cent of the ROK's fish production and is the country's largest fish market.

United Nations Memorial Cemetery

The delegation concluded its program with a deeply moving visit to the serene and well-kept United Nations

Memorial Cemetery, Korea (UNMCK) located in Busan.

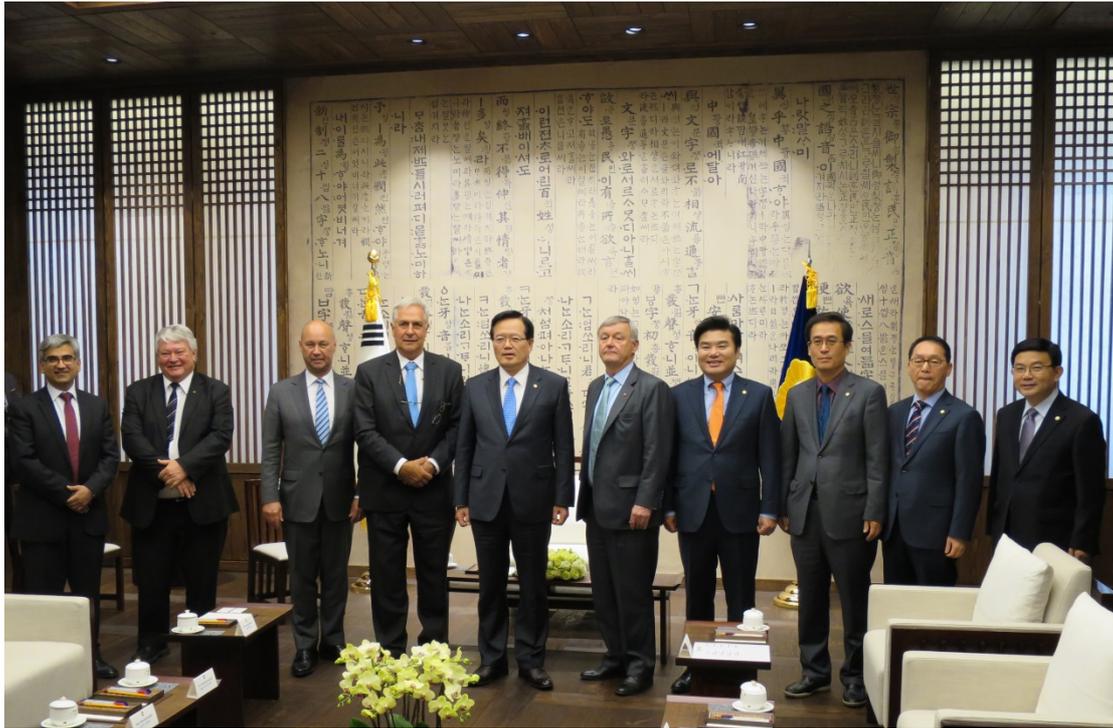
Busan itself, located on the coast of the Korean Peninsula to the southeast of Seoul, was almost overrun as North Korean forces attacked UN troops in the Battle of Pusan Perimeter, which took place in August and September 1950.

The Memorial Cemetery honours the United Nations soldiers from 16 countries who were killed in battle during the Korean War, which was fought from 1950 to 1953.

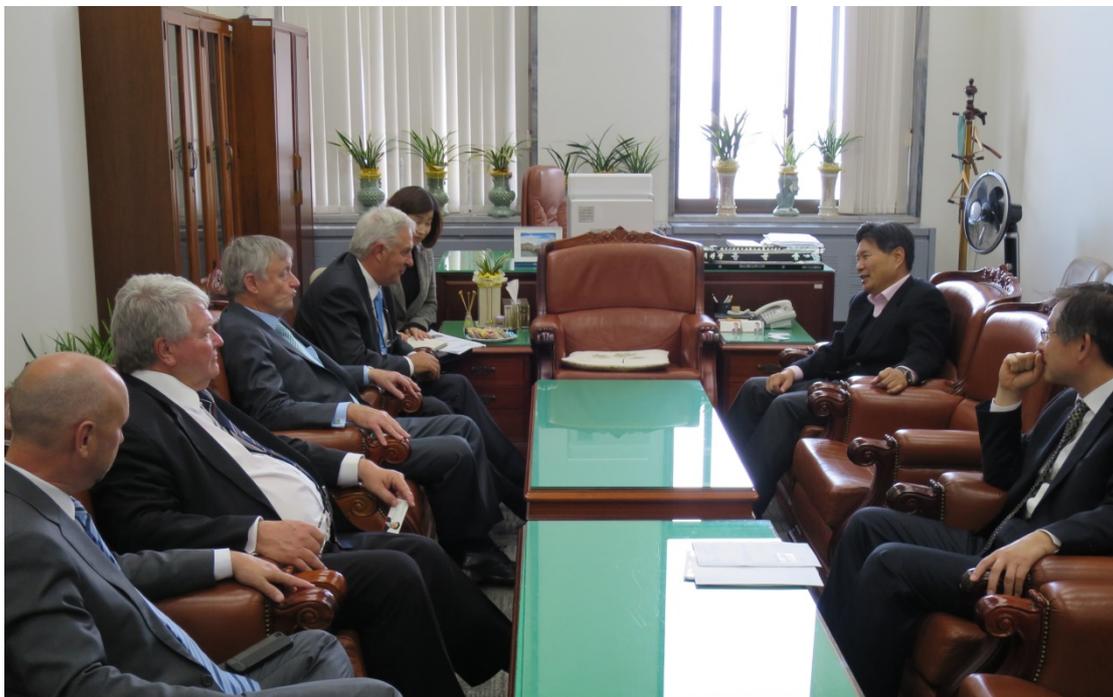
Accompanied by Mr Léo G Demay from the Office of the UNMCK and Australia's Defence Attaché, Captain Brett Dowsing RAN, delegation members paid their respects at the graves of the 281 Australian servicemen and were honoured to lay a wreath at the Australian Monument for the 340 Australians who were killed during the War.



The delegation laying a wreath at the Australian Monument in the United Nations Memorial Cemetery, Korea in Busan. The delegation is accompanied by Captain Brett Dowsing, RAN, Australia's Defence Attaché to the Republic of Korea.



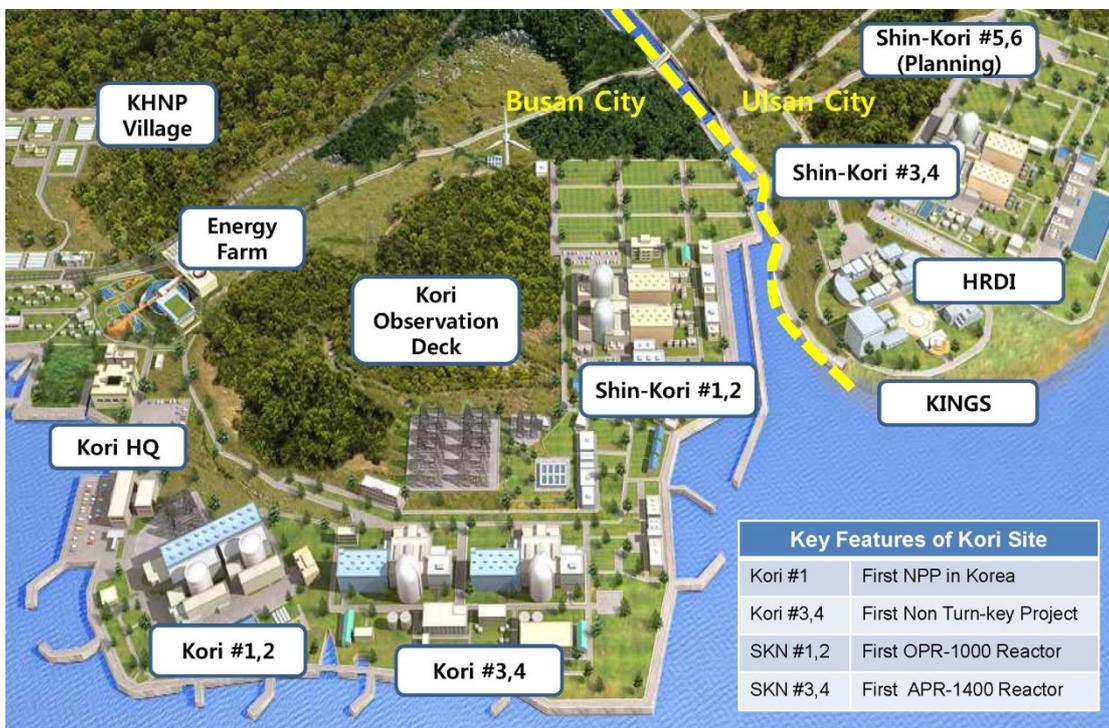
The delegation with Representative Ui Hwa Chung, Speaker of the National Assembly of the Republic of Korea (centre). Also present is Representative Yoo-Chul Won, Chairman of the Australia-Korea Parliamentary Friendship Group (fourth from right).



The delegation meeting Representative Moon-Jong Hong, Chairman of the Science, ICT, Future Planning, Broadcasting and Communications Committee of the Korean National Assembly.

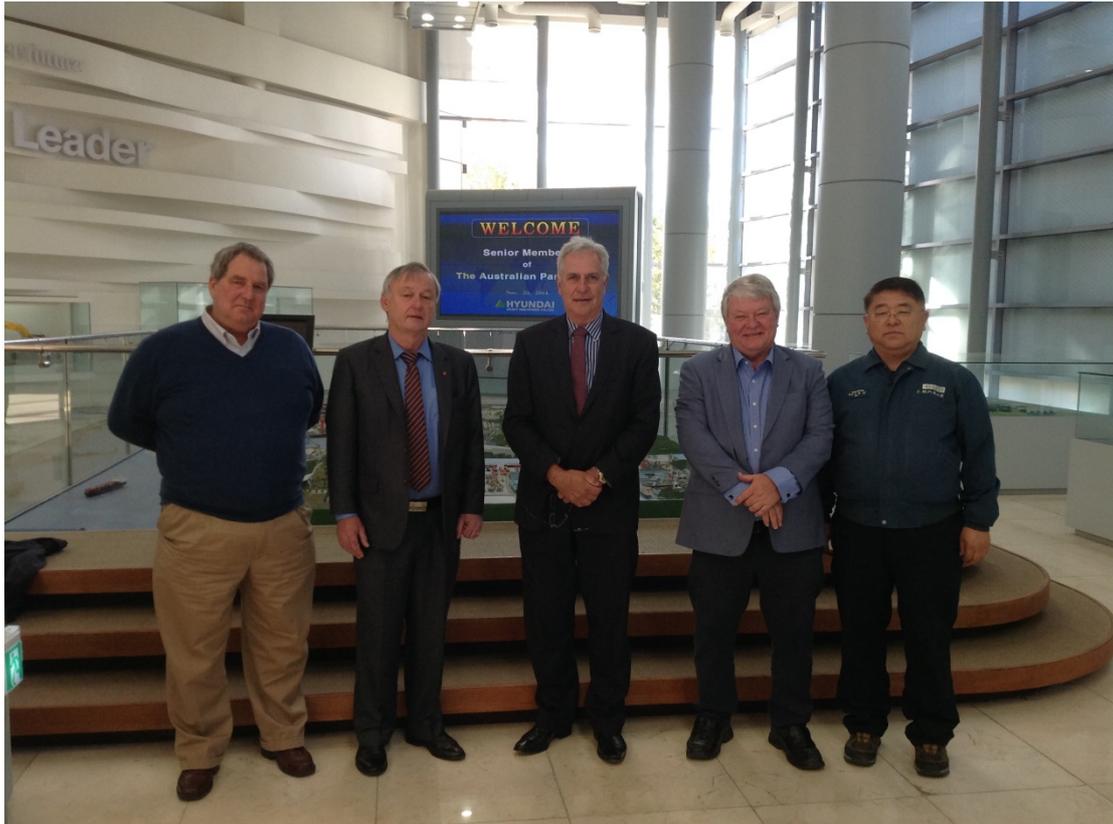


The delegation visiting the Kori Nuclear Power Site, Busan.



Overview of the Kori Nuclear Power Site, showing the location of the reactors currently operating, under construction and planned.

Source: Korea Hydro & Nuclear Power Co., Ltd.



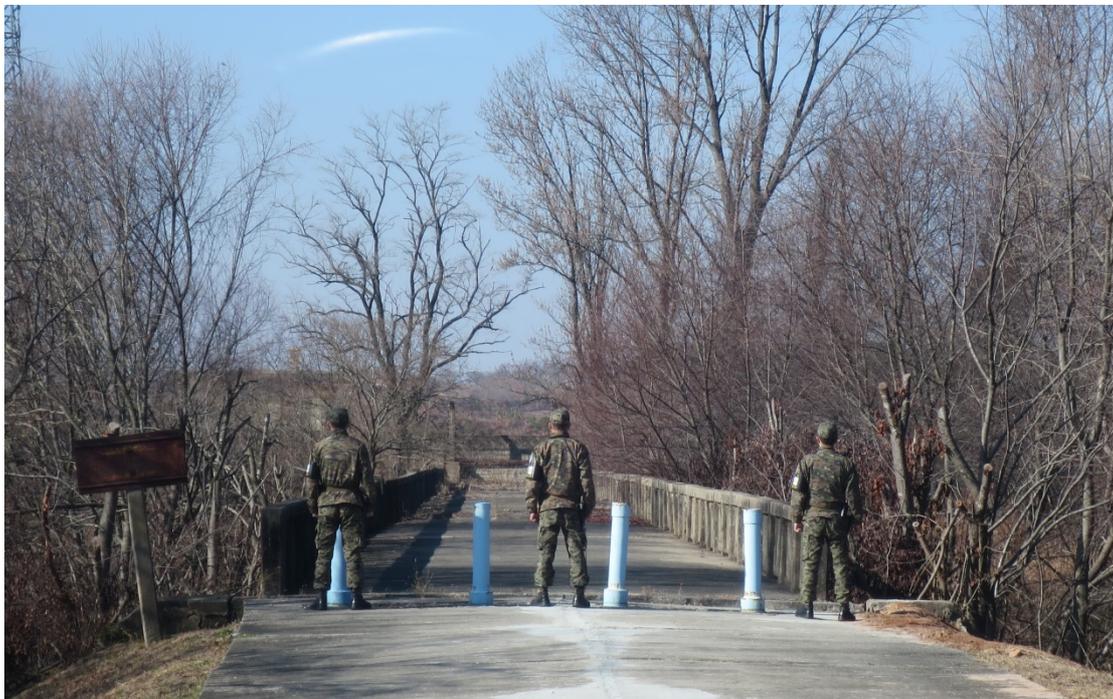
The delegation meeting Mr Kwang-Jeh Woo, Project Manager for the Gorgon Project's Barrow Island LNG Plant and Mr Les Scott, Chevron Site Manager, at Hyundai Heavy Industries Co, Ulsan.



The delegation visiting Conference Row at the Joint Security Area, Panmunjeom in the Korean Demilitarized Zone. In the background is the Panmungak building in North Korea.



The delegation, standing with a South Korean soldier, inside the United Nations Command, Military Armistice Commission conference building, Joint Security Area, Panmunjeom in the Korean Demilitarized Zone.



The 'Bridge of No Return' between South and North Korea, guarded at the Southern end by South Korean troops. Visible to the left is one of the signs marking the location of the Military Demarcation Line.

Conclusion

The delegation held fruitful discussions in Japan and the ROK, and concluded the trip with a better appreciation of the challenges being faced by these countries and their perspectives on the bilateral relationship with Australia.

The dominant impression gained by the delegation was the extent to which Australia is relied on as a trusted partner for Japan and the ROK in the secure supply of energy resources, minerals and food products. The visit gave us new insight into the long-standing and deeply complementary trade relationships between our countries.

It was encouraging for the delegation to hear from Parliamentarians we met in Japan that the relationship with Australia has never been closer. In addition to our already very strong economic and people-to-people links, it was emphasised to the delegation that Japan would like to see the security and military relationship grow in the years ahead.

The delegation visited Japan just a few years after the 2011 Great East Japan earthquake, which claimed the lives of some 18,000 people and caused immense damage and dislocation. The delegation expresses its admiration for the determination and resilience of the Japanese people in recovering from this catastrophe.

It is clear to the delegation that the Fukushima nuclear accident, caused by the 2011 earthquake, had a profound and enduring effect on the Japanese economy. The country's fleet

of 48 nuclear reactors, which had been supplying 32 per cent of the nation's electricity, were rapidly taken off line.

As a consequence, electricity prices rose by 25 per cent for households and 38 per cent for industry. Fossil fuel imports and fuel prices rose dramatically. The increased fuel costs pushed Japan into trade deficit for the first time in 31 years.

Japan's reliance on imported energy resources was over 90 per cent at the time of the delegation's visit. As Japanese officials explained, this degree of energy import dependence presents a major vulnerability for Japan. The delegation saw the clear economic imperative for Japan to restart its nuclear reactors as soon as practicable, notwithstanding the high level of public opposition which persists, and for the country to diversify its sources of energy supply.

The delegation was pleased to see first-hand Australian energy and mineral resources being used to fuel Japanese industry, notably coal, iron ore and LNG. The delegation notes Australia's strong common interest with Japan in seeing that high-efficiency low-emissions coal technologies are widely deployed.

The Japan-Australian Economic Partnership Agreement and the Korea-Australian Free Trade Agreement, which were yet to be ratified at the time of the delegation's visit, had widespread support in both countries.

The ROK also deeply impressed the delegation. The country's economic development has been remarkable.

In 1953, shortly after the Korean War, the ROK's Gross Domestic Product (GDP) stood at US\$41 million. Income per capita was US\$67. The country was among the poorest in the world. By 2014 – just 60 years later – the ROK's GDP had increased more than 31,000 fold and is now over \$1.4 trillion. Income per capita increased 400 fold and in 2014 was over \$27,000. The ROK is today the world's 13th largest economy, barely one place behind Australia in the World Bank's rankings.

Nothing better epitomises the ROK's economic development than the fact it now exports to Australia the very plant and equipment required to extract our natural resources, and that it has commenced exporting its own indigenously developed nuclear power plants – both of which the delegation observed during our visit.

As with Japan, it is heartening to know that Australia has, through its trade relationship with South Korea, contributed significantly to the country's development. Australia's coal and iron ore, together with our beef and education services have all played a part. With the KAFTA now in force, there is the potential for further growth in our two-way trade. This could see an increase in Australia's agricultural and services exports, and additional Korean investment in Australia.

Good will towards Australia is evident in both Japan and South Korea. This seems to be, at least in part, because of the experiences of many thousands of Japanese and Korean people who have travelled to Australia for education and holidays. The still well-

remembered contribution of Australian forces in the Korean War remains deeply appreciated.

The invaluable people-to-people links forged through these connections must continue to be fostered. The New Colombo Plan placements may assist with this.

The division of North and South Korea is a tragedy. The Korean War ended in 1953 but the people of South Korea continue to face worrying provocations to this day. These also harm the people of North Korea as the South reacts, quite understandably, as it has by halting operations at the collaborative Kaesong Industrial Park, thereby depriving the North Korean workers of desperately needed income.

Even from the vantage point of the Demilitarized Zone it was apparent to the delegation that there is a gulf in living standards between the two countries, as well as a vast difference in the personal freedoms that the peoples of each country enjoy. Anything Australia can reasonably contribute to achieving reunification and lasting peace on the Korean Peninsula we should.

Senator Alex Gallacher
Deputy Delegation Leader

3 May 2016

Delegation Programme

JAPAN

Monday, 10 November 2014 – Tokyo

- 07:40 Delegation programme briefing given by:
- Mr David Glass, Counsellor, Political
 - Mr Simon Clayton, First Secretary
- Venue: Imperial Hotel*
- 10:00 Ministry of Foreign Affairs briefing on Japan's foreign policy and Australia-Japan relations given by:
- Mr Masatoshi Sugiura, Director, Policy Planning Division
 - Mr Yuji Tokita, Principal Deputy Director, Oceania Division
- Venue: Ministry of Foreign Affairs*
- 11:00 Ministry of Foreign Affairs briefing on "Cool Japan" given by:
- Mr Yusuke Arai, Director, Public Diplomacy Strategy Division
 - Ms Masumi Onoue, Public Diplomacy Strategy Division, Minister's Secretariat
- Venue: Ministry of Foreign Affairs*
- 12:00 Lunch meeting with Deputy Head of Mission, Mr Tom Connor, Counsellor (Trade and Economic), Ms Jane Ogge-Cowan, and Australian business representatives:
- Mr Tim Barnstable, Head of Japan, Ingredient, Murray Goulburn
 - Mr Andrew Cox, Regional Manager-Japan Global Marketing, Meat and Livestock Australia
 - Mr Hidekata Yamada, Acting General Manager, Overseas Strategy Department, Maruha Nichiro Corporation, Austral Fisheries
 - Mr Osamu Momiyama, Director, Maruha Nichiro Corporation, Austral Fisheries
 - Mr Andrew Peyton, General Manager, Horitomi Commercial and Industrial Inc and Co-Chairman Food Agriculture Hospitality Committee
- Venue: Ambassador's Residence, Australian Embassy*
- 14:00 Ministry of Economy, Trade and Industry briefing on Australia-Japan trade and energy relationship given by Mr Shinichi Kihara, Director, International Affairs Division, Agency for Natural Resources and Energy
- Venue: Ministry of Economy, Trade and Industry*
- 15:30 Afternoon tea with Australian New Colombo Plan students, attended by:
- Ms Monica Kato, University of Adelaide
 - Ms Kate Bonnor, University of Melbourne
 - Mr Patrick Gan, University of Western Sydney
 - Ms Caroline Yun, University of New South Wales
 - Mr Jacob Shearer, University of Adelaide
 - Mr Wilson Chang, University of Technology, Sydney
 - Mr Tim Mann, University of Western Sydney
- Venue: Ambassador's Residence, Australian Embassy*

Tuesday, 11 November 2014 – Yokohama and Tokyo

- 9:30 Visit to J-Power Isogo Coal-fired Thermal Power Plant with a briefing given by Dr Hiroshi Sasatsu, Director, Isogo Thermal Power Station
Venue: Isogo Thermal Power Station, Yokohama City
- 14:00 Meeting with Japan Business Federation (Keidanren), attended by:
– Mr Katsunori Nemoto, Managing Director
– Mr Masami Hasegawa, Senior Manager, Environment Policy Bureau
Venue: Keidanren Kaikan, Tokyo
- 15:00 Meeting with Mr Masaaki Yamazaki, President of the House of Councillors, The National Diet of Japan
Venue: President's Meeting Room, National Diet Building, Tokyo
- 16:00 Japan Foundation briefing on cultural and intellectual exchange, given by:
Mr Hiroyasu Ando, President
Ms Hiroko Tsuka, Administrative Vice President
Mr Ben Suzuki, Director, Asia and Oceania Section, Arts and Culture Department
Venue: Japan Foundation Headquarters, Tokyo

Wednesday, 12 November 2014 – Tokyo

- 07:30 Briefing and breakfast with the Ambassador and Embassy staff:
– His Excellency Mr Bruce Miller, Ambassador to Japan
– Mr Tom Connor, Deputy Head of Mission
– Ms Dara Williams, Minister-Counsellor (Political)
– Ms Kate Phipps, Minister-Counsellor (Treasury)
– Mr Paul Ross, Minister-Counsellor (Agriculture)
– Ms Carolyn Barton, Minister-Counsellor (Minerals and Energy)
– Mr Simon Clayton, First Secretary
Venue: Ambassador's Residence, Australian Embassy
- 09:15 Meeting with Mr Takashi Uto, Parliamentary Vice-Minister for Foreign Affairs
Venue: Ministry of Foreign Affairs
- 10:00 Site visit to the National Museum of Emerging Science and Innovation and discussion on scientific exchange with Mr Shoichiro Katayama, Executive Director
Venue: Miraikan
- 12:30 Lunch meeting with political and foreign policy commentators, attended by:
– Mr Hiroyuki Akita, Senior and Editorial Staff Writer, Nikkei
– Dr Narushige Michishita, Director, Security and International Studies Program, National Graduate Institute for Policy Studies
Venue: The Capitol Hotel Tokyu
- 14:10 Tour of the National Diet Building
- 15:00 Meeting with Mr Bunmei Ibuki MP, Speaker of the House of Representatives, National Diet of Japan
Venue: Speaker's Meeting Room, National Diet Building

16:00 Meeting with the Japan-Australia Parliamentary League of Friendship, attended by:

- Mr Ichiro Aisawa MP, Chairman
- Mr Isamu Ueda MP, Vice Chairman
- Mr Takeaki Matsumoto MP, Vice Chairman
- Mr Taku Otsuka MP, Secretary General
- Mr Masayuki Naoshima
- Mr Takeshi Maeda
- Mr Hiroshi Nakada MP
- Mr Seiji Maehara MP

Venue: Multipurpose Hall, House of Representatives First Diet Members' Office Building

18:00 Dinner hosted by the Japan-Australia Parliamentary League of Friendship, attended by:

- Mr Ichiro Aisawa MP, Chairman
- Mr Takeaki Matsumoto MP, Deputy Chairman
- Mr Arata Takebe MP, Director
- Mr Hidemichi Sato MP
- Mr Mitsunari Hatanaka MP
- Mr Hideo Suzuki, Deputy Director-General, Ministry of Foreign Affairs

Venue: Speaker's Official Residence

Thursday, 13 November 2014 – Osaka

12:30 Lunch and briefing on Australia's business relations with the Osaka / Kansai region with Ms Catherine Taylor, Osaka Consul-General and Senior Trade Commissioner
Venue: InterContinental Hotel

13:30 Visit to Osaka Gas Co Ltd, including an inspection of the Smart Energy Network Project and meeting with:

- Mr Kazuhisa Yano, Senior Executive Officer, Member of the Board, Head of Energy Resources and International Business Unit
- Mr Shigeki Hirano, Executive Counsellor, and Chairman of Osaka Gas Australia Pty Ltd

Venue: Head Office, Osaka Gas

15:15 Inspection of Osaka Gas Central Security Control Centre
Venue: Head Office, Osaka Gas

17:00 Asia Pacific Institute of Research (APIR) briefing on economic and social issues in the Asia Pacific, hosted by Mr Yoshinobu Iwaki, Executive Director and Member of the Board. Presentations given by:

- Dr Yoshihisa Inada, Director of the Centre for Quantitative Economic Analysis
- Dr Toshihiko Hayashi, Director of Research
- Mr James Brady, Researcher

Venue: APIR, Knowledge Capital Tower C, Grand Front Osaka

Friday, 14 November 2014 – Osaka

09:30 Visit to Nippon Steel & Sumitomo Metal including inspection of rail wheels casting works and briefing by Mr Machi Nakata, Managing Executive Officer
Venue: Osaka Steel Works

14:30 Visit to Sakai LNG terminal and Sakaiko gas-fired power station, hosted by Mr Tetsu Shiota, President, Sakai LNG Corporation, and Mr Motofusa Murakami, General Manager, LNG Contracting Group, The Kansai Electric Power Co Inc
Venue: Sakai LNG Terminal and Sakaiko Power Station

Saturday, 15 November 2015 – Hiroshima

10:15 Visit to Hiroshima Peace Memorial Park and Museum, including wreath laying at the Memorial Cenotaph, accompanied by Mr Noriyuki Masuda, Deputy Director, Hiroshima Peace Memorial Museum
Venue: Hiroshima Peace Memorial Park

REPUBLIC OF KOREA

Monday, 17 November 2014 – Seoul

08:30 Breakfast meeting with economic commentators, attended by:
– Mr Tae-Hyung Ha, President and Chief Executive Officer, Hyundai Research Institute
– Professor Matthew Richards, Deakin University
Venue: Grand Hyatt Hotel

10:20 Briefing by Embassy staff:
– Mr Ravi Kewalram, Deputy Head of Mission
– Ms Tammy Hubycz, First Secretary (Economic)
– Ms Joanne Pearce, Counsellor (Agriculture)
– Mr Richard Fogarty, Counsellor (Education and Science)
– Captain Brett Dowsing, RAN, Defence Attaché
– Ms Wendy Haydon, Trade Commissioner and Counsellor (Commercial)
– Ms Stephanie Werner, Counsellor (Political)
Venue: Matilda Room, Australian Embassy

12:00 Lunch with members of the Korea-Australia Parliamentary Friendship Group, attended by:
– Representative Yoo-Chul Won, Chairman
– Representative Woong-Rae Noh
– Representative Jin-Gyu Ham
– Representative Un-Ryong Lee
– Representative Dong-ik Choi
Venue: Touch the Sky Restaurant, 63 Building

13:45 Tour of the National Assembly Plenary Chamber

14:30 Meeting with Representative Moon-Jong Hong, Chairman of the Science, ICT, Future Planning, Broadcasting and Communications Committee, National Assembly of the Republic of Korea
Venue: National Assembly Building

15:30 Meeting with Representative Eui-Hwa Chung, Speaker of the National Assembly of the Republic of Korea
Venue: National Assembly Building

19:00 Reception with prominent Korean alumni
Venue: Grand Hyatt Hotel

Tuesday, 18 November 2014 – Korean Demilitarized Zone and Seoul

09:00 Visit to the Joint Security Area in the Korean Demilitarized Zone, accompanied by Captain Brett Dowsing, RAN, Defence Attaché, including:

- Visit to the Dora Observatory
- Visit to Conference Row buildings on the Military Demarcation Line
- Briefing on the Korean Armistice Agreement and the United Nations Command Military Armistice Commission
- Briefing the role of the Neutral Nations Supervisor Commission (NNSC)
- Lunch hosted by the Swiss and Swedish Delegations to the NNSC
- Visit to the Third (incursion) Tunnel

Venue: Joint Security Area, Panmunjeom

17:00 Briefing on the role of nuclear power in the Republic of Korea, given by Mr Keun-Oh Park, Senior Deputy Director, Nuclear Power Plant Cooperation Division, Ministry of Trade, Industry and Energy
Venue: Australia Centre, Australian Embassy, Seoul

19:00 Dinner with industry representatives, attended by:

- Mr Duck Su Kim, Chief Purchasing Officer, SPC Group
- Mr Jason Shin, President, Korea Botany
- Mr Brian Lee, Regional Business Manager, Treasury Wine Estates
- Mr Jun-Wan Kim, Division Manager, Wine Business Division, Lotte Chilsung Beverage Co Ltd

Venue: Min's Club, Seoul

Wednesday, 19 November 2014 – Busan

13:00 Visit to the Kori Nuclear Power Site and briefing by Mr Seong-Jin Yeo, Senior Manager, Korea Hydro & Nuclear Power Co Ltd

Thursday, 20 November 2014 – Ulsan and Pohang

09:00 Visit to Hyundai Heavy Industries (HHI):

- Briefing on HHI Offshore and Engineering Division given by Mr Kwang-Jeh Woo, Project Manager, Gorgon Project, Barrow Island LNG Plant, and Mr Les Scott, Site Manager, Chevron
- Tour of the Ship Building Division

Venue: HHI, Ulsan

14:00 Visit to POSCO Steelworks, accompanied by Mr Mal-Yong Kim, Administration and Public Relations Group, POSCO Pohang Works
Venue: POSCO Steelworks, Pohang

Friday, 21 November 2014 – Busan

05:40 Visit to the Busan Cooperative Fish Market followed by breakfast with Mr Lee Ju-Hak, President of the Fish Market, and Mr Yeong-Jin Choi, Member of the Busan Metropolitan Council

11:00 Visit to the United Nations Memorial Cemetery and wreath laying, accompanied by Mr Léo G Demay, Director of International Affairs, Office of the United Nations Memorial Cemetery in Korea

Endnotes

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- ⁴ Ministry of Foreign Affairs, Japan, *National Security Strategy*, viewed 8 May 2016, <www.mofa.go.jp/fp/nsp/page1we_000081.html>.
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- ⁶ Prime Minister Abe, *Address to the Sixty-Ninth Session of the General Assembly of the United Nations*, 25 September 2014.
- ⁷ Teruhiko Fukushima and Yasuyuki Ishida, 'Abe's visit to Australia: Japanese coverage', *The Strategist*, 31 July 2014, Australian Strategic Policy Institute, viewed 10 April 2016, <www.aspi.org.au/in-reflection-of-pm-abes-visit-to-australia-japanese-coverage/>.
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- ¹⁴ Sonal Patel, 'Five Years after Fukushima in Five Infographics', *POWER magazine*, 11 March 2016, viewed 7 April 2016, <www.powermag.com/five-years-after-fukushima-in-five-infographics/?pagenum=1>.
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- ¹⁸ World Nuclear Association, 'Court denies injunction against operation of Sendai units', *World Nuclear News*, 6 April 2016, viewed 12 April 2016, <www.world-nuclear-news.org/RS-Court-denies-injunction-against-operation-of-Sendai-units-0604165.html>.
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³¹ World Nuclear Association, *Nuclear Power in South Korea*, *loc. cit.* See also: World Nuclear Association, 'South Korea wind revisions to nuclear treaty with USA', *World Nuclear News*, 22 April 2015, viewed 26 April 2016, <www.world-nuclear-news.org/NP-South-Korea-wins-revisions-to-nuclear-treaty-with-USA-2241501.html>.

³² World Nuclear Association, 'First criticality for Shin Kori 3', *World Nuclear News*, 5 January 2016, viewed 26 April 2016, <www.world-nuclear-news.org/NN-First-criticality-for-Shin-Kori-3-0501164.html>.

³³ Chevron Australia, *Gorgon Project*, viewed 27 April 2016, <www.chevronaustralia.com/our-businesses/gorgon>.
