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THE ROAD TO PARIS – POST-2020 CLIMATE CHANGE GOALS

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If it were to be a book, the 20 years post-Kyoto climate change story would be one of the best thrillers ever written. It would have all the ingredients – global catastrophe, good versus evil, heroes and villains, civil rights and disturbance, billions of dollars of the community's money wasted – but sadly, not the progress that the global community had hoped for.

Few people would have been aware in 1997 that the commitments made by Australia and many other countries which subsequently became known as the Kyoto Protocol, would drive 20 years of questionable activity.

Australia has had over 200 pieces of legislation and policy responses to the commitments made in 1997. Carbon prices were brought in and removed, the Renewable Energy Target scheme was introduced, increased, divided and reduced and there was state legislation for feed-in tariffs and energy efficiency schemes, just to name a few.

The amazing thing is, we are about to do it all again. At the end of the year, the world's leaders will gather in Paris and put on the table another round of commitments that will shape the climate change policy landscape post-2020. And so to the extent that Kyoto defined the period through to the end of this decade, the commitments made in Paris will drive activity through to 2030 and beyond.

The energy sector is arguably the most important industry in the world. With due reference to our host today, the Australia Israel Chamber of Commerce, the first controlled use of fire is believed to be in Gesher Benot Ya'aqov, now part of Israel, 700 to 800 thousand years ago.[1]

[1] Science, 30 April 2004

The use of energy is inextricably linked to human development. The capability to cook food, in effect, gave rise to the human species as we know it today as anthropologists believe that the ability to digest food efficiently to release energy for brain development and idle time to learn is behind human development as we know it today.

The world today has approximately 7.3 billion people and will grow to an estimated 11 billion in 2100. And much of that world is living in conditions that are not acceptable. About 1.3 billion people do not have access to electricity at all and 2.5 billion people do not have clean cooking facilities.[2] The majority of these people live in sub-Saharan Africa and parts of Asia including India, which is developing at a rapid rate, but still has some 300 million people who don't have access to electricity at all.

As the world's population grows, there will inevitably be an increase in the amount of energy used, particularly in India and Africa. The International Energy Agency estimates that the world's use of electricity will double between now and 2050 and require an investment of around $2 trillion a year[3], every year, to meet that growth. We need to look no further than China, where half a billion people have been lifted out of poverty over the past 20 years as a direct result of investment in energy and other infrastructure.

Hopefully I can outline some key principles that reflect the lessons that history has taught us and that should guide our response as we approach a new commitment to be delivered in Paris this year.

Balancing the economic benefits and environmental impacts of energy use

I can imagine our ancestors living in a cave many thousands of years ago, warming themselves by the fire on a cold winter's night, enjoying the light and cooked food, but also complaining about the smoke making their eyes water and the soot making a mess of the paintings on the wall.

We have lived with this trade-off between the benefits of energy and its environmental impact throughout human history. Our first major fuel resource was biomass and the deforestation as trees were chopped down was extraordinary. Industrialisation and increased demand for charcoal for smelting accelerated these developments.

I recall on my first trip to London in the early eighties that everything was black – Westminster Abbey was black, the Houses of Parliament were black, the Victoria and Albert Museum was black. The

[2] International Energy Agency (IEA), 2014.

[3] ibid.

soot from coal burning in houses in the UK had a terrible impact on the environment and on people's health. It never struck me as being anything unusual until I returned later and everything was cleaned up – facilitated by the introduction of a cleaner form of energy in natural gas in the late seventies.

We have lived with the environmental consequences of our energy use all through human history and therefore must find a more balanced way of having a conversation about energy choices and consequences.

Air quality is central to this conversation as it is one of the most visible environmental markers in terms of our use of energy.

Air pollution is measured by PM2.5 or particulate matter smaller than 2.5 microns (about a thirtieth the width of a human hair), particles small enough to enter the respiratory systems and affect human health, particularly in urban environments.

Los Angeles was known as the world centre for air pollution in the seventies and, at that time, people wondered how it would ever be solved. The solution in the end was quite simple with the introduction of catalytic converters in cars and now Los Angeles, for that and other reasons, enjoys a much better environment.

The World Health Organisation says that acceptable levels of PM2.5 is 25 micrograms per cubic metre. Of the 20 most polluted cities in the world, 13 are in India and three are in Pakistan, where cities average more than 100, and on some days more than 700 micrograms per cubic metre[4].

The impact of energy use on air quality is extraordinary. It is estimated that in the developing world, 4.3 million people die each year from indoor air pollution from burning dung, firewood and coal and a further 2.6 million people die from outdoor air pollution.[5] So there is a longstanding and strong link between our use of energy and its impact on the environment.

Measuring and benchmarking emissions

Over the past 20 years, the issue has gone beyond air quality to climate change and the global community has become very aware of the impact that our use of energy, particularly fossil fuels, has on carbon emissions. Just to give you some benchmarks, the US is around about 10.9 tonnes of

[4] World Health Organisation (WHO), Ambient (outdoor) air pollution in cities database 2014.

[5] WHO, March 2014.

carbon per capita, China is around seven, India 2.1 and Africa 0.9.[6] This shows that as countries grow and develop and people are lifted out of poverty, energy use and carbon emissions grow dramatically.

The challenge is clear. We need to find a way of increasing our energy use to lift living standards but at the same time address our environmental objectives and reduce carbon emissions. Throughout human history, people have placed economic development equal to, if not above, environmental outcomes and we must find a way of meeting both objectives.

Measurement can be misleading. The commitment that Australia made in 1997 ultimately became a goal to reduce carbon emissions in Australia by five per cent over 2000 levels by 2020. Many criticise Australia for not setting a more ambitious target. Like many other countries, we could have stated our goal as a reduction on 2005 levels, in which case it would have been a 12 per cent reduction. Or we could have characterised it as being a reduction on the business-as-usual projection which would have been a 20 per cent reduction, about the same as any other country made.

We are constantly told Australia is the world's worst polluter based on the measure of carbon emissions per capita, which is higher in Australia than virtually anywhere else in the world.

This completely ignores the characteristics of the Australian economy. Australian is just 0.3 per cent of the world's population, and 1.1 per cent of the world's emissions, but is 1.9 per cent of global GDP. Australia will top the world's worst emitters list on a per capita basis as we punch well above our weight in terms of wealth and growth and we are a resource and energy export based economy.

Origin commissioned Deloitte Access Economics to look at the G20's performance in respect of emissions per unit of GDP and Australia comes out better than most countries in terms of the efficiency with which it converts carbon to GDP. The countries that are better than Australia have large amounts of low carbon electricity generation such as nuclear in France and hydro power in Brazil and Canada.

The winning trifecta through the lens of balancing economic and environmental objectives is to grow the economy, improve carbon efficiency and also – importantly -reduce absolute carbon emissions. The only G20 countries that achieved this in 2012[7] were the United States, which did not ratify Kyoto, Canada, which withdrew from it, and Australia, which was late to the party.

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[6] IEA, World Energy Outlook Special Report, June 2015

[7] Deloitte Access Economics, 2014.

Delotte has updated its analysis and Australia is the only G20 country to have achieved the trifecta in both 2012 and 2013[8]. Arguably, Australia is the gold-medal performer in achieving economic growth at the same time as reducing emissions and improving carbon efficiency, but this is not the impression you would get from the general debate.

As we approach Paris, we should be wary that some countries will put heroic emissions cuts on the table and Australia will be under pressure to, for example, "do what the Europeans are doing" but headlines don't always tell the full story. Deloitte undertook analysis of consumption-based emissions to supplement the more widely used production-based emissions. It found that although the UK reduced its carbon emissions over the 20-year period from 1992 to 2012 by around 20 per cent as measured by production emissions, its consumption emissions actually grew by around 10 per cent over the same period.[9] What has really happened over the past 20 years is that the UK economy has changed and its carbon emissions are occurring in other countries and are captured in traded goods or imports. The burden is being transferred from service economies to economies which export energy and resources and those that specialise in energy-intensive manufacturing.

The world of climate change and climate change commitments is full of misrepresentation in terms of what each country is targeting and achieving, so Australia should be very careful in terms of how it frames and expresses its target, because over the last couple of decades we have performed as well or better than our peers in improving our carbon efficiency.

Climate change is a global, not local, issue

Recent history is rich with examples of governments attempting to solve global problems locally in response to political or domestic pressure, often with quite unintended consequences.

In 2013, renewable subsidies in Europe were around €53 billion, about half a per cent of European GDP, that year alone and you would expect to see major reductions in emissions for that investment. Germany was at the forefront with €19 billion in subsidies, yet carbon emissions went up, not down, as Germany increased coal capacity at the expense of gas and nuclear.

Looking at a map of Europe, the sun shines more in Spain than it does in Germany and the wind blows more in the north than it does in the south. But where is all the wind and solar installed? The wind is in the south and solar is in the north. In fact, a Bain & Co paper for the World Economic Forum published early this year estimated US$100 billion had been wasted investing in the wrong

[8] Deloitte Access Economics, 2015 (to be published).

[9] ibid.

renewables in the wrong locations. And by looking across borders and utilising existing transmission, the EU could have saved a further US$40 billion.[10]

In Australia, many of the regulations and programs put in place to increase the use of solar energy have come at an enormous cost. The Grattan Institute found the subsidies for solar in Australia amount to about $14 billion. These include direct subsidies from the Small Scale Renewable Energy Scheme (SRES) and state feed-in tariffs and a third subsidy that comes from not paying the full network cost. Subsidies have pushed the cost of carbon emissions to about $175 a tonne.[11] Solar has a great future that doesn't need poorly conceived subsidies.

Finally, Australia will very soon and very proudly be one of the world's largest exporters of Liquefied Natural Gas (LNG). This gas will play a major role in helping countries achieve a lower carbon future by substituting a less intensive source of fuel in place of more intensive sources. Australia's emissions will go up as we export more gas, but global emissions will decline – each tonne of increased carbon emissions in Australia from LNG production will reduce global emissions by 4.3 tonnes, when the gas is used in place of coal in electricity generation.[12]

We are solving a global, not local, problem. Notwithstanding the best of intentions behind them, we should avoid domestic policy that distorts markets or creates aberrant outcomes.

Investing in technology and being fuel agnostic

Climate change is not an ideological problem – it is a practical problem as to how do we reduce carbon intensity. The solution will be found through investing in technology and substituting less carbon intensive fuels in place of more carbon intensive fuels.

We cannot pre-determine the fuels we can use. There is a part of the community that believes that the only fuels that should be used are wind and solar but they cannot solve this problem alone. The world has very large resources of undeveloped hydro which should not be ruled out. We also cannot rule out the development of uranium resources for nuclear power, which plays an important role in many countries.

The US and Europe have had very different approaches to addressing climate change. Europe is resource-scarce, densely populated and with a history of conflict, and therefore governments are

[10] Bain & Company, The Future of Electricity, January 2015.

[11] Grattan Institute, May 2015.

[12] Worley Parsons, April 2011.

much more inclined to solve problems through intervention and regulation. On the other hand, the US is a land of abundant resources and open space and culturally believes all problems can be solved through innovation and access to markets.

At the International Gas Union conference in Paris in May, some of the large European oil companies – BG Group, BP, Eni, Royal Dutch Shell, Statoil and Total – advocated to set a carbon price[13]. The response of US companies was to ask "why in heaven's name would you do that, when all you do is add cost to the economy at the detriment of jobs and growth?"

Let markets work and be patient

An amazing success story in the US over the past decade has been the shale oil and gas revolution. It was not caused by government. It was not promoted by government. It was not facilitated by government. It was industry responding to an opportunity, which was high energy prices and finding a way to extract fuel from shale. Shale oil and gas have had a significant impact on global energy markets, on the oil price and on geopolitics, through huge amounts of new oil and gas becoming available cheaply.

By then substituting gas for coal in its power stations, the US has achieved a 550 million tonne per year reduction in carbon emissions, equivalent to Australia's total annual emissions.[14] The US has had the biggest and most effective response to climate change - not because it signed Kyoto and not because it set itself targets.

The US is evidence that if you let markets work, extraordinary outcomes can be achieved, potentially greater than government targets may have mandated or could have anticipated.

It's also important to be patient and let technology drive benefits. We commissioned RepuTex to produce an abatement cost curve showing the opportunities available in Australia to reduce emissions. Looking at the period through to 2030, there is around 100 million tonnes of abatement available in Australia at a negative or relatively low cost.[15] This abatement will be realised over time as appliances and equipment are naturally replaced and does not require subsidies.

The road to Paris

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[13] United Nations Framework Convention on Climate Change 2015, Six Oil Majors Say: We Will Act Faster with Stronger Carbon Pricing: Open Letter to UN and Governments, viewed 24 June 2015, http://newsroom.unfccc.int/unfccc-newsroom/major-oil-companies-letter-to-un/.

[14] IEA, World Energy Outlook Special Report, June 2015.

[15] RepuTex, January 2015

Where does this leave us in respect of the commitments we make in Paris?

Australia is an open export-oriented economy blessed with abundant resources and fuels and the target that is put forward in Paris should reflect that. This target will drive the next 20 years of energy activity in Australia and my sincere hope is that the next 20 years doesn't look like the last 20 years because within the energy industry it has been crazy.

The US pledge for 2025 is to reduce carbon emissions by 26 to 28 per cent from 2005 levels. Applying the efficiency improvement embodied in the US pledge to Australia implies an absolute target for Australia in the range of 15 to 20 per cent by 2025 or 20 to 25 per cent by 2030 - both referencing 2005 as the base year.

Climate change is a practical problem that can be solved with a practical approach. We must find a way forward that balances genuine desire for both economic growth and improved environmental outcomes, something that humanity has grappled with for hundreds of thousands of years. I do not believe Paris will result in commitments that, of themselves, limit global warming to 2 degrees, but I sincerely hope the outcome will be to build confidence in an international process that will lead to more ambitious action over time.

This is an edited extract from Grant King's 24 June speech to the Australia Israel Chamber of Commerce in Sydney