

GREENHOUSE GAS EMISSIONS - REDUCTION

Motion

Resumed from 27 September on the following motion moved by Hon Paul Llewellyn -

That this house calls on the state government to -

- (1) Develop binding targets for emissions reduction to set us on the path of achieving the cuts required to avoid dangerous threats to the climate.
- (2) Support these targets with funding and policy measures.
- (3) Maximise the economic opportunities available through innovation and large-scale investment programs aimed at greenhouse gas reduction.

HON PAUL LLEWELLYN (South West) [2.05 pm]: When the debate on this motion was interrupted I was quoting from a document by AMP Capital Investors, which has serious concerns that the possible result of emissions trading globally and putting a dollar value on carbon emissions will be stranded coal-fired power stations. Before I deal with that, it is worth noting that nobody in Australia can ignore the fact that climate change appears to be with us. Every night on television we can see evidence of climate change - Australia in the grip of a national drought, farmers having to be bailed out financially and some farmers even contemplating walking off their land - as the rainfall bands shift across the landscape. If this were not the result of the impact of climate change, surely it is a warning that we need to take climate change and its impact on the global ecosystems seriously.

The AMP Capital Investors document sounds a warning sign to people across Australia about the cost of ignoring these signs. The AMP report entitled "Implication on Power Sector Investments of Climate Change Policy" states-

By 2050, deep cuts in greenhouse gas emissions from developed countries will be required if atmospheric greenhouse gas concentrations are to stabilise at levels which will do not lead to significant negative environmental, social and economic impacts.

This paper considers the implications of deep cuts -

That is, cuts to greenhouse emissions -

to power sector investment and concludes:

- The **Australian power generation sector will need to change significantly** if Australia is to achieve even modest emission reductions from the "business as usual" scenario, for example, to maintain current 2004 emission levels. Depending on the nature and timing of government climate change policy, these changes will bring some significant negative and positive risks to investors.
- The long lifespan of power generation infrastructure results in significant inertia to change and **changes to the sector will have to start immediately to avoid stranded assets or significant step change impacts on the sector and the economy.** There will be increasing pressure to shut-down older and higher emission intensity power sectors.

The Muja power station in the state's south west is one of the worst greenhouse gas polluters in the Southern Hemisphere. In fact, it has operated with little or no emissions control for several decades. The AMP document continues -

- Demand side management, energy efficiency and renewable strategies will benefit from a **multifaceted holistic government policy approach to minimise the risk to investors and the economy in general.**
- **Average emission intensity of new power stations will need to be less than 300 T CO2/GW-hr,** if even modest reductions are to be achieved.

The report is saying that we need to invest in low-emission technologies if we are to deal with the possible impact of not only climate change but also the rearrangement of international markets and global carbon trading. The report continues -

- **Investment in coal-fired power generation and those companies with domestic thermal coal market focus will be subject to significant downside risk.** To even maintain 2004 greenhouse gas emissions, ie no deep cuts, it will be almost impossible for conventional coal-fired power stations to provide any significant additional contribution to total generation.

If we wanted to tackle greenhouse gas emissions, we would not expand the coal industry beyond its current production level. The report continues -

In addition, there is likely to be significant pressure on existing coal-fired generation capacity or not to extend plant life beyond the nominal economic life of 30 years.

We have been trying to prop up the coal-fired power stations in Collie by extending contracts and giving them special arrangements. That happened only a few weeks ago, when the Premier extended the special arrangements and almost mandated that the industry use coal. However, the AMP report is saying that, far from doing that, we should be winding back our involvement in the emission-intensive coal industry and looking to low-emission technology, which includes gas-fired power stations, cogeneration from the existing gas assets that are being wasted at Alcoa - I will give an example of that in a moment - and investing in renewable energy technologies. The AMP report continues -

- **Natural gas transmission infrastructure and generation would appear to have significant upside** if Australia is to meet emission reductions in the short to medium term.

Basically, it is saying that this is not all downside; there are some upsides for low-emission technologies, and natural gas is one of the technologies we see as a bridge to a more sustainable future, in which energy systems will be based on the lowest emission technologies on the market, cogeneration using waste heat and getting the maximum capacity out of burning natural gas, investment in renewable energy technologies and, most of all, investment in energy efficiency technologies right across the economy. If the energy intensity of the economy can be reduced by, say, 20 per cent, greenhouse gas liabilities will have been reduced by 20 per cent. In fact, if coal is decommissioned and no longer pursued, then a reduction in energy intensity of 20 per cent is actually equal to a reduction of more than 20 per cent in greenhouse gas emissions, because the coal technology is dirtier. The AMP report continues, on page 12 -

Long-term targets with respect to improvements in energy efficiency, renewable energy and greenhouse gas emissions and strong policy mechanisms (ie emissions trading) are needed to facilitate the appropriate private sector investment if significant cuts in greenhouse gas emissions are to be achieved in Australia. Given the required near term investment in the sector, there is a significant level of regulatory risks for investments in long-life assets, if these policies are not developed as a matter of urgency.

That is a pretty clear directive or warning sign from one of our pre-eminent capital investors in Australia and globally, and we should be taking serious heed of the message it is sending.

However, the message about the impact of climate change is not coming from only the investment sector. It is also coming from the insurance sector. I refer to a document titled “The Impact of Climate Change on Insurance Against Catastrophes”, produced by the Insurance Australia Group. I will have to précis the content of this document, but the introduction reads -

Weather and climate are “core business” for the insurance industry. At its most basic, insurers underwrite weather-related catastrophes by calculating, pricing and spreading the risk and then meeting claims when they arise. A changing, less predictable climate has the potential to reduce our capacity to calculate, price and spread this weather-related risk.

Insurance Australia Group (IAG) believes that human-induced climate change is now a reality and that it must be addressed with appropriate urgency. We base this assessment on a combination of the science of climate change presented by the Intergovernmental Panel on Climate Change (IPCC) and associated modelling, work done by the re-insurance sector (Swiss re and Munich Re), and on our own modelling, research and claims experience.

Without going into detail, the Insurance Australia Group has done calculations on the overall cost of weather-related impacts and summarised them. These events include, for example, the weather-related impact of a hailstorm. It has become clear that two things are happening with climate change and the change in the surface temperature of the oceans. Only a very small change is needed in the surface temperature of the oceans to produce a very large-scale impact. For example, it increases the intensity of cyclones and hailstorms. One hail-related event in Sydney in 1999 resulted in an insurance bill of something like \$1.4 billion. The document provides information of the average annual cost of weather-related home and motor insurance claims, showing the trend across time as well as the differences between Australian states. Very large-scale flood events happened in New South Wales and Queensland, and very severe storm events resulted in claims of \$195 million in New South Wales. In Western Australia, which has a much smaller insurance base, there were flood events costing \$2.6 million, severe storms costing \$11 million, cyclones costing \$41 million, earthquakes costing \$3 million, and bushfires costing \$4.5 million. We have not had any claims for landslides. It is worth noting

that our cyclones, as weather-related events, cost much more than earthquakes and other events, so these are very large insurance liabilities.

I will give some sense of how small changes in weather can produce very large changes in the amount of damage. Members will know that a very small increase in the speed of a motor vehicle, say from 110 kilometres an hour to 120 kilometres an hour - an increase in speed of 20 per cent - produces a much bigger increment in fuel consumption, because the resistance increases greatly. The same logic applies to wind speeds that result from cyclones and weather events. A 25 per cent increase in peak gusts, for example, can cause a 650 per cent increase in building damage. Members should think about that. I will repeat that: a 25 per cent increase in peak gusts can produce a 650 per cent increase in building damage. That is why the Insurance Council of Australia Ltd is most concerned that there will be more erratic weather events, and we will need to address climate change sooner rather than later. For example, it can see the cyclone belt moving further south. All the buildings that are located just south of the current cyclone belt simply have not been built to the standards required to withstand cyclones. However, if that cyclone belt moves very slightly to the south - it does not have to be far; it need be only 500 or 1 000 kilometres - it will put at risk billions of dollars of assets, and the liability of insurance companies will be increased by billions of dollars by a single cyclonic event that has gone a bit astray.

I believe the point is clearly made that we need to pay attention to these issues that might arise as a result of very small changes in climate and to put together a coherent state, national and international response to climate change. The point that I was making when I opened the debate on this motion was that we have tended to frame the argument about climate change and greenhouse gas emission reductions very much in terms of how much it will cost us to reduce our emissions. Measured against the potential impact of costs, it appears that the cost of adaptation and change will be far less than the cost of suffering increased risk. The other factor is that a shift from high-emissions technologies - primarily, we are talking about coal-fired power stations - to, firstly, energy efficiency, which is the reduction of the energy intensity of the economy, is not a cost but a saving. Reducing emissions is not a cost; it is in fact a saving. It is a saving on energy consumption bills and it is a saving for the overall productivity of the economy because there are fewer inputs. When people reduce their emissions through energy-efficient technologies, they are reducing their energy inputs into the productive part of the economy.

Similarly, introducing technologies that result in a shift from high-emissions technology - that is, the coal-fired power stations and, indeed, the open-cycle gas power stations - to the combined-cycle gas power stations, which use the waste exhaust heat to re-combust or regenerate more power so that the efficiency of the power generation is increased, should be seen as a cost saving, not a liability. Investing in renewable energy technologies that reduce a person's greenhouse gas liability is a new form of business in the economy. People do not lose their opportunities in the energy industry; in fact, the energy industry becomes smarter. At the moment, those renewable energy technologies are slightly more expensive - I say "slightly more expensive" - than running lean, mean, dirty coal-fired power stations, when the cost of emissions is not counted. That is simply a product of the fact that we have not seriously embraced technological change on a scale that will deliver lower-cost energy alongside lower emissions. It will be only a matter of time before that is done. Europe has done it; other countries are doing it at a rate of knots. I will save my comments on that for another speech when we are dealing with the renewable energy targets in other countries. There is massive investment in the renewable energy sector, whereby the cost of wind power is now coming down so that it is close to the cost of, for example, gas-fired electricity. It will be only a matter of time before wind technologies, wave technologies and geothermal technologies generate power at the same cost as, or less than, our current power generation assets. The other thing is that energy efficiency - that is, energy savings - sometimes has payback periods of two to three years to achieve savings.

I have in front of me a very recent report. It was published in Sydney in August 2006 by the World Wildlife Fund Australia. The World Wildlife Fund has been taking a major role in trying to achieve a low-carbon future, primarily because one of the assets that is lost as a result of climate change is habitat. We are not losing habitat just as a result of clearing land and physical land destruction; we are losing whole ecosystems as a result of climate change. Therefore, the World Wildlife Fund has taken a very close interest in this issue. It has a proposal. Its discussion paper is titled "A prosperous low carbon future: WWF's proposal to reduce Australian greenhouse gas emissions by a third by 2030". It is saying that in a prosperous, low-carbon future, we can achieve a low emissions economy at the same time as rebuilding or recreating an entirely new economy based on low emissions technologies. The first thing that the WWF refers to in this discussion paper is the harnessing of energy efficiency opportunities. The paper states -

... over the next 25 years virtually all appliances, vehicles and buildings will be replaced, -

That is a fact of life because that is the natural life cycle of our built capital assets -

built, re-built or subject to major refurbishment - providing the perfect opportunity for replacement of old, redundant and inefficient technology with cost effective and efficient alternatives with lower running costs.

That will lower not only the emissions, but also the running costs. The paper continues -

Key elements include:

- Accelerating and enhancing the work of the National Appliance and Equipment Energy Efficiency Committee in overseeing minimum standards that:
 - prevent the sale of inefficient technologies;
 - promote early adoption of new and rapidly emerging low emission technologies; and
 - raise community awareness of the benefits of energy efficiency.
- Setting minimum appliance and equipment efficiency standards, and other efficiency requirements, for new and existing facilities to include:
 - all measures where the economic benefit exceeds costs

That is a simple proposition. If it is economically viable to put insulation into the roofs of houses and to retrofit houses so that they become more energy efficient - that is, if it is cheaper to put insulation into ceilings than it is to run airconditioners - it makes sense to do that rather than invest in more generation capacity and invest in airconditioners. An explicit valuation of greenhouse gas emissions is required. The discussion paper further proposes -

- continual reviews to ensure all technological developments are incorporated as soon as possible.
- Developing programs to influence consumption patterns and consumer choice to favour low emission goods . . .

In the next few days, members of this house will deal with the Water Efficiency Labelling and Standards Bill 2006. That bill deals with water efficiency standards. A water-efficient shower head is cost-efficient because of the saving of the energy content of the water, and not because of the saving of water. I will say that again: a certain amount of water is saved through the use of a water-efficient shower head, and a value is placed on the water saved. However, the cost-efficiency of that shower head has more to do with the energy saving of the water content that is no longer used, than with the water saved. That is valuing water at the current rate.

The executive summary of the World Wildlife Fund discussion paper continues with the second point, "Encouraging low emission generation infrastructure". It is now talking not about the efficiency opportunities, but about the generation infrastructure. The paper states -

Currently the lowest cost electricity - traditional coal fired power - is also the most emission intensive.

However, if anticipated trends are realised for a number of rapidly emerging technologies (including solar thermal, geothermal, advanced coal technologies and carbon capture and storage), there are likely to be a number of cost competitive low emission technologies available within the next decade.

In order to ensure the development, deployment and use of these technologies, this action plan relies on:

- Establishing a carbon price signal through an emissions trading scheme or carbon tax - until the external cost of greenhouse gas emissions is internalised into the cost of electricity generation, cheap high emission fossil fuel technology will continue to dominate electricity generation.
- Setting minimum emissions intensity standards for new electricity generators at the level of best practice combined cycle gas turbine performance, which will exclude new investment in traditional coal power, unless it is accompanied by carbon capture and storage.

Carbon capturing and storage is something of a pipedream. It is the technology by which all the emissions would be taken out of a coal-fired power station, pumped under the ground and stored forever in underground structures. At the moment, that technology is effectively a pipedream and does not seem to be deliverable in 10, 15 or 20 years. However, the current federal government is putting its money on this technology to meet some obligation in reducing our greenhouse gas emissions.

The final point that the World Wildlife Fund suggests is -

- Encouraging technology development to drive innovation and cost reductions over time.

A carbon price signal could be introduced in the form of a carbon tax, an emission trading scheme or a combination of the two.

Under a trading scheme, the traded price would depend on the cap set under the scheme and the available abatement.

I will introduce members to the concept of a carbon emissions trading scheme. Most people think that a cost is applied to every carbon molecule that is emitted from the stack of a coal-fired power station; however, it does not work like that at all. The model that has been contemplated is called a cap-and-trade model. In other words, every generation asset or industry, including the coal-fired power station, is given a reasonable limit to produce whatever it produces. If it produces alumina, electricity, silicon, or whatever, it is given a reasonable limit. That is using world's best practice technologies. Therefore, a coal-fired power station that produces 100 units of electricity should be producing 80 units of carbon. If it exceeds that limit, it must pay tax on the emissions above its cap. That is the cap-and-trade model. Basically, people who enter the market and produce 100 units of electricity, but produce only 60 units of carbon emissions, can trade with 20 units of carbon. They can sell those and make a profit. Similarly, a renewable energy generator may produce all 100 units of electricity with no carbon emissions. That can be offset against the carbon liability of another entity; for example, a coal-fired power station. In simple terms, Griffin Coal, for example, has currently invested in the Emu Downs Wind Farm. It did that not for fun, but because renewable energy technologies pay for themselves under the current mandated renewable energy target arrangements, and it actually provides the company with a tidy profit. It also buffers the company against any liabilities that it might have with carbon emissions trading, should that come along. If Griffin Coal can do it, we must ask why the Western Australian government - and the federal government for that matter - is not vigorously pursuing these new technologies and these new market arrangements that will facilitate renewable energy uptake and reduce the emissions intensity of the economy.

On page 6 of the World Wildlife Fund discussion paper, under the heading "Economic costs of emission reductions", it states -

The economic cost of the 30% reduction in emissions as outlined in this action plan is affordable.

Economic modelling of the impacts of deep cuts in emissions overwhelmingly indicates continuing strong economic growth.

If members are concerned that putting a tax on emissions will impede economic growth, they need to think again. The paper continues -

For example, the recent study by the Australian Business Roundtable on Climate Change (BP, IAG, Origin, Swiss Re, Visy, Westpac and ACF) found that GDP increased by 167% from 2005 to 2050 with policy action (that is that GDP is two and two thirds its current level by 2050) and the standard of living in 2050 should be equivalent to the standard of living attained in 2049 under business as usual . . .

I will try to simplify that. If we had to reduce our emissions by 30 per cent, we would still attain the high living standards that we expect under a business-as-usual scenario in 2050. The paper continues -

A recent study by the Australian Bureau of Agricultural and Resource Economics (ABARE) found similar results with respect to GDP under comparable scenarios.

Key issues are:

- Low carbon emissions are consistent with future economic prosperity.
- The most serious question is how to manage the process of adjustment and preparation for future global constraints.

Priority deployment of all cost-effective energy efficiency measures and a modest price on carbon will ensure that process is as smooth as possible and will avoid future shocks to the economy.

We do not have to believe this but serious business interests are saying, "For heaven's sake, get on with emissions trading, get on with the job of adaptation to climate change, get on with the job of modernising the economy and stop carping about the only notional impact you're going to have on the energy industry." I suggest to the government and the ministers present that Collie would do a lot better if we restructured or revised its energy future and its involvement in the energy industry, rather than keeping it nailed down to the emissions-intensive dirty coal-fired power stations that it currently has. That is the take-home message. I cannot see why the Western Australian government is propping up that industry when it should be embracing the community of Collie and setting up an educational facility there, so that the town of Collie becomes an energy centre and can investigate renewable energy technologies. It has the skills base to empower generation and investigate renewable energy technology penetration into the grid; in other words, to create grid stability as renewable

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energy technologies such as wind power come in. There are many opportunities that Collie and regional communities in Western Australia should be taking to embrace a new technological future.

I have one more piece of evidence that I would like to present. We all know of Al Gore's film. We have heard it mentioned on television.

Hon Ljiljanna Ravlich: Yes.

Hon PAUL LLEWELLYN: Has the minister seen it?

Hon Ljiljanna Ravlich: No, I haven't.

Hon PAUL LLEWELLYN: We should all see it together. It would be a good film. We should go to the movies on Friday night.

Hon Simon O'Brien: I have an invitation to go to lunch with him which arrived today.

Hon PAUL LLEWELLYN: I am in the front row. I already have my invitation. He likes me. Al Gore and I are like two peas in a pod. Al Gore has produced a film called *An Inconvenient Truth*. It fundamentally suggests that we have to get with the times and basically embrace a new energy future. I would like to dispel the myth that carbon and greenhouse gas emissions will be one of the hardest things to resolve. An article entitled "Some Convenient Truths" by Gregg Easterbrook was published in *The Atlantic Monthly*. It has the same logo as *An Inconvenient Truth*. This article fundamentally says that we can reach our greenhouse gas emission targets much easier than we first thought. For example, it was only about 1980 that we realised that we needed a global protocol to reduce chlorofluorocarbons, which were creating a hole in the ozone layer. It turns out that we were able to reduce our chlorofluorocarbon emissions much quicker than we imagined. I will read from this article, "Some Convenient Truths". I will tell the whole story. It states -

During Ronald Reagan's presidency, emissions of chlorofluorocarbons, or CFCs, threatened to deplete the stratospheric ozone layer. As recently as George H. W. Bush's administration, acid rain was said to threaten a "new silent spring" of dead Appalachian forests.

But in each case, strong regulations were enacted, and what happened? Since 1970, smog-forming air pollution has declined by a third to a half. Emissions of CFCs have been nearly eliminated, and studies suggest that ozone-layer replenishment is beginning. Acid rain, meanwhile, has declined by a third since 1990, while Appalachian forest health has improved sharply.

Most progress against air pollution has been cheaper than expected. Smog controls on automobiles, for example, were predicted to cost thousands of dollars for each vehicle. Today's new cars emit less than 2 percent as much smog-forming pollution as the cars of 1970, and the cars are still as affordable today as they were then. Acid-rain control has cost about 10 percent of what was predicted in 1990, when Congress enacted new rules. At that time, opponents said the regulations would cause a "clean-air recession"; instead, the economy boomed.

This is the good news story about climate change. It says that we can learn from history. Very large protocols adapt to very large problems; in this case the CFC and the phytochemical pollution from nitrous oxide emissions were controlled very quickly. They were done using efficiency technologies. We made economic gains and the economy boomed at the same time, so we were getting more for less. What is the problem with introducing a carbon emissions trading scheme in Australia? What is holding back the federal and state governments and governments of all persuasions in Australia from taking a leading role in dealing with climate change? That is a rhetorical question. Perhaps the Greens are saying that we should be doing this stuff. Perhaps it was the Greens and the conservation movement who were saying this some time ago. But it is not the Greens any more; it is the business industry, the labour movement and the insurance councils. Those people are saying we should get on with the job. This Parliament and our government are lagging a long way behind.

I return to the motion moved by Hon Giz Watson, which reads -

That this house calls on the state government to -

- (1) Develop binding targets for emissions reduction to set us on the path of achieving the cuts required to avoid dangerous threats to the climate.
- (2) Support these targets with funding and policy measures.
- (3) Maximise the economic opportunities available through innovation and large scale investment programs aimed at greenhouse gas reduction.

Nothing can be clearer. The evidence is clear. With that, I conclude my remarks.

Hon Paul Llewellyn; Hon Louise Pratt; Hon Murray Criddle; Hon Bruce Donaldson; Deputy President; Hon Nigel Hallett; Hon Ray Halligan; Hon Ljiljanna Ravlich

HON LOUISE PRATT (East Metropolitan) [2.49 pm]: It will come as no surprise to members that I choose to speak on this motion. I have spoken at length a number of times on greenhouse gas emissions and their detrimental effect on the planet, particularly Western Australia. I believe that climate change is the single most important issue of our generation. We have a chance to make a real difference to climate change. We are at the cusp of that opportunity now. It is a shame there has not been earlier action. It is an opportunity that we cannot afford to squander. Western Australia has already seen the detrimental impact that climate change is having on Australia and Australians.

Just this week Western Australian farmers who are the victims of drought have sought greater assistance than that offered them by the federal government. Last week the bushfire season began in earnest with fires raging out of control in south east Australia. In recognition of the state's water shortage, we have already been placed on water restrictions. Most of us are not eating bananas because Cyclone Larry decimated Queensland's banana stocks. Bananas are now very expensive to purchase. Hon Paul Llewellyn drew attention to information from the Insurance Commission of Western Australia that highlights the important impact that a change in temperature of a few degrees would have, the impact that climate change has on extreme weather events and the risks associated with those. That includes everything from cyclones to hailstorms to rainfall and sudden windstorms, which have been experienced in metropolitan Western Australia in recent years. A small percentage change in the temperature can result in a large increase in the intensity of those events and the damage that they cause. A small change in intensity has an exponential increase in damage. I agree with Hon Paul Llewellyn that it is very important that we take a considered and active approach to this important issue. Australia is the custodian of many fantastic environmental icons. I refer to the Kimberley, the Ningaloo Reef and the Great Barrier Reef. Our south west is one of the most biodiverse regions of the world and it is already suffering from declining rainfall levels as a result of climate change. It is vital that we participate in global action to protect the world's environment.

In 2001 I spoke about greenhouse gas emissions and climate change. Fortunately to some extent the debate has moved on since then. Indeed, in 2001 it was difficult to be heard. Climate change is now an accepted threat in our society, and people have accepted the fact that we must take action sooner rather than later. An International Day of Action on Climate Change will take place on 4 November with the Walk Against Warming. Channel 7 is on board as its *Sunrise* program is running a Cool the Globe campaign with an online petition. The Water Corporation is running a series of lectures entitled "Our Drying Climate". The lectures deal with greenhouse gas emissions and the need to control them.

The state government's greenhouse and energy task force is currently deliberating and will report later this year. The motion before the house seeks to develop binding targets for emissions reduction to put us on the path towards achieving the cuts that are required to avoid dangerous threats to our climate. This is part of Australia's contribution to world efforts to rein in greenhouse gas emissions. It seeks to support targets with funding and policy measures to maximise the economic opportunities that are available through innovation and large-scale investment programs aimed at a reduction in greenhouse gas emissions. I agree with those intentions. I speak as a government backbencher when I say we cannot do this without proper technical advice. Although we must make our decisions earlier rather than later, it is important that we take adequate time to make the correct decision about targets to ensure that they are made in the context of the innovation referred to by Hon Paul Llewellyn. Industry has the capacity to change and to move with change. As Hon Paul Llewellyn said, when governments take action it is possible for industry to follow without great negative consequences. Indeed, such actions often provide greater opportunities. Targets are best set at the federal level, because each state has diverse industrial needs. It would be much better if the states undertook emissions trading with each other with a national target as the aim. I note that the Carpenter government is currently participating in the development of a national emissions trading scheme and that it is also working towards emissions targets for Western Australia and, ultimately, the nation.

Several federal ministers, including Kemp, Downer, Hill and Campbell, have recognised the need to reduce emissions by half by 2050. The federal government has no formal policy on targets other than a commitment to meet its Kyoto target of 108 per cent emissions by 2012. Australia's ratification of the Kyoto Protocol is imperative. There has been lax national leadership on this issue. National leadership and ratification of the Kyoto Protocol are crucial. In the absence of national leadership, the states should set binding targets and they should do that properly and purposefully. The greenhouse and energy task force is currently deliberating these issues. It is also examining in close detail the impact that future targets will have on industry and the community. The task force is the correct mechanism to undertake that examination. Let us make it easy for all those groups that will be affected by setting emissions targets; namely, business, industry, workers who rely on jobs with companies that may have to adapt their business practices, and government. We must give Western Australian companies the capacity to plan and to remove the uncertainty so that their value is not reduced. In the absence of a national plan, Western Australia must have its own strategy. That is not the optimal course of

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action, because the strategy should be national so that it has a greater impact. Given the importance of this issue, we must set targets to develop our own policy and to reward innovation in this area so that we can begin the task of ensuring that our environmental responsibilities are met. We do not have only environmental responsibilities; we also have economic responsibilities. Sooner or later the world will have a carbon economy, and carbon accounting and accountabilities will be something that Western Australian companies must respond to.

Speaking of the contribution that Western Australia can make to a reduction of greenhouse gas emissions in its own right, it is important to note that Western Australian natural gas is reducing greenhouse gas emissions in other countries. Western Australian natural gas is being exported to Japan, South Korea and China as liquefied natural gas where it is used to produce electricity for local markets. It is important to note that the alternative fuel for base-load power in these markets is coal. If coal were used instead of Western Australian natural gas, the resulting greenhouse gas emissions would be significantly higher.

Hon Paul Llewellyn: We are exporting coal as well.

Hon LOUISE PRATT: I do not deny that. This is a role that Western Australia currently plays in helping the world reduce its greenhouse gas emissions. Western Australia has the potential to be a world leader in renewable energy technology and generation. We have some of the best natural renewable energy resources in the world. We have unparalleled wind, solar and tidal resources and terrific scientific and manufacturing skills. Western Australia could be, and should be, a major global player in the renewable energy sector if it reduced its greenhouse gas emissions and gave the world an alternative to fossil fuels. Some fantastic, innovative work on biofuels is being undertaken by the government in Western Australia. This is an emerging area. I believe Western Australia can be a key player in this area.

In closing, I return to what I said in 2001, because I want to provide a larger view than what I have been talking about today. Even though I have spoken to this motion only briefly, it is an important motion. I said in 2001 that the problem with greenhouse gas emissions must be tackled not only by governments, but also socially; that is, by making changes to our lifestyle, such as our relationship with our cars, our leaving lights on in our homes, and our liking for household appliances. Greenhouse gas emissions will have a big impact on the lifestyles of everyone, not only in Australia but around the world. Therefore, the sooner we get on with educating each other and getting a real strategy under way, the better.

HON MURRAY CRIDDLE (Agricultural) [3.00 pm]: This motion gives me an opportunity to talk briefly about weather patterns and climate change. Last week I went to a Western Australian Farmers Federation meeting at which Mr Ian Foster and Dr Brian Ryan talked about climate change and its impact on agriculture. It seems that all the speeches that are made in this place about climate change end up being about the impact of climate change on agriculture. I am really concerned about the weather patterns that Western Australia has experienced this year. Hon Louise Pratt made some comments about this matter. God help us if this year is an example of the climate this state will be experiencing in the future.

Hon Louise Pratt: It is.

Hon MURRAY CRIDDLE: The member should take a realistic look at life. Just to finish off my statement, if that is the case, Western Australia will not have a very prosperous future. It was outlined to me the other day at that conference that if Western Australia continues to experience the weather patterns that have been experienced this year, most of inland Western Australia, almost through to the coast, will be lost. Indeed, where I live on the coast, there has been about four inches of rain this year. That is some of the best land in this state. I repeat what I have said: if Western Australia continues to have a year like this year, we will have great difficulty. The point that was made by these people is that in their estimation Western Australia will have fewer rainfall events and experience more dry times. The indication that they gave - they are the scientists - was that in the past 100 years the temperature has gone up by 0.6 of one degree centigrade.

I was also at a function last week with another respected gentleman in this state, Peter Falconer. Peter Falconer has been a farm adviser for many years. He outlined the fact that over the past 100 years the rainfall patterns in this state have not changed very much. In fact, 100 years ago there were some rainfall events that were similar to, if not worse than, those that have occurred in the past three or four years. In about 1914 there was a similar set of circumstances in which it was very dry. There was a similar event in 1940. I know from my own experience that 1976 was also a tough year. There have been variations over the past 100 years. Whether that is an indication of how the weather will function over the next 100 years is an interesting question. Certainly both Mr Foster and Dr Ryan pointed out that in the past 30 years there has been a reduction in the rainfall in the south west. If we project that into the future and do not make some technological changes, there will be some severe deficiencies in the eastern wheatbelt. Incidentally, Mr Foster pointed out also that cereal production will increase in the south west of the state. That was an interesting balance to the equation that he was putting forward. There are some balances and counterbalances. The other point that to some extent makes the issue far

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more complicated is the fact that these weather events seem to be dictated by the pressure systems that are passing over Western Australia. That is the problem that Western Australia has been facing this winter. Of course that is tied to the El Niño and La Niña effects. I understand that the eastern states are currently going into an El Niño, because the water temperatures are cooler in the north and warmer in the Indian Ocean, rather than the other way around, and the cold fronts are not coming through. I have not quite managed to work out the connection between weather patterns and the ozone layer.

Hon Paul Llewellyn: There is no connection.

Hon MURRAY CRIDDLE: That is right. That is the very point I am making. The reason for these weather fronts has nothing whatsoever to do with the ozone layer.

Hon Paul Llewellyn: The ozone layer is not the problem. The problem is the greenhouse gases in the atmosphere, not the ozone layer. The ozone layer is a completely different issue.

Hon MURRAY CRIDDLE: The whole debate that we had the other day about climate change was about those very issues. Hon Paul Llewellyn is now saying it is a completely different issue. At some stage we will need to get some very good advice on what the real problem is and how we can connect these things and find some solutions, because this debate is certainly very confusing. The other connection between this debate and the predictions that have been made and the information that came out of the seminar that I attended the other day is that this has a direct impact on the amount of money that governments need to spend on infrastructure and the like in outer areas. We need to correlate or pull together all the information that we have so that we can make meaningful decisions. If it is true that another cold front will not come through Western Australia, and this is an indication of what will happen in the future, as Hon Louise Pratt has said -

Hon Louise Pratt: Not every year, but it is expected that we will have more extreme weather events more frequently.

Hon MURRAY CRIDDLE: Hon Louise Pratt based her whole argument on this year. She said that this year is an indication of what will happen in the future.

Hon Louise Pratt: No. It is an indication that we will have events such as have occurred this year more frequently.

Hon MURRAY CRIDDLE: I am carrying on the discussion that the member has put forward. Unless we get a clear indication from the experts of what is ahead, we may make decisions that will be very detrimental to people who live in rural and regional Western Australia. We need to understand that. If we do not have the infrastructure in those areas, we will not be able to get people to live in those areas. That is the problem we are facing at this time. Western Australia is very fortunate, because we have gas supplies. We also have wind power. The Emu Downs wind farm is about to start up. A very large power source has recently gone in at Walkaway. We also have sun power and tidal power. I am no expert on tidal power, but it has been talked about regularly and it may eventually be up and running. However, it will be very expensive to provide the poles and conductors to get tidal power into communities in the north of the state. That is another interesting debate.

I read in the paper the other day that people are talking about starting up a hydrogen fuel industry in Western Australia. As Minister for Transport at the time, I signed off on the agreement to bring hydrogen fuel buses to Western Australia, so I certainly understand the issues that are involved. I have driven hydrogen fuel cell cars in Germany. I have certainly ridden in the buses. A hydrogen fuel bus actually came to Parliament House so that anyone who wanted to go for a drive around Perth in the bus could take advantage of that opportunity. The ride is very similar to the ride in the old trolley buses. It is very smooth. The buses are great to ride in. There are a couple of issues involved in obtaining hydrogen. A very large cylinder is required to carry hydrogen fuel on the bus; we have yet to refine that. However, liquid hydrogen can be stored in smaller containers. There are many things that need to be done to hydrogen fuel before that alternative can come to fruition. There is talk about biofuels and ethanol, and other issues that are happening on farms. They are now being put in place in the regions and being used on farms. Gull Corporation, a Western Australian fuel distributor, is making these fuels available. As I understand it, the government is not allowing vehicles powered by biodiesels to be put in place because of the guarantees that are required. Perhaps that is something the government needs to look at.

There is a range of issues. I might say to Hon Paul Llewellyn that it is a very interesting debate. Over the past week or two I have been involved in a couple of seminars about agriculture and in particular the impact on the ozone layer, global warming and whatever else people like to call it. However, we need to understand the issues. We need to learn what has to be done to overcome those issues, and we can overcome them. I understand that we are starting to reduce some of the impacts of emissions into the atmosphere.

Hon Paul Llewellyn: Not in WA.

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Hon MURRAY CRIDDLE: I think some people have certainly started to move in that direction. Wind farms are being put in place. I know of people who are using solar power. People are starting to look at ethanol and biofuels. The member has to give some credit for cases in which these sorts of things are being put in place.

Hon Paul Llewellyn: I apologise; you are right.

Hon MURRAY CRIDDLE: I understand that Hon Paul Llewellyn has introduced a bill that the house is seriously examining to see whether it is functional and can be adopted in Western Australia. We are taking steps in that regard. This debate reminds me a little of the debate we had about farmers. People could not believe that adaptations were being made, long after farmers had begun including conservation methods in their farming techniques. Things are being done and we need to recognise that and not go around saying that nothing is happening. We should encourage those people who are doing it, and perhaps encourage others to get involved and carry on the good work that some people have started.

HON BRUCE DONALDSON (Agricultural) [3.12 pm]: This is a very good debate, but I am a bit disappointed that Hon Paul Llewellyn did not have a wider term of reference for his motion. There are other factors; maybe he wanted to confine this debate into a very narrow field. However, what Hon Murray Criddle said is quite true. There are a number of ways in which changes can take place, and people are now very conscious of emissions and the problems of potential climate change. I do not know whether there has been climate change, or whether it is just cyclic in nature. That happens, and anyone who has been farming for a number of years will know that that has been going on for at least as long as I have been involved with farming. There have been series of wet years and series of dry years. I do not think that will ever change. However, the issue - as Hon Paul Llewellyn will know - is that the new Emu Downs wind farm, on the Brand Highway on the way to Cervantes, will be opened on Friday, 10 November, by the Premier.

Hon Paul Llewellyn: I'm there!

Hon BRUCE DONALDSON: Okay. I spoke to one of the heads of Western Power recently, who said that the wind farm has a 50 to 75-megawatt output. The wind farm at Walkaway, as Hon Murray Criddle has stated, is quite a huge wind farm.

Hon Paul Llewellyn: That's 90 megawatts.

Hon BRUCE DONALDSON: Yes. The unfortunate part is that on one hand, people say we have to control emissions and protect the ozone layer; but in the next breath they object to wind farms because they believe that wind farms destroy the environmental aesthetic of the area in which they are situated. People say that we should not have wind farms. That is the sad part. I have heard all sorts of stories about them chopping birds to pieces and all this sort of thing. People will drag up anything just to oppose them, yet 165 megawatts is being generated by those two wind farms alone. It must make a difference. It will certainly make a difference in securing a better power arrangement for Geraldton and places such as that; power supply to those areas has been hit-and-miss over the years.

Hon Murray Criddle also mentioned hydrogen cell fuel technology. My federal colleague Wilson Tuckey has been talking about this for a long, long time.

Hon Murray Criddle: He picked it up from me!

Hon BRUCE DONALDSON: No doubt he probably did! He is very excited about hydrogen fuel. We all know that technology changes, and I believe that those big cylinders that are presently needed for buses will be condensed in one form or another as technology goes along. I am told - I will stand corrected - that hydrogen fuel puts out only one per cent of the emissions of a typical diesel or petrol motor.

Hon Murray Criddle: The only emission is water.

Hon BRUCE DONALDSON: Water, yes. These are some of the issues that governments should be looking at and encouraging in development. There has been quite a big push lately to lift the rebate for people wanting to convert their cars to natural gas. The unfortunate part about it seems to be that once it all happens, the price of gas keeps going up. We are producing huge quantities of gas, and we should be enjoying a similar market to that which the people of the United States enjoyed for so many years, with low-cost petrol and diesel. However, we have huge gas reserves and we have been very slow off the mark in trying to develop that more closely. Hydrogen is another area that should be well advanced.

Another point not raised by Hon Paul Llewellyn was the question of the use of nuclear power. Seventy per cent of France's energy is provided by nuclear power stations. Technology has changed. The Chernobyl disaster still sticks in everyone's mind. However, that was really a Third World attempt at nuclear energy, and it was very poor technology. It certainly did not in any way enhance clearer thinking about what nuclear energy could provide. It produces very low emissions. Many countries are now discovering that it is the way to go. China

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and India are certainly developing their energy requirements through the use of nuclear energy. It is simply the only basis by which those slumbering giants - although they are no longer slumbering - can provide their own power requirements. The Prime Minister recently said that there are two types of uranium in Australia; the good uranium that comes from the three-mines policy, and the bad uranium that comes from any further mines. He said that he could not see how it was possible for there to be nothing wrong with exporting uranium if it was unacceptable to provide enriched uranium to an export market or to use it domestically as a power source. The Greens (WA) cannot have it both ways. We have huge reserves, but only 10 per cent of the market. Canada has the same amount as Australia exports in reserves and it has 90 per cent of the export market. Uranium has increased in price quite considerably as the demand for it increases. Western Australia has some of the best deposits of uranium in the world. The royalties it would attract would be another cash cow for the state government. I cannot, for the life of me, see how people have literally walked away from it. It is a way to provide clean power and energy.

Hon Giz Watson: That is rubbish!

Hon BRUCE DONALDSON: I cannot understand the Greens and their hypocritical stance. It comes charging out of the forests and suddenly says it has to do something about emissions. If anyone mentions nuclear power as a clean way to provide energy, the Greens say we cannot do that. They cannot have it both ways. They want a foot on each side of the fence and at times that can be dangerous.

Several members interjected.

Hon BRUCE DONALDSON: There are mixed signals from the Greens and it surprises me because I thought it would be leading the field in looking at alternatives to assist climate change.

Hon Giz Watson: Would you like a nuclear waste dump in WA?

Hon BRUCE DONALDSON: Does the member see the iron ore waste being dumped back into Western Australia? Of course she does not. The countries that export uranium are not sending the waste products back to the country from which it was exported. The export country has no liability in that sense. My personal view is that we have a wonderful opportunity to make billions of dollars in geographically and geologically stable areas. I was intrigued with what Pangea Resources Pty Ltd was proposing, but it did not go down very well with the wider population. By the same token, we would not be beholden to taking back the waste product. Already uranium is exported from Australia, but is the waste sent back to Olympic Dam in South Australia or to the Northern Territory? Of course it is not sent back. Again, this is a scaremongering tactic by the Greens. They run around and put the fear of God into people by saying it is a dreadful thing. The Greens movement does that. The Greens were born out of the old Communist Party. I suggest to Hon Giz Watson that she refer to her family history.

Hon Ljiljanna Ravlich: We are back to the reds under the beds argument. How pathetic was that comment.

Several members interjected.

Hon BRUCE DONALDSON: They have taken the ground that the Labor movement once had. The Labor Party has become more conservative in its thinking.

Hon Ljiljanna Ravlich: How pathetic that in this day and age you are carrying on like that.

Hon BRUCE DONALDSON: I sit in this house and listen to people rabbit on but I do not denigrate them for their behaviour. If the honourable minister does not want to listen to the truth and understand the family history of this group of people -

Hon Ljiljanna Ravlich: Because they have a different view does not mean they are card-carrying members of the Communist Party.

Several members interjected.

THE DEPUTY PRESIDENT (Hon Graham Giffard): Order! Members, there are far too many interjections.

Hon BRUCE DONALDSON: I will try to address my remarks to you, Mr Deputy President, because it is obvious that these people need a lesson in history and at another time I will probably give them that.

Hon Paul Llewellyn: Can we get onto the substantive motion?

Hon BRUCE DONALDSON: I am. I am trying to point out that the Greens are trying to achieve targets on emissions reduction to avoid dangerous threats to the climate. That is commendable and not one member in the house would object or not have the same view. However, we are more broadminded and visionary because we are looking at the whole picture.

Hon Giz Watson interjected.

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Hon BRUCE DONALDSON: I was not coming back to the Communist Party - I have dealt with that issue. I must address my comments to you, Mr Deputy President.

Hon Paul Llewellyn has raised a very good issue. I wish he would take a broader look at other issues. It is good motherhood stuff - there is no substance to this motion.

Hon Helen Morton: Don't put mothers down.

Hon BRUCE DONALDSON: I am not putting mothers down. I knew my learned colleague would pick me up on that.

Hon Helen Morton: Is it fatherhood stuff?

Hon BRUCE DONALDSON: I will say it is fatherhood stuff to keep the gender balance right.

The member's motion is based on good philosophy and ideology, but he did not spell out what he would like incorporated - is the member cleaning out his ears?

I look forward to other members contributing to this debate. I hope that when Hon Paul Llewellyn sums up, he will spell out his vision - not motherhood or fatherhood stuff or idle chatter, but dinky-di ideas to assist what he is trying to achieve by his motion. It is very important. I am looking forward to some substance in this debate. I listened intently to what Hon Paul Llewellyn said and it was nothing but an ideology and philosophy that anyone can espouse. This is the sort of philosophy that the Greens use to frighten the living daylights out of the electors in the western suburbs to get their vote. Of course the Labor Party sits back and enjoys it because the preferences flow through to it; and, half the time, that is the reason the Labor Party is elected to government. The Labor Party will fall over backwards to support this ideology and philosophy. Will the honourable minister be speaking to this motion?

Hon Ljiljanna Ravlich: When you finish I will be happy to get up. I do not lose an opportunity to debate an issue.

Hon Simon O'Brien: We wanted a debate yesterday and you did not have the guts to enter into it.

Hon Ljiljanna Ravlich: Get over it.

Several members interjected.

The DEPUTY PRESIDENT: Order! One member has the call and only one member can be heard at a time.

Hon BRUCE DONALDSON: Thank goodness I am being protected.

I am delighted that Hon Paul Llewellyn is nodding his head because he realises that he has to provide this house with some substance; that is, he has to get away from the motherhood and fatherhood stuff and get down to the crunch of what he is trying to achieve.

HON NIGEL HALLETT (South West) [3.29 pm]: It is refreshing to come in behind a couple of experienced gentlemen in Hon Murray Criddle and Hon Bruce Donaldson.

Hon Ljiljanna Ravlich: Just because of their age, it does not mean they have the experience.

Hon NIGEL HALLETT: No, but they have a fair bit of experience behind them and they have been through a fair bit. I have listened to Peter Falconer's comments on climate change and his experiences over 50 or 60 years. It is refreshing for people to sit back and listen to commonsense and figures instead of to people's reactions; for example, some of the rhetoric we have heard from Hon Louise Pratt. When Australia produces 1.46 per cent of the world's total greenhouse gas emissions, it must be placed into the context of where we really are.

Hon Louise Pratt: It is the world's highest per capita emissions level.

Hon NIGEL HALLETT: We are talking about 1.46 per cent of the world's total greenhouse gas emissions.

Hon Louise Pratt: It is significant when you look at such a big global problem.

Hon NIGEL HALLETT: I am not interested in that. I think Hon Louise Pratt is more interested in other things, judging by her Senate preselection, but we will not go there. If we are to talk about her emissions tax trading scheme, I point out that the carbon tax will cost every household in Australia between \$120 and \$150 a year. If we consider the fact that Western Australia produces some 6.3 million tonnes of coal, worth in the vicinity of \$280 million a year, the emissions trading scheme that is talked about would equate to a 28 per cent reduction in the use of coal, which would cost the Western Australian economy some \$70 million. The biggest contributor to greenhouse gas emissions is the water vapour, which has been mentioned, that comes from chimney stacks in almost every country of the world. The motion moved by Hon Paul Llewellyn is commendable but impractical on the scale that needs to be achieved on a state basis compared with what appears to be needed as a the world effort to reduce greenhouse gas emissions.

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I listened with interest to Hon Paul Llewellyn, as I always do when he digs deep and unpacks situations, but I could not help think that he was putting forward a tenuous argument. It is easy to blame climate change for all our present woes, such as drought, fires and water shortages. However the question must be asked about how many of these problems - for example, bushfires - can be attributed to bad policies on clearing. Groups such as the Greens have opposed the burning and clearing of forests on environmental grounds. The undergrowth fuels the fires. The forest was burnt hundreds of thousands of years ago. Nature did it for us. Let us consider our water problems. The government is spending \$1 billion on water solutions when dams are available and when clearing the catchments would provide 68 gigalitres of water. If we used those dams and cleared the catchments, we would not then have to spend \$1 billion on projects such as the Yarragadee, which I thought the Greens would be worried about, as it has potential environmental dangers. My response to Hon Paul Llewellyn is that Australia has had droughts ever since records have been kept. Until this year, the worst drought - I think Hon Murray Criddle talked about it - was in 1914, which was a tad before my time. We have gone through droughts, and we will have them again, but based on annual production over a five-year or 10-year period, Australia is actually growing. Technology is making us more efficient. The rainfall has increased in areas such as Merredin. Conditions may be changing. We may be getting more summer rain and less winter rain. Farmers will adapt to that. I passed through the wheatbelt quite recently, and there are some magnificent crops out there. However, the gap between farmers is also being accentuated, favouring those who are making the changes.

Fire hazards have nothing to do with the 0.6 or 0.7-degree increase in temperatures. A lot of it, I believe, is the irresponsible bushfire prevention policy we have today. There are forests that have not been burnt for 20 or 25 years. The forests were burnt regularly when the old Department of Conservation and Land Management was in charge on a local basis. It was never considered a problem. Western Australia's bush fire brigades are doing a far better job than those in the eastern states. We should not suffer the same bushfires as occurred in the eastern states, particularly around Canberra. I have spoken before about rainfall in the hills. The Bureau of Meteorology will tell us that the rainfall has not changed in the hills.

On the points I have just raised, I suggest that if we used commonsense and analysed the views that have been put instead of using some of the misguided views of Hon Paul Llewellyn, we would be on a much better basis. The Greens stated that Prime Minister Howard is one of the few leaders in the world who have failed to grasp that climate change is upon us. Maybe they do not realise that the federal government has committed more than \$2 billion to assist with research into strategies to deal with the effects of climate change. It has a range of world-leading programs to provide a comprehensive strategy, both in the short term and beyond 2012, which is the end of the period covered by the Kyoto Protocol. An effective response to climate change requires both local and international action, including the development of low-emission technologies. I can understand why the Australian government has not ratified the Kyoto Protocol, because unfortunately it does not provide a comprehensive or environmentally effective long-term response to climate change. Of the 164 countries that signed the protocol agreement, only 35 signed up to the greenhouse gas emission reduction targets, and none of those is a developing country. I mentioned that Australia produces approximately 1.46 per cent of global emissions. China produces 14.6 per cent. Under the current protocol agreement, greenhouse gas emissions are expected to increase by 40 per cent on 1990 levels by the year 2012. If it had not been agreed to, the increase would have been 41 per cent.

This shows that all major greenhouse gas-emitting countries need to work together to achieve an effective international response to address climate change. Although Australia has not joined the Kyoto Protocol, it has already achieved the target in greenhouse gas emissions required under the protocols. In a realistic situation, if emissions can be kept at a flat rate for the next 50 years, we will be on track to avoid doubling carbon dioxide emissions, compared with pre-industrial concentrations. A new course of action is predicted to avoid the worst consequences of dramatic global warming. The emissions avoided by this course of action have been termed the "stabilisation triangle", as developed by Robert Socolow of Princeton University. The source I use is the 2002 world energy-related carbon dioxide emissions figures produced by the International Energy Agency. The United States was rated at 23.5 per cent of total global emissions; China, 14.6 per cent; Russia, 6.2 per cent; Japan, five per cent; India, 4.2 per cent; Canada, 2.2 per cent; Brazil, 1.3 per cent; Saudi Arabia, 1.2 per cent; and Australia, 1.46 per cent. That is only to mention a few countries.

Hon Paul Llewellyn: What is the figure for Indonesia?

Hon NIGEL HALLETT: Off the top of my head, I could not answer that.

Hon Paul Llewellyn: It is approximately the same as Australia, with a population of 200 million.

Hon NIGEL HALLETT: I cannot see the link between people, industry and area. It is what the area is developing in greenhouse gas emissions. The current global greenhouse emissions are approximately 7 billion tonnes per annum of carbon dioxide. If we took the figure for Australia out of that, it would not make much

difference on a world scale. However, the world is on a trajectory to reach levels of around 14 billion tonnes per annum by 2055.

The Australian government has already taken practical action in a number of areas identified by Robert Socolow to reduce domestic greenhouse gas emissions. Some of these measures include encouraging the development of a broad range of low-emission technologies and renewable energy, and addressing barriers and impediments to the uptake of these technologies, through \$500 million for the low-emission technology demonstration fund; \$100 million in renewable energy development initiatives; \$75 million for the solar cities trial; \$21 million in renewable energy equity; a \$52 million rebate program for photovoltaics; a \$205 million renewable remote power generation program; \$20 million for the advanced energy storage technologies fund; and \$14 million for wind energy forecasting programs. A total of just under \$1 billion has been committed by the private sector, along with the commitment by the Australian government of some \$2 billion, for low emission technologies. Energy efficiency is currently the most cost-effective approach to reducing greenhouse gas emissions, and it also delivers net economic benefits. The Australian government is working with all spheres of government, industry and consumers to improve the energy efficiency of vehicles, appliances, buildings and transport, and to increase the uptake of cost-effective energy opportunities to reduce energy demand and greenhouse gas emissions.

The national appliance and equipment energy efficiency program is one example of how taking innovative and long-term approaches to climate change can lead to both economic and environmental benefits. The program is projected to save almost 204 million tonnes of carbon dioxide equivalent between 2005 and 2020. This will be achieved while providing a net benefit to the economy of \$23 million a tonne of reduced greenhouse emissions. In other words, consumers are actually saving money by buying and using the more efficient products mandated under this program. Another initiative has been the capture and storage of carbon dioxide. This relates to the use of fossil fuels.

The energy-intensive nature of the Australian economy means that we must look for more cost-effective and environmentally acceptable ways of providing energy. The improvement of the energy-efficient technology of coal-fired power stations is going ahead in leaps and bounds. I must mention that on the local front, a small Bunbury-based business in my electorate by the name of Ansac Pty Ltd is a world leader in new technology for reducing emissions from coal. It will commission this technology in Collie within the next month. It has been a huge leap forward, and Ansac is working with Wesfarmers on this. Looking at the action being taken in forestry, I am told that the number of new forest plantings is doubling.

I was going to touch on nuclear energy. However, Hon Bruce Donaldson has given a fair overview of that. Although the many merits of the nuclear energy debate need to be investigated in a manner that will give a fair and open result, nuclear power will be part of a global energy mix that will help deal with climate change. There is no question about it; it will happen.

There is no point in looking at closing down our economy, as so many of the government's suggestions point to all the time. The British Labour Prime Minister said at Parliament House in Canberra on 28 March 2006 -

... I was very struck by what your Minister said. I mean literally if Australia shut down so it was emitting nothing the growth rate in China is such, that within 10 months it would've made up for the entirety of the Australian emissions. That is why it is just, as I say, a completely unrealistic debate to say that you could have a climate change agreement that doesn't involve China and then America obviously, and of course India which is also a country of over a billion people growing at a vast rate.

Australia is playing a key role in international forums. Australia is a founding member of the Asia-Pacific Partnership on Clean Development and Climate. Countries in this partnership include China, India, Korea, Japan and the United States. Between them, the six partners account for almost half of the world's population, gross domestic product, energy use and greenhouse gas emissions. Australia is also an active member of the United Nations Framework Convention on Climate Change. When we look at the steps that Australia is taking, we should be proud of what the federal government is achieving. We would all like more to be done. However, on a state basis, I believe that we cannot support Hon Giz Watson's motion; we are too small a target. From an Australian point of view, we are doing those things set out in the motion now.

HON RAY HALLIGAN (North Metropolitan) [3.45 pm]: I feel that the Greens (WA) have put forward a motion that certainly appears to be reasonable in its intent. Other members have also spoken of the fact that although the motion may be reasonable in its intent, it may be difficult to implement. I note that the motion asks the house to call on the state government to develop these binding targets. My understanding, from what I read in newspapers and the like, is that the Greens have done a lot of work in this area. I have no doubt that they have. I was under the impression that they may have been able to produce some figures for some of these targets, rather than ask the state government to develop them. However, that is what the motion asks. I am afraid that, unlike the Greens, I do not believe that the state government could do it.

A reduction in emissions is something that everyone in this chamber and in the state of Western Australia would like to see occur. It is a matter of how it is done, when it is done and at what cost; that is, not only the cost in dollars, but also the cost to the livelihoods of the people of Western Australia. I understand that an argument can be put forward that if nothing is done, there will be adverse costs. I do not think anyone would argue with that. However, again, we need something that is concrete and that people can accept as being achievable, and we need to work forward to achieve those goals.

The motion goes on to refer to setting us on a path of achieving the cuts required to avoid dangerous threats to the climate. Hon Bruce Donaldson has already mentioned the fact that they are parenthood statements which are nice and general and which often sit comfortably with a great number of people, not the least of whom are those who speak the words. However, when it comes down to what will be done, often there is no explanation. That appears to be the case in this instance. I think we could agree with this motion but be concerned about the likely repercussions, because we are putting everything in the hands of the state government to develop the binding targets, "binding" being the operative word. I was under the impression that these targets were moving rather than fixed; that so many different variables were involved that the mix of those variables next month might be completely different from what it is today, and certainly in 12 months. Therefore, we might set binding targets and find that we have missed not only the bullseye but also the dartboard. Therefore, I believe that we must be careful in developing anything that will bind us. Again, having bound us to these targets, the motion asks for support for the funding to achieve these targets, to develop the policy and to bring it to fruition. Again, that all sounds very well and good. It sounds nice. Everyone would agree with the sentiments. However, are they achievable? What are we doing? There is nothing in the motion to suggest any of that. Considering their background, if the Greens (WA) were going to show any leadership in this regard, further information might well have been provided.

Paragraph (3) of the motion refers to maximising the economic opportunities available through innovation. Again, that is a very general statement; a very laudable statement. How will it happen? We are again asking the state government to maximise the economic opportunities. It has not done a great deal in the past five years. I cannot see it doing anything in this area, unless it wants to build another railway line to Mandurah for \$2 billion. The Greens want to maximise the economic opportunities available through innovation. We always hear people talk about saving Ningaloo Reef, yet the government wanted to build a resort on the reef after telling everybody it had saved it. I do not know about innovation or maximising economic opportunities. This government, like most others, is not in a position to be innovative with economic opportunities - that is, unless we want to go back to a government-led economy. Other members have already spoken about the Communist Party. I do not think we want to go down that path. We are looking to private enterprise and governments to provide supports that will encourage private enterprise to go down this path. This current government has done very little in that regard. It will accept the platitudes of how great the Western Australian economy is going but it does absolutely nothing to create wealth. That is all down to private enterprise. This government will take all the accolades that it does not deserve. When something goes wrong, as we have found - things have been going wrong over the past number of months - the government will be the first to duck and weave and point the finger at somebody else. When the Greens talk about the government - that means all the government members and, more importantly, the ministers - are they seriously suggesting that they want those people to undertake the roles outlined in this motion? I suggest that the majority of people in Western Australia would not be too happy with it. It makes me wonder why the Greens wish to go down this path.

Certainly more can and should be done to reduce greenhouse gas emissions. We all need to work together in that regard. We all need to look for some form of evolution so that we minimise the problems that so many people will be afflicted with should we try revolution. There is no doubt in my mind that 25 years ago something should have been done about our water supplies and so many other issues associated with many of the problems that we have today, not the least of which is greenhouse gas emissions. The saying is that it is better late than never. Let us start doing something now. While these general statements are all well and good, we need to know from the mover of the motion - surely the Greens have given this some thought - exactly what the Greens have in mind. What are the first steps to achieve what they are hoping to achieve? I would hope that, rather than standing back and asking, as the motion does, the state government will develop, support and maximise and that the Greens will provide that leadership, given their expertise in this area, and start to set some of the targets for the government. In fact, that is where the Greens would have been coming from. Rather than asking the government to set the targets, it should be causing the government to achieve the targets set by the Greens. I really thought that this would have been their argument.

I am sure that, as far as economic opportunities and innovation are concerned, we may well have heard that word that has been used for some considerable time, ecotourism, the saviour of the world. It is one thing that could be done. It will help only a small number of people. Other things need to be done. We need to look at this issue globally. The arguments that are continually put forward by the Greens suggest that they are looking at the

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global situation. That is laudable. We should bring that down from the globe to just Australia, then down to Western Australia. We need to know what we want this state to look like in 50 or 100 years. What we do today and tomorrow will affect what the state looks like at the end of those periods.

If the Greens truly believe that they have a vision of what needs to happen, it is incumbent upon them to bring that forward. They can do so through this motion. If we allow this current state government to undertake all these things suggested in the motion, we will go back 25 or 50 years. It is hard to say one way or the other whether the motion should be supported because it contains insufficient information. There are just general statements that a great number of people would probably agree to but which, of themselves, mean very little. I will leave my remarks at that.

HON LJILJANNA RAVLICH (East Metropolitan - Minister for Education and Training) [3.58 pm]: On behalf of the government, I say up-front that we will not support this motion. I understand the intent of this motion, which I certainly think is good. In principle, we agree that changes have to be made and things have to improve. However, we do not accept that we can achieve what we want to achieve given the current wording of the motion. I foreshadow an amendment to the motion, which has already been handed to the Clerk.

The Carpenter government accepts that human-induced climate change is a reality. It is a requirement of all levels of government to reduce greenhouse emissions to prevent dangerous climate change occurring. It amazes me that the federal government seems to want to take over absolutely everything, whether it be the economic base of the state, the education system or the training system. It wants to take over just about everything I can think of. However, one thing that it does not want to do is take responsibility for this key area.

Hon Ed Dermer: It is too hard.

Hon LJILJANNA RAVLICH: It is too hard for the commonwealth government, because it has not quite got its head around how to do that, and the pressure is put back on the states. This state government has responded to this issue better than any state government in history.

Hon Ray Halligan: Please explain!

Hon LJILJANNA RAVLICH: Hon Ray Halligan should take the time to look at the “Western Australian Greenhouse Strategy, Annual Progress Report 2005”, which is on the Internet. Just because Hon Ray Halligan is too lazy to get off his backside to do any research -

Hon Ray Halligan: I have a copy now!

Hon LJILJANNA RAVLICH: The member should read it. It is one thing to have a copy, but it is another thing to read it. Quite frankly, I do not think Hon Ray Halligan has read the report.

Hon George Cash: Have you read the report?

Hon LJILJANNA RAVLICH: Yes, I have. Indeed, I have marked my copy of the report.

Hon George Cash: Did you understand it?

Hon LJILJANNA RAVLICH: I did have some difficulty with the figures and formulas used in the report. Obviously if one has difficulty with those things, one should ask questions.

Hon George Cash: Did you ask someone?

Hon LJILJANNA RAVLICH: No, I did not. As Hon George Cash would appreciate, I have been very busy today! However, that will not detract from the effort that I am going to put into this debate.

There is no doubt that the Carpenter government recognises that the commonwealth government is best placed to provide policy guidance and implementation policy instruments to reduce emissions nationally. We are disappointed that it has not provided those things. It has been left to the states to manage this area. In the absence of national leadership on this issue, the state government, in particular the Carpenter government, has engaged in a range of activities that go to the heart of reducing greenhouse gas emissions. I will outline some of those activities. Building the southern suburbs railway line will have a significant impact on reducing greenhouse gas emissions because it will result in a reduction in the number of vehicles on our roads. Of course, that is a very positive thing for the environment. However, if we were running steam engines and had lots of steam engines going up and down, that would not be so good! We know that there have been significant technological advancements and that a net benefit will be gained as a result of that particular policy decision.

Hon Paul Llewellyn: Do you know how much?

Hon LJILJANNA RAVLICH: If I knew how to work out the formulas in the Western Australian Greenhouse Strategy annual progress report, I could apply them to work out what benefits will be achieved. I am making the point that in terms of cost benefits vis-a-vis greenhouse emissions this will be a positive step forward. The

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Carpenter government's decision to choose gas to power the next base-load power station is obviously another good policy decision. Another policy decision is offsetting greenhouse gas emissions from the government vehicle fleet through tree planting. The government has invested in renewable energy; indeed, one need only fly around the state to see the new wind farms that have been established and the amount of government investment in alternative energy sources. The government is also providing a subsidy for liquefied petroleum gas conversions in passenger cars. I could go on. I may come back to complete that list, because it is very impressive.

There is no doubt that an expanding Western Australian, Australian and world population will have a profound impact on the environment. Members should consider the population growth in the northern and southern corridors and the rate of development in that area. It cannot not be having an impact. The real question is: do we know exactly the cause and effect in terms of what impacts most on what? Certainly everyone is aware of the fact that the climate has changed. Many people put the recent tsunami down to climate change. I am not a scientist. I do not know whether climate change was directly related to the tsunami. When I was a young girl, which was not that long ago, it always seemed to be boiling hot from September through to March. That may well have been because I lived in Midland, which does not get much of a sea breeze. It always seemed extremely hot. These days it can be very mild during that period. Sometimes there are substantial and heavy rains in January.

Hon Kim Chance: Wasn't last summer Western Australia's coolest summer on record?

Hon LJILJANNA RAVLICH: Hon Kim Chance is correct in saying that last summer was Western Australia's coolest summer on record. Quite clearly greenhouse gas emissions have had a significant impact on our climate. None of this is exact science. The future of the state and the nation depend on ongoing work in the area of climate projections. It is a matter of determining climatic trends over a long period based on scientific data and of being able to make projections about that data as opposed to making predictions. I am sure that predictions are based on a scientific method. It is an interesting aspect of science. The government has made significant investments to promote the study and research that is required to ensure that Western Australia is ahead of the pack when it comes to dealing with climate change.

On the question of government leadership, a Labor government provided leadership on this issue by developing and implementing a comprehensive greenhouse strategy. The government must be commended for doing so. It has been conscious and diligent in ensuring that greenhouse gas emissions from government operations have been reduced. The government has said that it needs to lead by example. If we want industry to do the right thing, we must lead by example. It is interesting to note that I have done exactly the same thing in training. That shows really strong leadership. For example, the government has produced an environmental purchasing guide for a wide range of goods and services to provide purchasers with the guidance to appropriately incorporate relevant environmental considerations into their procurement processes.

We also have a sustainability procurement statement. We also are seeking to purchase the equivalent of five per cent of electricity from cost-effective renewable sources. We also have developed a Western Australian greenhouse gas inventory. I have to say that before I started looking into this motion, which was placed on the notice paper by Hon Giz Watson, I was not aware of the extent to which the government had developed policies in this area. Some examples are the reduction of greenhouse gas emissions from our vehicle fleet, the emissions offsets scheme, the possible emissions trading models and the reviewing and assessing of trading structures. These are all good things. However, I return to my main point. The state can do all these good things. However, the state, acting on its own, will probably not be able to achieve the desired outcomes. What we need in this area is a comprehensive national policy and a much stronger commitment by the federal government to this matter. That is very much lacking. I hope the commonwealth government will shift its thinking and come to the party and seek to work with Western Australia to ensure that we achieve the best outcomes for not only Western Australian but Australia generally.

As I understand it, to date we have not established a policy position on greenhouse emission targets. The Kyoto Protocol, which Australia and America have not ratified, sets a target for Australia as a whole at 108 per cent of 1990 emission levels by 2012. Australia is on track to meet this target. There have been large-scale reductions in land clearing, notably in Queensland, during the Kyoto period. This target is not intended to apply to individual states. However, certainly Western Australia's greenhouse emissions have increased by nearly 20 per cent compared with their 1990 levels. That has to do with the issue of growth that I raised previously. We cannot have continuing growth in population, and provide all the services that are required, and all the industries that are required to support those services and create wealth, without increasing problems with emissions.

A lot of work needs to be done. The government has established the WA Greenhouse Task Force, which was endorsed by cabinet in August 2005. It comprises five independent members, including the chair, and five

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senior government ex-officio members. The task force is supported by a secretariat, with officers seconded from the Department of the Environment, and with additional resources from the Office of Energy and the greenhouse unit of the Department of the Premier and Cabinet. The task force has a lot of work that it is focusing on. Once again, that is a big tick for the government, because there was previously no greenhouse task force in this state. Therefore, this is a very positive initiative. The task force will provide recommendations to the government on interim targets by 2050. It is worth noting also that it is proposed that the scheme to establish a national emissions trading task force, in which we are participating under the auspices of the state and territory leaders forum, will involve the establishment of long-term aspirational targets that are consistent with the target in New South Wales and South Australia of a 60 per cent reduction by 2050, and with an emissions reductions target cap in the medium term for the period 2010 to 2020. Those measures are significant.

Debate interrupted, pursuant to sessional orders.

Sitting suspended from 4.15 to 4.30 pm