

RENEWABLE ENERGY IN WESTERN AUSTRALIA

Motion

MS A.J.G. MacTIERNAN (Armadale) [5.48 pm]: I move —

That the house condemns the Barnett government for its lack of leadership in driving forward renewable energy in Western Australia.

This motion is of course a very serious issue for Western Australia. It is not only a serious —

Several members interjected.

The ACTING SPEAKER (Mr P.B. Watson): Order, members!

Ms A.J.G. MacTIERNAN: It is an issue that of course has a particular relevance at the moment because the federal government is currently steering the renewable energy target legislation through the federal Parliament. I understand that it is certainly through the House of Representatives.

The ACTING SPEAKER (Mr P.B. Watson): I ask members who want to talk or have a meeting to please go outside and have a chat. I want to hear the member for Armadale.

Ms A.J.G. MacTIERNAN: This is the plan, of course—it is anticipated it will be approved by the Senate tomorrow, if not today—that makes provision for the requirement that each retailer of energy must provide 20 per cent of energy that is generated from renewable sources. Alternatively retailers can use renewable energy certificates or pay an even higher price by way of a penalty.

In Western Australia it is quite clear from the statements of both the Premier and the Minister for Energy that they do not believe WA will reach this target of 20 per cent. They are taking pretty much a hands-off approach and are basically saying that this will all be a little too hard and that WA is unlikely to reach that target. Let us think about what that means. It means that Western Australia will be purchasing these renewable energy certificates from the other states. We Western Australians will be paying for investment in Queensland, in Victoria and in South Australia. We will be losing green jobs. We will be losing our potential to be a major participant in this renewable energy industry. It is not just a question of WA having to buy the certificates; it is a question of WA paying other states to invest in and create those green jobs that will give our economy the diversity that it needs to move beyond simply mining. It is a far more realistic proposition than the fantastic steel mills that are being proposed by the Premier. I say fantastic in its traditional sense of the word.

An opposition member interjected.

Ms A.J.G. MacTIERNAN: As in based in fantasy!

We have a very real problem here in Western Australia. Of course we are not going to get to 20 per cent renewable energy without a great deal of effort and without a great deal of advocacy and leadership on the part of the state government. It is simply not going to happen. It is interesting that the last report we were able to get once again indicates part of our problem. We have been able to get the Office of Energy's figures for 2007 and 2008 but they no longer appear to be updated. However, based on the 2007-08 figures, about 3.8 per cent of our energy is produced across the state and around five per cent on the south west interconnected grid. We clearly have a very big task. However, we do not have a government that is even the slightest bit in the frame for taking us forward.

Let us look at some of the Premier's speeches. His views on renewable energy were obviously set some time ago. He clearly does not foresee renewable energy as achievable in any large-scale application. In a speech of July 2006 in an address to the Australian Uranium Conference, he said —

Many will say the answer is to be found in renewable energy. I wish they were right.

It is easy and safe to find refuge in renewable energy. But is it a realistic solution? The hydro sources are either already developed or suffering from reduced water levels. Wind power is advancing well and continually improving its competitive position. It nevertheless depends on the wind and therefore does not provide for continuous reliable supply or essential base load generating capacity. Solar has been disappointing in terms of large scale application ...

In 2006, at the Australian Uranium Conference, the Premier was saying that we should be going for uranium, rather than —

Mr C.J. Barnett: In what context was I talking?

Ms A.J.G. MacTIERNAN: At the Uranium Conference —

Extract from Hansard

[ASSEMBLY - Wednesday, 19 August 2009]

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Ms Alannah MacTiernan; Mr Chris Tallentire; Dr Mike Nahan

Mr C.J. Barnett: No. What context was I talking about? It was world renewables. You are not going to go very well if you are ever going to get to Canberra. Can't research properly!

Ms A.J.G. MacTIERNAN: I tell the Premier that he is so far behind the eight ball. In a speech to the Greenhouse Convention in 2009, the Premier talked about a revival in renewable energy and how 20 to 30 years ago people thought it was going to be fab. He said —

From my perspective, the advances in renewable energy compared to other great scientific endeavours, like nuclear science, like genetics, like the space race, have been to this point, rather disappointing. We have not made the great advances in renewable energy, and particularly in terms of its mass application, that perhaps has happened in other areas of scientific endeavour ...

If you look at it ... wind ... wind has certainly gained a wider application ... The cost of wind, still above fossil fuels but at least it's ... competitive ...

For many parts of the world, and Western Australia would be one of them, there's ... abundant wind natural resource, so the problem is not capturing wind power, the problem is not building wind turbines, the problem is matching the supply of wind energy to the demand ... and ... that economic mismatch ... is the biggest constraint.

Other areas — solar power, again, one would hope, more practical significant advances can be made that commercialises it and makes it available as a mainstream power supply source.

The Premier went on to say that it was ironic that Western Australia had lots of sunshine, but that it was all really too difficult. It is certainly true—the Premier admits this in his uranium speech—that an enormous amount of government endeavour went into developing the nuclear industry and that it all had to do with the Second World War. The Premier seemed to understand that nuclear power actually needed the active engagement of governments to drive it further. However, I have to say to the Premier that his whole notion of wind and solar renewable energy is behind the times. The capacity for us to do this is there; the capacity for us to meet that target by 2020 is certainly there.

Some work coming out of Murdoch University suggests that if there is proper geographic diversity in the location of our wind power, we can match this to demand and we need not have this mismatch. The point is made that in the south and the coastal areas of the south west, the maximum wind capacity is generating at exactly the same time that Perth has its maximum drain of energy—that is, in the hot summer afternoons. Therefore, by understanding the wind resource across the state, it can be matched, with careful planning, be matched to demand. What we have here is the Premier's view, which he held back in the 1980s and 1990s, that baseload simply cannot be achieved with wind. The policies of Denmark and the United Kingdom indicate that wind can play that role provided there is a well-targeted, geographically diverse spread of wind.

The Premier goes on to say that there is no large-scale solar energy plant in the world. Let us look at the number of large-scale solar thermal power plants in the United States. They have currently about 600 megawatts in operation—not huge—and 1 700 megawatts under construction. Indeed, the power stations in the United States that have been announced and are apparently in the process of going through approvals are in excess of 8 500 megawatts. That is in the US, which has not traditionally been right on the cutting edge of this technology.

Of course we can do this in Western Australia, but let us look at the consequences if we do not. We will not have a seat at the table for these new jobs. We will be not only buying these certificates from the eastern states, but also putting our money into investments in Queensland and South Australia. We will not have the industries that will drive the state forward and give us this diversity. Unfortunately, the Premier has left the chamber for the moment. I will wait until he comes back. It is disappointing, Mr Speaker, that the Premier is not here for a debate on a matter of such importance.

Not only will we spend Western Australian money investing in other states, but will also lose those green industries and all of the skill development and manufacturing capacity that comes with them. Interestingly, in Germany the number of people involved in the manufacture of solar energy units exceeds the number of people engaged in the automobile industry. Germany has traditionally been a very strong, central manufacturer of automobiles. However, so great are the advancements in solar-power generation that it has become Germany's largest manufacturing industry. It is that sort of capacity that we will lose.

These things will not just happen: we cannot rely on the free market. This will not happen in the same way that nuclear power would never have developed in the free market without massively enormous amounts of government expenditure; that is, government investment in nuclear power. That is exactly the case in these other industries. In fact, these other industries will require far less investment than the nuclear industry but they will require advocacy: they will require governments that are prepared to invest and that are prepared to be creative.

I want to contrast two documents for members. The first is the Western Australian plan for renewable energy, which appears on the Sustainable Energy Development Office website and is about the expanded renewable energy target. The document refers to what the federal government is doing but says nothing about what the state government is doing. The last paragraph states —

Modelling commissioned by the Commonwealth Government suggests that renewable energy projects in Western Australia will make a significant contribution to meeting the national target, particularly in the early years of the scheme. However, the Western Australian Government considers there will be challenges in achieving high rates of new renewable energy generation in the state's main electricity grid and is working to address them.

That is it. That is our plan for renewable energy. In contrast, Queensland's plan is signed by its Premier—obviously someone who does not live in the twentieth century but who is firmly rooted in the twenty-first century. Queensland has a comprehensive plan for the future in which it is investing. The Queensland government is taking the initiative. It is coordinating and facilitating projects and is prepared to invest. That government is excited by the opportunities and believes that Queensland will be a leader in the field. It believes that 3 500 jobs will be created as a result of this investment. The Queensland government sees this as a fantastic opportunity, but the Western Australian government does not. Western Australia is not doing what Queensland is doing. Western Australia is not doing what Victoria is doing. South Australia tells us that 20 per cent is nothing, because it is aiming for 33 per cent and is investing accordingly. The South Australian government is driving the initiative, but the Western Australian government is not. It will be selling Western Australian jobs. It will be sending Western Australian technology jobs and the multipliers of skill that come with them to the eastern states because our Premier and our minister do not believe in it. At a conference, the minister said that the reason that Western Australia put \$100 million into reopening Muja A and Muja B, the dirtiest power stations in Western Australia, was that the government did not believe it would get very far with renewable energy. We are going backwards! This Liberal government has decided not to put money into renewable energy, but, instead, put it into the oldest and most discredited technology. Members must think about what this will do to Western Australia. Not only are we losing jobs and investing our money in other states, but also for the next 40 years we will be locking the state into high-cost energy. Once the carbon tax is in place, we will have to not only buy renewable energy certificates, but also rely on very expensive carbon-intensive energy. Western Australia will absolutely lose on all fronts because troglodytes are in charge of the state's energy policy. It is truly frightening, because no matter where we look, the government has no plan. There is no plan for how Western Australia will meet the 2020 target. All this government will say is that it will not meet the target; that it will be too hard, so we will buy certificates elsewhere. That is my first point. My second point is about the federal government's \$1.6 billion for solar flagships. This is yet another example of the Premier being completely wrong about solar energy when he says that it cannot ever be large scale or support substantial power stations. The Premier is very contradictory on such matters. First, he said that we cannot have 20 per cent renewable energy in Western Australia because our power system is too small, but then he said that solar power stations are too small. Premier, our systems are not too small. Look at Esperance. A wind farm built in 1992 has provided 30 per cent of Esperance's power since 1992.

Dr G.G. Jacobs: And very good it is, too.

Ms A.J.G. MacTIERNAN: Very good. My point is that it can be done with a population of 10 000 people. Of course it can be done. It can be done across the south west interconnected grid. It can be done in the Pilbara. Members should consider the problems that we may have in the future in the Pilbara. At the moment we have virtually no renewable energy in the Pilbara other than a few very good projects in remote places such as Nullagine; however, there is no large-scale renewable energy. We know that in the next 10 years there will be at least a fourfold increase in energy demand in the Pilbara. The only way that we will be able to have large-scale solar plants or geothermal energy in the Pilbara is if we have an interconnected grid. Yet what did this government do? One of its first jobs was to take the Pilbara interconnected power solution off the table for federal funding and replace it with Oakajee port, which the private sector was prepared to fund. That was a very, very backward step. The government will have massive problems achieving those targets in the Pilbara. Western Australia will have to buy renewable energy certificates from the eastern states. That is an investment for the eastern states, not Western Australia. The loss of this incredible opportunity to offer diversity of employment through a real renewable energy program in the Pilbara, the mid-west and around the state is very, very disappointing. As I said previously, the Premier has missed most of this debate, but I am sure that he does not mind.

Mr C.J. Barnett: I have missed nothing.

Ms A.J.G. MacTIERNAN: The Premier is not particularly interested. He has nowhere near the vision of Premiers in the other states; he has nowhere near the vision that has been displayed by Queensland, Victoria and, of course, South Australia.

I have mentioned the federal government's \$1.6 billion solar flagship program, but what did this state do? Nothing! To date, this state, which prodded a little bit when we put out a media statement, has done nothing. In order to get its share of the \$1.6 billion up for grabs, Western Australia should expect —

Mr C.J. Barnett: No; four times \$400 million is the deal now.

Ms A.J.G. MacTIERNAN: Yes.

Mr C.J. Barnett: Well, you just said \$1.6 billion, and it is not—it is four \$400 million fundings.

Ms A.J.G. MacTIERNAN: No; it is a \$1.6 billion package because there is research and development —

Mr C.J. Barnett: It shows that you have not even caught up with that.

Ms A.J.G. MacTIERNAN: There is an R&D component on top of the \$400 million—four separate projects plus each of those has an R&D component on top. There is \$1.6 billion up for grabs. WA should expect to get around \$350 million to \$400 million of that. We have to have a project. There are private sector innovators out there who are really keen to bid. There are projects for the Pilbara and projects for the mid-west. What has WA done to coordinate it? Industry is telling us that WA has done nothing. We have prodded. After asking what has been done over the past couple of weeks, at least we have started to hear some noises, but we have seen no action. For example, Victoria is putting up another \$100 million bid to assist to get it across the table. It has taken a coordination role, as has New South Wales. New South Wales has brought all the stakeholders together to work out how it can facilitate this project. It wants to know what sorts of things it can do and how it can get all those approval processes through to make its bid more attractive. It has asked what it can do to help get its bid across the table. Queensland has been extremely active with the plan that I set out earlier.

WA has been distinguished by its lack of interest and by its lethargy. It will actually prove its point by its own inaction. We will not meet that renewable energy target of 20 per cent if we do not have the advocacy and the preparedness to invest that we have seen in other states. The only thing that has really happened in the past year is the leveraging of a process that started when we were in government; that is, the commission of lead funding to the Carnegie group for its wave power plant. That is the only positive thing that we have seen. We have not seen one other unit of renewable energy.

Mr F.M. Logan: The feed-in tariff.

Ms A.J.G. MacTIERNAN: Yes, the feed-in tariff.

Mr C.J. Barnett: What did you agree with the Carnegie proposal?

Ms A.J.G. MacTIERNAN: We set up the lead fund. We facilitated the Carnegie group acquiring the lease of a seabed in the Albany area. I believe that the lead funding application went in while we were still in government but the decision was made under this government. The fund was established by our government.

Mr C.J. Barnett: So you're basically claiming credit for it, are you?

Ms A.J.G. MacTIERNAN: I am not saying that it was not an initiative. The government has done nothing that we did not have in train. We set up the lead fund. The application was submitted while we were still in government. This government has gone ahead with that. It is not the great action that we need to get to this target of 20 per cent. As I said, we have seen the Pilbara interconnected grid. I explained that while the Premier was out of the chamber.

Mr C.J. Barnett: I have heard it about 10 times so far.

Ms A.J.G. MacTIERNAN: Yes, he has, and the Premier will keep hearing it because it is important. How will the Premier get to that target of 20 per cent? We really want to hear about that.

Dr G.G. Jacobs: What's your action? You got pinged on desal 1.

Ms A.J.G. MacTIERNAN: Desalination stage 2 is another point. I thank the minister for raising that. One of the important things is that desalination stage 2 was to be entirely renewable energy. Of that, there was to be a 10 per cent component, or five per cent, for emerging technologies.

Dr M.D. Nahan: You were caught out.

Ms A.J.G. MacTIERNAN: I was not caught out. A short list was drawn up in March 2008. What has happened now, seventeen months later? Where is that going? Can the government help us? Can it tell us what it is doing to

assist these emerging technologies? We would really like to know what has happened with the desalination process.

Dr G.G. Jacobs: When you sit down, I might say something later.

Ms A.J.G. MacTIERNAN: That is excellent. The minister should tell us what he is doing to drive forward these emerging technologies.

Dr G.G. Jacobs: What did you do when you were over here?

Ms A.J.G. MacTIERNAN: We have a very good record. We now need to move resolutely forward.

Mr C.J. Barnett: What did you do?

Ms A.J.G. MacTIERNAN: As of today or tomorrow, we have a 20 per cent mandated renewable energy target. We cannot meet that by doing things like deferring the extension of the line to Geraldton, which we have done. We cannot do it by pulling the Pilbara interconnected grid and we cannot do it by going slow on emerging technologies. We cannot do it by taking absolutely no leadership whatsoever in the solar flagships. We only have to look at what states such as Queensland, Victoria and South Australia are doing compared with what Western Australia is doing. Our renewable energy plan is half a page on a website. This is Queensland's plan.

Dr M.D. Nahan: What's the difference between Queensland, Western Australia and South Australia in terms of electricity systems? They are interconnected.

Ms A.J.G. MacTIERNAN: We do not have a connected grid in the Pilbara because the government took it out. We have a south west interconnected grid. As has been demonstrated in Esperance, we can have renewable energy in quite small settings. We can certainly have renewable energy in the size of the south west interconnected grid.

Mr C.J. Barnett: Have you been to the Albany wind farm?

Ms A.J.G. MacTIERNAN: The government is just relying on these old arguments about wind. It is not looking at the more strategic thinking of the location of wind and putting in place large-scale 250 to 300 megawatt solar thermal power stations. All these things are possible. We need to get those green jobs in Western Australia. Members on this side of the house want to hear about the Premier's plan for getting us to that 20 per cent target.

MR C.J. TALLENTIRE (Gosnells) [6.17 pm]: I rise to support this motion. I wholeheartedly support it. The lack of leadership from the Barnett government in the area of renewable energy is extremely disappointing. I will use one example to demonstrate this. It relates to the feed-in tariff that was promised to Western Australians in the lead-up to the election that occurred on 6 September last year. The Labor Party went forward with a policy promising a feed-in tariff that would enable people who had photovoltaic panels on their roofs to be paid at a rate of 60c per kilowatt hour. That proposal was matched by the Liberals. As recently as 9 April this year I received a response from the Premier to a parliamentary question that said that the feed-in tariff will be paid to eligible system owners to the value of 60c per kilowatt hour for all electricity generated. The Premier said that very recently and then he backflipped on it. That shows the extent of his commitment to renewable energy.

Mr C.J. Barnett: The scheme was fundamentally flawed. When it was analysed, all we did was turn it into a capital grant. We are going to introduce a feed-in tariff but one, to use your favourite word, that is sustainable. That one was not.

Ms A.J.G. MacTiernan interjected.

The SPEAKER: Member for Armadale and Premier, the member for Gosnells has the call.

Mr C.J. TALLENTIRE: The fact remains that the Liberal Party and the Labor Party both went to the last state election promising a gross feed-in tariff. It was confirmed by the Premier on numerous occasions. It was confirmed by the Minister for Energy. That sudden backflip when the Premier started doing some budgeting on this simply shows that he did not know what he was talking about. He was prepared to mislead the people of Western Australia on his commitment to renewable energy and his commitment to a gross feed-in tariff. He was prepared to mislead people and then back away from it. That demonstrates the lack of commitment that he and his side of the house have towards renewable energy. It was a backflip that put people in a very difficult financial situation.

Many people, including constituents of mine in the Gosnells electorate, thought when they saw this change in the political landscape that they would still be in a position to make a commitment to put photovoltaic panels on their roofs. They thought they would be able to enjoy the assistance in meeting the capital cost that the federal government was providing. They did their budgeting very carefully and they looked at the figures, and they thought there was a reasonable expectation of a payback period that would allow them to take out the necessary loan to cover the outlay for those photovoltaic panels. Those constituents of mine are now in some financial

difficulty because of this government backflip. That is an outrageous situation. We have since received some correspondence on this matter from the Minister for Energy, Hon Peter Collier. I had written to the minister and had given him the example of one of my constituents. I was advised by the minister in his letter that, because my constituent had undertaken to buy his photovoltaic panels in the period between 6 September 2008 and when the Premier made this serious backflip on renewable energy, he might be entitled to some compensation. The letter from the minister also outlined that there was a time limit on the opportunity for people to apply for some compensation for this policy backflip. This is something that has not been promoted at all. I suspect many people in the Western Australian community will be in a similar position to my constituent. Therefore, all members should take note of this and let their constituents know that if they have put photovoltaic panels on their roofs in the expectation that they will be able to access this very sensible feed-in tariff, they will need to quickly advise the Minister for Energy, through the Sustainable Energy Development Office, so that they may be able to obtain some compensation. I have just read the letter again. I am afraid to say that the time period has already lapsed. This letter from the minister is dated 3 August. The letter states that people will have six weeks from 1 July to contact the Sustainable Energy Development Office if they are seeking compensation. Therefore, effectively the time period for people to seek compensation expired on 12 August.

It is totally unacceptable for the government to do anything that will act as a disincentive for people to become renewable energy producers in our suburbs and throughout our state. As my colleague the member for Armadale has outlined, there is an urgent need for the government to drive forward and ensure that our state increases its renewable energy output and moves towards not only the commendable, but also the feasible, target of achieving 20 per cent renewable energy by 2020. That can be achieved only if the government commits to it. It can be achieved only if the government stays true to its promises and does not backtrack and give in to the budgetary whims and the dishonesty and deceit that it has perpetrated upon us. If the government does the right thing and sticks to its promises, there is every chance that we will achieve the level of renewable energy that we should be committing to in Western Australia.

The promise of a feed in-tariff was based on sound policy. The optimum level of production from solar electricity will be on hot summer afternoons. That ties in nicely with the period when there is maximum demand for electricity on our grid. At that time, the present level of demand is about 3 500 megawatts —

Mr F.M. Logan: It is actually 3 700 megawatts.

Mr C.J. TALLENTIRE: I thank the member for Cockburn. We will soon be talking about 4 000 megawatts of demand at that very peak time. Therefore, it is an excellent idea to have a system in place that will increase the production capacity in the metropolitan area and around the south west interconnected system. It makes perfect sense to have that capacity on the grid, diffuse as it is, because it is based on individual households. It will actually be a very good investment. The Premier suggested earlier in his interjection that it would be financially difficult for the government to sustain the 60c a kilowatt hour gross feed-in tariff. The fact is that if the government did a full cost-benefit analysis, it would find that that incentive will encourage a greater number of people to become renewable energy producers. That will mean that we will have the capacity to produce electricity at peak times, instead of doing what we are doing currently; that is, switching on plant and equipment that comes on only at the peak demand times. That plant and equipment are very greenhouse-intense. That capital plant is doing nothing for most of the year. It is there just as a backup to meet our peak demand. Therefore, it makes perfect sense to pay people 60c a kilowatt hour for every unit of electricity that they produce from the photovoltaic panels on their roofs. That is something that the government should have held to absolutely. This serious policy backflip from the government is outrageous—not only because it is a broken promise, but also because it is a failure by the government to enhance the infrastructure and the generation capacity of the grid.

I turn now to some of the businesses that have been affected by this backflip. I recently went to the launch of a business in Welshpool called Solaris Technology. That company is a retailer of photovoltaic panels and other renewable electricity devices. It is looking to provide renewable electricity generation capacity to commercial enterprises, and obviously also to householders, and mobile generation capacity to people on boats or in caravans. There is already a strong demand for its products in the agricultural area. There are also many opportunities for that company's products to be used in the infrastructure that supports the oil and gas industry. There is no doubt that companies like Solaris desperately need the sorts of incentives that the federal government is putting in place. It is encouraging that the federal government is making good progress in providing incentives for renewable energy. However, we need the Western Australian government to do its fair share—its sensible share—of the workload and provide incentives to people to produce renewable energy. Our present level of renewable energy is 3.8 per cent in Western Australia as a whole and is five per cent on the south west interconnected system. That is but a start. We have so much more potential and so many more opportunities. We have already seen that two of our big wind farms—Emu Downs and Walkaway—which each have the capacity to generate about 80 megawatts of electricity, have been incredibly successful. That is a wonderful capacity, and

it is working beautifully. It is providing the landholders who are involved with an opportunity to diversify from their more traditional agricultural enterprises of sheep and cropping. It is giving them an extra revenue stream and thereby broadening their financial base, and that is a very useful thing to do.

I turn now to the international context because it is very important to compare where Western Australia is at with the rest of the world. The United Nations Environment Programme recently released the "Global Trends in Sustainable Energy Investment 2009 Report". A quick glance at that report gives us a sense of how huge the renewable energy sector is, especially when we look beyond Western Australia. It is useful to look at the sorts of government investment and incentive programs that are in place in the rest of the world to give people the financial incentive they need to pursue renewable energy. It is important to note that the UNEP report comes at a time when we are suffering one of our most severe financial crises, yet the content of the report on renewable energy on a global scale is extremely positive. It paints a very positive picture. Investment in the sustainable energy market has in some ways defied the global recession. It has increased from \$148 billion in 2007 to \$155 billion in 2008. That is an extremely large amount of money. It is worth noting the global economic stimulus packages. Members are familiar with the federal government's economic stimulus package of some \$42 billion. The total amount spent on economic stimulus packages around the world is \$3 trillion, or 4.5 per cent of the world's gross domestic product. Much of that is going towards the type of investment that is needed in renewable energy.

It is surprising to look at the economies that are embracing renewable energy investment. China, Japan and many European nations are leading the way, as is the United States. Investment in renewable energy generation projects grew by 13 per cent during 2008 to \$117 billion. New private investment in companies that are developing and scaling up new technologies has increased by 37 per cent since 2007 to \$13.5 billion in 2009. Some \$180 billion has been spent in fiscal stimulus support for the sustainable energy sector. That suggests that the political will has never been greater to make sure that renewable energy is the way to proceed in the future.

Some members opposite have a particular enthusiasm for nuclear energy and the uranium mining industry. They want nuclear energy to be part of our future energy mix. According to the US *Monthly Energy Review*, which is released by the US Energy Information Administration, a review has revealed that renewable energy sources accounted for 11.1 per cent of US domestic energy production and exceeded the amount contributed by nuclear power, which was 10.4 per cent.

Dr M.D. Nahan: Does that include dams?

Mr C.J. TALLENTIRE: Indeed it does, member for Riverton. Hydropower is a component.

Dr M.D. Nahan: Take out the dams and what do you have?

Mr C.J. TALLENTIRE: The growth factors —

Dr M.D. Nahan: Do you support building more dams?

Mr C.J. TALLENTIRE: That would not make any sense in Western Australia due to the present situation. If the member for Riverton is suggesting that we should construct more dams to produce renewable energy when we have declining rainfall, he has serious problems recognising the declining rainfall.

Several members interjected.

The SPEAKER: Order, members! The member for Riverton will cease interjecting.

Mr C.J. TALLENTIRE: It is clear that the rest of the world is embracing renewable energy, and Western Australia must seriously embrace it. Unfortunately, under the present Liberal-National government, we have seen a serious policy backflip that has totally let us down.

In conclusion, the betrayal that we have seen on the issue of the gross feed-in tariffs provides an insight into what the Liberal-National government thinks about renewable energy. It is a serious let-down to my constituents. It is a very sad time for Western Australia when our government does not believe that the renewable energy future is upon us and it does not care about investing more in wave and geothermal technologies. That lets down those people who are prepared to put forward proposals for a wind farm. In particular, it lets down people who want to have photovoltaic panels on their roof for good economic reasons, as well as for their interest in reducing their greenhouse footprint, and it lets down people who want a better and more diversified electricity generation capacity. Those people have been let down by this government. It is a very sad day for Western Australians when we must accept that the present government does not care about renewable energy.

DR M.D. NAHAN (Riverton) [6.35 pm]: This is a very important debate. As we all know, Western Australia is a very energy intensive state and Australia is one of the most energy intensive developed nations. Energy is very important to the state's future development. We are a major electricity producer and consumer. That is evidenced by the soon-to-be announced \$50 billion Gorgon project. ExxonMobil would probably say that the project will

end up costing \$65 billion. The commonwealth government has been toying with and has now introduced a 20 per cent mandatory renewable energy target. Personally, I think the target is excessive and will lead to a higher cost for energy. We must state openly and honestly up-front what the economic impact of that will be.

Ms A.J.G. MacTiernan: Can I just ask you if that's the position of your government?

The SPEAKER: Member for Armadale!

Dr M.D. NAHAN: What is motivating all these issues is not the love of windmills, solar cells, new technology or what are called green jobs. We have a challenge—it is a worldwide challenge—to address the concerns about the excessive generation of greenhouse gases, and that is what we are trying to do. This issue is neither germane only nor solely restricted to Western Australia; it is worldwide. One of the key themes of the various global warming schemes around the world has been to do this as efficiently as possible. We must reduce our greenhouse gases but we must go about it in the most efficient way and make sure that those who can do it cheaply do it first and do it the most. That is why we have schemes to allow us to pay Chinese operations to reduce their greenhouse gases in exchange for our production of greenhouse gases. We recognise that this is a global issue.

Some of these new technologies have huge potential. However, windmills are not one of them. They are an old, established technology. The use of windmills has grown over time, but it is nothing new. Don Quixote was chasing them 200 years ago. There is a huge potential for solar cells but it is also hugely costly. We must be honest and recognise that. All the data shows that solar cells, no matter what we do with them, are hugely more costly than any other alternative source of energy that produces more greenhouse gases. We are going towards renewable energy not because it is fashionable but because we are trying to reduce the amount of greenhouse gases we produce. Geothermal technology has potential but it is experimental. The member for Gosnells said that this government has not done anything about it. This week Hon Norman Moore announced that the Department of Mines and Petroleum has issued 36 permits for the exploration of geothermal power. Geothermal Power Ltd has been issued with a permit that covers 60 per cent of the metropolitan area. For a long time there was an issue about getting property rights for that. The previous government put the regime in place and we have followed through with that and have completed it. Now the Department of Mines and Petroleum has allocated 36 permits. The real trouble with geothermal power is that it has not worked anywhere yet. There is a lot of experimentation on it.

Mr F.M. Logan: What, so Indonesia and New Zealand are not generating geothermal energy?

Dr M.D. NAHAN: There are two different types of geothermal: one that taps hot water close to the earth, like in New Zealand, the US and Indonesia; and the other kind, which we are speaking of here, that is drilling deep, cracking rocks and putting water through. One of the ironies of geothermal is that it is nothing less and nothing more than nature's nuclear plant. It is radioactive decay heating rocks deep in the earth, and when we pour water down, hopefully, it will come through and generate steam and electricity, just like a nuclear plant.

Why does Labor hate nuclear? It is okay if it is buried in the ground and natural, but not otherwise. In fact, the Labor Party does not want nuclear energy, which is the only low-cost, baseload greenhouse-low energy that we know of. I think that solar cells, particularly in the future, when they are put on roofs and are available at a lower cost have potential. The real problem comes back to two things: one is that we have a unique system. The south west integrated system is very small; and the other is that it is not connected to the eastern states grid, and never will be. It is also not connected to the Pilbara, and never will be.

Ms A.J.G. MacTiernan: Why is that relevant?

Dr M.D. NAHAN: If the member for Armadale would sit down, be quiet and listen, like she should, I will tell her.

The SWIS is a very small system; it is a very peaky system, which is unlike the eastern states, which has a total grid that allows them to balance the system. If South Australia puts energy into the grid, it can be traded and balanced with energy offset all the way up into northern Queensland. Grids are about balancing loads. That is a very important issue that, of course, this does not adequately consider. The people who manage the SWIS are listening to these debates with increasing panic, because they have a very important task of making sure that electricity in the south west is reliable and outages do not occur. One of the problems—which they would have told the member for Armadale over and over again—is that with a lot of intermittent load, like windmills and solar cells, in a very peaky system such as ours and, all of a sudden, the windmills turn off, what do we do? We have to have backup capacity. Once we reach a certain number of windmills, the data is clear, obvious and well-documented, and if we have too much intermittent load we have to have one-for-one back-up with baseload. That is, we would have to have coal-fired power stations operating, running spinning capacity, waiting for the windmills to shut down. In other words, windmills do not save any greenhouse gases whatsoever.

Mr P. Papalia: What document is the member for Riverton referring to?

Dr M.D. NAHAN: Any greenhouse gases whatsoever. Not only do they emit the same level of greenhouse gases, but they increase the capital cost. Is this genius? Is this a vision that we want? It is absolute silliness. Windmills do have a role and they have the potential for expansion in Western Australia, particularly on the edges of the grid, as we have done so far in Western Australia, but we cannot consider windmills as the solution. In fact, a member opposite said that the steel mill that is supposed to be built up in Oakajee should be powered by windmills. It is madness. Steel mills operate—or, hopefully, they will—when the wind does not blow! Then we had the suggestion of putting power into an integrated grid in the Pilbara. Fair enough, and maybe some day that will come off; however, at certain times of the year members will notice that the Pilbara does not have very much wind. There is a lot of sun, but not very much wind.

Ms A.J.G. MacTiernan: No-one is suggesting that we want wind power for the Pilbara.

Dr M.D. NAHAN: Yes, members opposite have suggested that they want an integrated grid so they can expand by 20 per cent. Are we going to tell Gorgon to cool its LNG with windmills?

Ms A.J.G. MacTiernan: No-one is proposing wind power for the Pilbara.

Dr M.D. NAHAN: Yes, the member is. When we start to get large expanses of capacity on intermittent load, we either double it with other types of energy, which eliminates the savings, or we do not have the process.

Mr P. Papalia: You need to go back and read a little bit more. You do not know that much.

Dr M.D. NAHAN: The problem is that members opposite have lost touch with the goals. They are saying windmills and solar cells, let us pursue them no matter what! Members opposite have lost touch with the issue.

Ms A.J.G. MacTiernan: Does the member for Riverton understand that we are not talking about solar cells when we talk about solar power stations?

Dr M.D. NAHAN: Members opposite have picked their winners. They have decided they like windmills: “We like them, let us pursue them! Let us not worry about cost. We are on a challenge here. We do not care what the electricity charges are to the consumer.” The member for Gosnells referred to a 60 per cent farm-in tariff. That is three times the cost of others. Will members tell the people in Western Australia, when their bills start increasing by 25 to 30 per cent?

Mr P. Papalia: You just did that!

Dr M.D. NAHAN: That was because of the Labor government’s action; it failed to increase the tariff. Members opposite hid it for a decade.

Ms A.J.G. MacTiernan: That is because you refused to allow us to increase it. You legislated it!

Dr M.D. NAHAN: Members opposite increased production significantly, they hid it and said we can do this; this is our vision. They said, “Let us go out and adopt these technologies because it will provide green jobs.” How many green jobs does a windmill bring in? They come in packages. It is like importing cars. How many jobs does car manufacturing provide in Western Australia? Zip! The windmills come as kits and they are bolted together. The only local work is the foundation.

Ms A.J.G. MacTiernan: It is interesting because these solar power stations are saying they want to manufacture components here.

Dr M.D. NAHAN: They are not going to manufacture because of the economies of scale. That is silliness.

Ms A.J.G. MacTiernan: They want to manufacture components here.

Dr M.D. NAHAN: They will not.

Ms A.J.G. MacTiernan: Why is that?

Dr M.D. NAHAN: Because there is not enough production.

Ms A.J.G. MacTiernan: There will not be enough production if you are in government; that is true.

Dr M.D. NAHAN: Does the member for Armadale think that Western Australia is going to become a major manufacture of solar cells?

Ms A.J.G. MacTiernan: We are not talking about solar cells.

Dr M.D. NAHAN: What is the member talking about?

Ms A.J.G. MacTiernan: We are talking about solar thermal energy. Has the member for Riverton read anything that has been written in the past 30 years?

Dr M.D. NAHAN: WA does not have the scale. My sister works for a research place in Denver. It is US-government funded and it has a budget of over \$1 billion a year. So does Germany. The amount of research and development that is going into those things is huge. The member for Gosnells is right: a serious technological leap is needed. The research and development is going to be taking place. It is not going to be taking place in Western Australia. When the manufacturing takes place, just like everything, it will take place where it can be done cheaply.

There are no green jobs, but more importantly, if we go out to get a few jobs to put together windmills, that will come at a higher cost for other energy users or energy-using firms and will kill jobs—real jobs. The Greens might be your friends, but what we want is real jobs, real sustainable jobs and the recognition that Western Australia is, and hopefully will remain, an energy intensive state. One of its comparative advantages is cheap energy. We have to contribute to the overall demands of reducing greenhouse gases but we need to do it in a sensible manner.

Ms A.J.G. MacTiernan: Is this where uranium comes in, is it?

Dr M.D. NAHAN: I will get to that. The member for Armadale has this hatred for uranium, but she loves geothermal. It is all right if it is buried! She also says that one of her passions in life is to solve climate change; so she goes to China and says, “China, do not buy our coal or our iron ore because you produce greenhouse gases.”

Ms A.J.G. MacTiernan: I do not say that at all!

Dr M.D. NAHAN: Then she puts that aside. Then she tells them not to build the three gorges dams.

Ms A.J.G. MacTiernan: Where did the member get this nonsense from? You really are a twit!

Dr M.D. NAHAN: The member for Armadale is saying that the Chinese have no alternative to address greenhouse gases unless they go to nuclear power. The Chinese have no other option!

Ms A.J.G. MacTiernan: Do you mind, member for Riverton? If you had actually listened to what we have been saying you would know that we actually support coal.

Dr M.D. NAHAN: I have listened to the member for Armadale for a long time. The people who really want to address climate change and who then in turn demonise the use of nuclear energy in places like China, Europe, Indonesia and India, are two-faced; they are hypocrites.

Ms A.J.G. MacTiernan: It is because the sun is nuclear. Is that your argument?

Dr M.D. NAHAN: There is no way to do it otherwise. We have an obligation, particularly if we sign the appropriate treaties, to sell them uranium. That is our best contribution to addressing greenhouse issues.

Mr P. Papalia: Including Iran?

Dr M.D. NAHAN: I did not say Iran.

Mr F.M. Logan: You probably would!

Dr M.D. NAHAN: This statement is just stupidity.

Mr F.M. Logan: Let the free market sort itself out. Give it to North Korea!

Dr M.D. NAHAN: We sometimes have low-grade comments in this house, but that beats them all.

Mr F.M. Logan: You're a hypocrite.

Dr M.D. NAHAN: A hypocrite?

The SPEAKER: Order, members!

Dr M.D. NAHAN: Europe is an interesting phenomenon. Some countries in Europe have renewable energy. In particular, Germany has more than 20 per cent renewable energy. Belgium and Denmark have renewable energy. Denmark has a high level of renewable energy, and Spain has very high levels too. Good on them. Some of the costs are high. Some of the plants, particularly in the North Sea, are very productive and very efficient. The reason they can do that is that Europe has an integrated, interconnected grid, and demand can be balanced out. If the wind stops blowing in the North Sea, they can gear up electricity somewhere else. Our problem —

Ms A.J.G. MacTiernan: We can do that with our geography. It is actually possible.

Dr M.D. NAHAN: It is theoretically possible to put a wire from here to the moon. That is possible, but it is not practicable. Does the member know what the real lungs of the electricity industry in Europe are? It is nuclear power in France. Seventy to 80 per cent of the electricity generated in France is nuclear. Germany buys most of its fungible electricity from nuclear plants in France. So does Belgium and so does Denmark.

Mr M. McGowan: What is fungible?

Dr M.D. NAHAN: It is tradeable; it is moveable. It is a big word, I know. I keep that for the member for Cockburn. He hates those big words; he dislikes them.

What should we do about this 20 per cent target that the commonwealth has put forward? Do members know what we should do? We should say that we are a nation. Our energy producers should say that we need to meet this goal of 20 per cent, whether we agree with it or not. How should we do it? We should do it by the lowest cost means. If that includes buying windmills in Tasmania, where the wind blows more strongly, we should do it. If it includes promoting some sort of development in Queensland, we should do it. We are a nation, and this is a national issue; it is not a local issue. We have the member for Armadale's xenophobia. She might be running for the seat of Canning. However, when the people of Canning listen to her statements and realise the costs that what she is talking would impose a large cost on them, they will think twice about voting for her. Why are we saying that we have to do it here? Why?

Several members interjected.

Dr M.D. NAHAN: I will have a wager with the member. It is really different going from a safe seat to a marginal seat.

This is one of the biggest issues that we face. I ask the people on the other side to be honest about this. These efforts are going to significantly increase the cost of electricity. Their efforts will significantly undermine our competitiveness. We have to do it in a reasonable manner. We have to make sure that if we adopt this technology, we do it by a low-cost means. We cannot allow blind ideology—picking winners—to drive our energy system.

[Member's time extended.]

Dr M.D. NAHAN: We also have to do it in a manner that is reasonable, keeping an eye on the long term. The long term and the big picture are global.

One of the issues on which I will comment is nuclear power. I know this is a very difficult issue, particularly for people on the other side of the chamber. Many of them are baby boomers, and when they came of age there was a war going on—the Vietnam War—and they hated it. There were issues of free love at the time—they loved it—and there were nuclear issues. Like Peter Garrett, they could not distinguish between nuclear weapons and nuclear energy. They got it all confused. Right? They very effectively, through their lobbying, killed off the growth of nuclear power around the world. It remained stationary, except in a couple of countries: France, as I said, and Japan, where it grew, and Belgium, where it grew quite significantly. There was no investment in nuclear energy and research and development for almost two decades. Then along came the scare about global warming and the issue of how to address it.

Mr M. McGowan: Do you think it's a scare?

Dr M.D. NAHAN: If we watch and listen to Mr Gore, it is scary. If people believe it, we have to do something. The world is reacting.

Mr M. McGowan: Do you believe it?

Dr M.D. NAHAN: The world is reacting.

Mr M. McGowan: You don't believe it.

Dr M.D. NAHAN: All I am saying is that the world is reacting.

Several members interjected.

Dr M.D. NAHAN: Do I think it is global? Yes, I do.

Mr M. McGowan: You do believe it.

Dr M.D. NAHAN: Do I believe? Yes, I believe! Does the evidence show that there is global warming? Yes. It is not a religious thing; it is science. The real issue is that the world is addressing this, and it is addressing it urgently. By 2020 and 2050 the world wants an 80 per cent reduction in the production of greenhouse gases—a big task here—without destroying the world's economy. It is the biggest task that the world has ever tried to undertake. We look at this rationally and say, "What is the bevy of technology that we have and what is the biggest issue?" Electricity is the big one, and we need baseload. The only alternative to coal is gas, which we have a lot of. Worldwide, the only alternative in many cases is nuclear power. But we have all these people out there who are promoting alternative technologies and promoting the need for an 80 per cent reduction in greenhouse gases, and they have a complete mental block against nuclear power. They want to stay away from the production of the cleanest baseload energy that the world has. Why? Because when they were young kids

back in the age of love and “we all die at 30”, during the Cold War they confused nuclear weapons with nuclear power. It was a fundamental flaw.

Ms A.J.G. MacTiernan interjected.

The SPEAKER: Member for Armadale! I want to hear the rest of the member for Riverton’s speech in silence. It is not an opportunity for people in this place to continually interject, continually interject, continually interject.

Dr M.D. NAHAN: There was a source of confusion. I accept that. There was an incident at Three Mile Island in the United States, where, by the way, nobody was harmed. The plants continue to operate, even though they are very old. Then there was, of course, the incident at Chernobyl. That plant was built in Georgia or Ukraine—I think Ukraine—during the time of the Union of Soviet Socialist Republics. We would not even buy a car from the USSR, let alone build a plant like that. That plant blew up. It hurt a lot of people and it caused, justifiably, a reconsideration of nuclear power around the world. Twenty years down the track, we have two or three decades of experience in Europe. We have experience in Japan. We have a worldwide crisis and need to find low carbon baseload energy generation. If we are serious about addressing this issue, as many environmentalists and others are, we should be open-minded about nuclear power.

What is germane here? The first point is that we should be part of the uranium cycle worldwide, as long as the various treaties that Australia has agreed to are adhered to. Failure to do so would mean that we are abrogating our responsibility to address, and our belief in having to address, greenhouse gas emissions. The second thing is that we should look at home. In the south west interconnected system, it does not fit.

Mr M.P. Whitely: Member for Riverton, will you take a question?

Dr M.D. NAHAN: Yes, from the member.

Mr M.P. Whitely: Would you say that we should be at the end of the uranium cycle?

Dr M.D. NAHAN: What is the end?

Mr M.P. Whitely: Storing nuclear waste.

Dr M.D. NAHAN: No. All around the world it is accepted that the countries that generate the waste store their waste, and they do so often by, let us say, unsatisfactory long-term means. Some are trying to address that.

Mr F.M. Logan interjected.

Dr M.D. NAHAN: France recycles most of its waste. The Scandinavians are putting it into —

Mr F.M. Logan interjected.

Dr M.D. NAHAN: No, I do not think so. Every country should be responsible for its own waste, except perhaps for some of the military stuff from Russia, which is a separate issue. We should consider nuclear power here, but given the nature of nuclear plants around the world and their scale, they do not fit the grid. They are too big; they are too lumpy. They need 1 000 megawatts. Our system is too peaky and nuclear would not fit. Therefore, our major contribution should be to uranium mining. It is my belief that in the future we should consider nuclear power for the Pilbara.

Mr F.M. Logan: How will that do 20 per cent renewable?

Dr M.D. NAHAN: I think that, just like geothermal energy, nuclear energy is equivalent to a renewable energy. It is the same thing. Geothermal energy is just nature’s nuclear plant under the ground. Nuclear plants on top of the ground do exactly the same thing in a controlled environment. Over the past 20 or 30 years, the technology has gone forward in leaps and bounds, but members in this place say, “Don’t look at that. Look at windmills.” Just as Don Quixote did, we should look at windmills, chase windmills. We should run for them. One form of energy is solar cells. It is good technology, but it has a long way to go. Geothermal energy is okay because it is nuclear energy, but it is in the ground and we cannot see it.

Debate adjourned, pursuant to standing orders.