

ELECTRICITY INDUSTRY AMENDMENT (DISTRIBUTED ENERGY RESOURCES) BILL 2023

Second Reading

Resumed from an earlier stage of the sitting.

MR G. BAKER (South Perth) [4.07 pm]: As I was saying, we are debating the Electricity Industry Amendment (Distributed Energy Resources) Bill 2023. We are at a very exciting stage in transforming Western Australia's electricity system to one that will respond to the great challenge of our time, global warming, while at the same time making WA a world-leading source of cheap energy, transforming the production and transmission of energy, and its storage, consumption, export and regulation. First of all, we need to look at the old grid, the grid we grew up with, the grid established under the Electricity Act 1945 with the State Electricity Commission. This organisation continued on as part of the electricity system under Western Power and now Synergy. This system is nearly 80 years old, and some of the governing legislation is well and truly out of date. It was designed for a completely different kind of grid. It was designed for a small number of central generators, usually coal, latterly gas, and a large number of customers. There were a couple of central power stations sending power to many, many customers. The system has predictable energy use over each day, month and year. WA built an energy infrastructure of a largely one-way transmission of electricity to suit this system and a regulatory environment to support it. This has suited WA very well for many decades, but it does not fit anymore because, over the past two decades, we have had a technical revolution in solar panels and wind turbines. These two sources of power have become much cheaper and more efficient, and now represent the cheapest forms of electricity that we can generate on the planet. The speed at which they have become the cheapest form of energy is very impressive. It is very easy to see that in years to come solar and wind will provide the majority of power for the south west interconnected system and most other electricity sources. They will produce the lion's share of power during the day and provide a source for storable energy in the early evenings and other periods when wind and solar are not available.

This flood of clean energy comes with a complication. It requires a different kind of grid with a different kind of regulation. It requires a more flexible grid and regulatory environment. Coal-fired power stations are not the future, not only because they are coal, but also because they do not fit the energy needs of this new grid. They are very inflexible and we cannot turn them off quickly enough. We will move from a grid that has a small number of central power sources and a large number of consumers to a grid that has many producers and many consumers. A household can simultaneously be a producer, consumer and storer of energy in the course of the day. Electricity wires on a suburban street will transmit power into the street at one time of day and transmit power out of the street at another time of day. We will have wind turbines on land and offshore that will capture our abundant wind resources, batteries that can store energy in the household or the car, community batteries, small-scale grid batteries and grid-scale batteries. We will have batteries that can respond to demands from the grid in fractions of a second. This is in stark contrast to what coal can provide to us.

Today we heard from the Minister for Energy in his brief ministerial statement about all the batteries that Synergy is bringing online and other batteries around the system. There are 100 megawatts from Kwinana battery stage 1, 200 megawatts from Kwinana battery stage 2 and 500 megawatts from Collie battery stage 1, which will give us an 800-megawatt pipeline by the end of 2025. In other parts of the sector we have a 219-megawatt battery in Collie and a 100-megawatt battery in Wagerup, and others will come online as well. Therefore, we are addressing the flexibility of the system through the building and construction of batteries to meet this future energy need.

Other things that we need to update include the legislation. This bill will provide one part of the regulatory framework that will make this more flexible system happen, and other bills on the notice paper will help address these issues as well. In particular, this bill will change the regulation of distributed energy resources such as rooftop solar, household batteries, neighbourhood batteries and small wind farms, and will help unlock the future potential of these distributed devices as part of our power system. The bill will create pathways to ensure that ongoing growth of customer-owned distributed energy resources can be managed in a way that ensures continued power system security. The bill will enable the distributed energy resources road map to outline a path to safely integrate devices such as rooftop solar and batteries into the power system. This bill will provide a flexible regulation system for the new grid. Unlike the grid of the previous 60 years, we expect this grid to change quickly as new sources of electricity and new technologies are applied. This bill will create a more flexible regulatory structure, with technical issues being moved into regulations. The architecture of the system is contained in this bill. In addition, this bill will repeal a number of redundant instruments.

At the heart of a good, functioning electricity system are three important KPIs. The first is that the system has to work. When someone hits the light switch, the power must go on. The second is that the system has to be affordable. The third is that it cannot wreck the planet. These three KPIs have been captured in this bill as the state electricity objective, which is in proposed section 3A. It states —

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(1) The State electricity objective is to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity in relation to —

(a) the quality, safety, security and reliability of supply of electricity —

In other words, when someone hits the light switch, it goes on —

(b) the price of electricity —

It has to be affordable —

... and

(c) the environment, including reducing greenhouse gas emissions.

We have put the environment, costs and reliability into the heart of the bill, and they will become the guiding principle for decisions made under this legislation. In proposed subsection (2), the minister, the authority and the coordinator of the board must have regard to the state electricity objective in carrying out a function under the act. We have put those three important considerations right in the middle of these reforms. We will end up with a system that is more reliable, and we will set the standards and the governance of the system. The bill will also remove duplication and inconsistencies in the regulatory framework that underpins the state electricity sector.

I was pretty excited to see that this bill will also have an effect on the electric vehicle market in Perth. Before question time, I listened to the member for Cottesloe. He said, a little bit flippantly, that if every combustion car on WA roads were suddenly replaced by an EV, we would need 40 per cent more electricity instantly if they all charged off the grid. In that statement, there is a whole bunch of assumptions that are just not true and not things that we need to worry about. But on the basis of that hyperbole, he said that WA was not ready.

We are increasing the number of EVs on the road, and that number is doubling about every year. The uptake of EVs is in its early stages, but it is coming along very quickly. It is anticipated that about 60 000 EVs will be on the road within the next decade, so we have a good run-up to these things. The transition to EVs will take a few years, but the system is getting ready for it. As Western Power says, there is no transition without transmission—it likes to say that a lot! Synergy is also getting ready for it. Charging these vehicles at home will significantly increase household electricity needs, but because they are batteries, managing when and how they are charged offers opportunities for consumers and the grid. The cars can be charged during the daytime and can soak up all that amazing clean energy that we are producing. Each car is also a battery and has the potential to run a household over the course of an evening or do something similar if it is connected to the grid. This bill will facilitate large numbers of EVs and their chargers to connect to the grid while ensuring the power system it impacts is managed.

The government is further facilitating the connection of more EVs and EV charging equipment through its EV action plan, which was launched in 2021. The EV action plan provides a program of actions to reduce the risks and optimise the impact on the power system from the growth in uptake of EVs. The EV action plan focuses on connection and visibility issues for EV supply equipment, and will assess the impact of EVs on the distribution network through charging trials. The great opportunity here is twofold. Firstly, EVs can soak up all that cheap electricity produced during the day, cutting our dependence on petrol and replacing it with a locally sourced energy. Secondly, we can use EV batteries as part of the energy storage scheme for the SWIS. This is an emerging technology, but we are planting the seed in these regulations to take advantage of this possibility. Therefore, I have to think that the member for Cottesloe is wrong on this one. The EV transition is underway, and, yes, there are many preparations to make, but we have started, and we are ready. This bill is just one part of a great symphony.

One of the drivers of the development of this bill was the parliamentary inquiry into microgrids and associated technologies in Western Australia. The chair for that inquiry was the member for Swan Hills. I suspect she may get up and speak a little about this bill in the future. The inquiry was established in 2018 to investigate the emergence and impact of electricity microgrids and associated technologies. That included distributed energy resources, standalone power systems and electric vehicles. This bill directly supports the delivery of the recommendations of that inquiry. They include recommendation 1, that the Minister for Energy introduce regulatory changes that assist the system operator—tick; and recommendation 5, that the Minister for Energy ensure there is future clarity and no overlap or duplication in roles between government energy businesses when developing microgrids and associated technologies—tick!

It was not just the microgrid inquiry that informs this bill. There was also extensive consultation this year. Hundreds of different individuals and companies were involved, including the Australian Building Construction Company, the Australian Electricity Market Operator, the Clean Energy Council, the Western Australian Council of Social Service, Horizon Power, BP, Synergy, Western Power, Energy Networks Australia, Rio Tinto, Shell, and panels and consultations that involved dozens of people. Submissions were received from a wide range of sources.

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During that consultation, one thing that people and companies were not clambering for was nuclear power. It has been very amusing listening to the nuclear debate in recent Australian media, led by comments from the federal Leader of the Opposition. I do not think these people realise how absurd they sound when they advocate for nuclear power, especially in Western Australia. One of the clear things happening in this energy revolution is that with the development of solar and wind power, WA will have the cheapest energy in the world. It is extremely likely that we will have the cheapest energy anywhere in the world. On a fine, cloudless and slightly windy day, we will be swimming in cheap energy. The CSIRO *GenCost 2022–2023* report, which projects the cost of different sources of electricity through to 2030 and beyond, says that new large scale solar will cost about \$1 000 per kilowatt. New onshore wind will cost about \$2 000 per kilowatt. A new nuclear site for a small modular reactor seems to be what a lot of people are talking about these days. It would be \$1 000 per kilowatt for large scale solar, \$2 000 for new onshore wind per kilowatt, and, for new nuclear, it would be \$18 000 per kilowatt. That is 17 times more expensive than solar and nine times more expensive than onshore wind. I do not even know where the economic rationalists are on this one, because it is such a silly idea. Some pro-nuclear advocates say that nuclear provides a constant supply of electricity. Once it is set up, it pumps out about the same level of electricity night and day, and no-one needs to worry about it. They say that it provides baseload power, which is an advantage for nuclear power. Yes, it would do that. It would provide the same kind of reliability and profile as a coal-fired power station. That is not a strength; it is a weakness. We do not need a reliable, constant flow of electricity from a single expensive source. We need a variable supply to fill the gaps in the production of our extremely cheap wind and solar energy.

[Member's time extended.]

Mr G. BAKER: We need something that covers that patch in the early evening when we are all turning on our televisions and cooking, and we need something when a cloud covers the sun. We cannot turn on a coal-fired power station in that time and we cannot do it with nuclear power either. With the great expense of nuclear power, I do not see how it would be possible to do this without a deep government subsidy for that power source. The other question with nuclear power is where we would put them. If anyone wants to propose a nuclear power plant in WA, please tell me how much the taxpayer will have to subsidise, and what the address of the nuclear power station will be.

Going back to solar and wind, WA's energy of the future will be cheap. In fact, we will have so much cheap energy that we will be wondering what to do with it. Will we export it as hydrogen to Japan and Korea? Will we run cables under the seas of South-East Asia? Could we build energy intensive industry in WA, such as aluminium smelting or green steel smelting? The proposition for a green steel industry in WA is being examined by the Minerals Research Institute of Western Australia. The question is not whether it is possible, but rather, how to make it possible. Western Australia accounts for 38 per cent of the global supply of iron ore and is the leading Australian state in iron ore production, with nearly one billion tonnes in 2022. Our next competitor, Brazil, provides only 17 per cent of the global supply. The iron ore industry is the state's largest and most important industry, providing direct and indirect economic and social contributions to the state greater than any other industry. Its contribution is also significant to the national economy. For this reason, we must understand the future market dynamics of the steel industry to ensure forward planning and how to ensure the longevity of the iron ore industry in WA. With the steel industry generating more than seven per cent of global carbon emissions, there is a significant focus on the development of green steel technology. We in Western Australia can play a key role in helping the steel industry decarbonise. This is only possible because we will have so much cheap energy from solar and wind. This bill will help unlock the potential of these new forms of energy. We are on the edge of a transformation that will simultaneously address the great environmental issue of our time, global warming, while making WA a world-leading source of cheap energy.

We are doing this while providing significant relief to household electricity charges. I hear a lot of the complaints about the way we run power in Western Australia, that it is going to be too expensive and that this is not an affordable option. We are not only keeping increases to power bills lower than under the Barnett government and under inflation, but also, under schemes such as the household energy efficiency scheme, the household electricity credit or the hardship utility grants scheme, making household costs easier to manage. The Electricity Industry Amendment (Distributed Energy Resources) Bill 2023 will address the regulatory issues that this new electricity system will face. I commend the bill to the house.

MR S.A. MILLMAN (Mount Lawley — Parliamentary Secretary) [4.27 pm]: I rise to make a brief contribution in support of the Electricity Industry Amendment (Distributed Energy Resources) Bill 2023. I am stuck between the member for South Perth and his excellent contribution from a sound and substantial intellectual basis, and the member for Swan Hills, who will speak after me and will make another outstanding intellectual contribution. I feel as though I picked precisely the wrong time to give my contribution to this debate! I stand to speak in support of the minister and this legislation. I have before me the website of an organisation called Nuclear for Climate Australia. The member for South Perth asked where these small reactors were going to be built, and Nuclear for Climate

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Australia have listed a number of sites where it is more than happy to put small modular reactors: Kwinana, Tamala Park, Point Grey, Harvey, Bluewaters and Muja for probable locations; and Binningup, Three Springs, Albany, Bunbury and Kemerton for possible locations. There are a lot of potential sites for nuclear reactors that I am sure the local community would be rapt about! As the member for South Perth said, nuclear is not the answer for Western Australia. It is not an appropriate energy source. When we talk about energy supply in Western Australia, we can point automatically to three great features of our system: it is secure, reliable and affordable. With the passage of this legislation, I think we will be able to add a fourth feature: it is environmentally sustainable.

In the time that I have to make my contribution I want to talk briefly about a couple of sensible contributions this government has made already in the electricity system and a couple of sensible decisions that it will make for the future to protect and enhance our electricity system. First of all, I thought we had met the high watermark of Labor Party success in 2017 when we campaigned on a strong platform of not privatising Western Power. I thought that the 41 seats that we had successfully won in 2017, unquestionably on the back of that campaign, represented the high-water mark. Obviously, I was wrong because in 2021 the people of Western Australia were appreciative of the work we had undertaken in our first term of government and returned us with an even greater majority.

I learned from that 2017 election campaign just how much of an anathema the idea of privatising Western Power was to the community of Western Australia. We won seats that we had not won for generations, if ever. We won seats like Bicton, the seat I have the privilege of representing, Mount Lawley, and Murray–Wellington and Kingsley. When we speak to those members, we learn that the community in those electorates understood the risk carried by the Barnett government—for the sake of trying to put a fig leaf over its economic mismanagement—privatising Western Power was so great that they voted for their local Labor candidate. The retention of Western Power in public ownership gives us the opportunity to lead the work on decarbonising our electricity system. I saw only today a terrific article in *The West* by Jake Dietsch, titled “Heatwaves are coming”. Day after day we can see articles wrestling with the issue of climate change. Mr Dietsch writes in his article —

Perth is set for a sweltering summer, with the Weather Bureau warning there is a high likelihood of heatwaves.

Senior meteorologist Andrew Burton said from now until February, there was an 80 per cent chance of warmer than usual days and higher overnight minimum temperatures.

“We’re expecting it to be a hotter than usual summer and that is likely to lead to heatwave conditions,” ...

That is on the back of the hottest day in September on record for a number of years. As the member for South Perth said, there is no doubt that we are facing an incredible challenge in tackling climate change. The work that this minister has done and that this government will do with the passage of this legislation will provide us with a sound basis for moving towards more environmentally sustainable electricity generation, which brings me to the second point that I wanted to make in the time that I have. That is about the provision of important services. As the member for South Perth said, the community has already adopted numerous measures to tackle climate change. Unfortunately, time lost as a result of the former Barnett state Liberal government and the former federal Liberal–National government, time lost tackling climate change from a government perspective, meant that the community had to start taking action. Whether it be in the member of South Perth’s electorate or in the electorates of Mount Lawley or Vic Park, we have seen people step up and adopt things such as electric vehicles, solar PV on their rooftops and battery storage.

The retention of Western Power in public ownership meant that we could do things such as we have done with our community battery in the suburb of Yokine. This community battery was part of the phase 3 PowerBank trial. The way these work, if I have the technology right—this is again the problem with going subsequent to member for South Perth and before the member for Swan Hills—is that local residential solar photovoltaic systems can feed into the community battery, which for the purposes of my electorate it is located on Knight Avenue Reserve, and can then draw down during times of usage. It is a community battery. There are community batteries throughout suburban Western Australia and also in some regional towns. This would not have been possible as an energy storage solution were it not for the retention of Western Power in public ownership. That is the second thing.

The third thing, again, is very important. I spoke about affordable reliable, secure and environmentally sustainable electricity. I spoke about the benefits of the retention of Western Power in public ownership. I have spoken about the provision of services like community batteries. I next want to speak about amenity. One of the things that we have seen that is very popular in the electorate of Mount Lawley and in the City of Stirling is the transition to underground powerlines. For a long time, we had the state underground power program, which, unfortunately, during the term of the Barnett government was subject to some of the most rank politicisation one could possibly imagine. We should be dealing with our power infrastructure on the basis of need. We should be moving those existing suburbs with legacy infrastructure to underground power. I was very pleased to see that my local government area, the City of Stirling, back in November last year voted unanimously—every single one of those councillors on the City of Stirling—to participate in Western Power’s new targeted underground power program. It moves us

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beyond using underground power as a political football, with suburb played off against suburb, with ward played against ward, and moves us towards a situation in which underground power is provided on the basis of the infrastructure requirements of the network. I am very pleased to see that, particularly in the areas around North Perth and Mt Lawley, the residents in the seat of Mount Lawley will be the beneficiaries of this new more sensible approach to the provision of underground power.

The final point I want to make, which was touched on already by the member for South Perth, is that one of the biggest challenges that the community is facing at the moment is cost-of-living pressures. The retention of Western Power in public ownership and the sound financial management of originally the McGowan Labor government and now the Cook Labor government has placed us into a position whereby we can provide electricity credits to those in the community who are doing it tough. On the back of the \$600 electricity credit provided in 2021, we have the \$200 electricity credit that would have hit people's bills in July or August, just recently, and another cost-of-living \$200 credit is coming in the next billing round in November or December. This is sound financial management of the electricity system, generating money that can then be reinvested to assist people who are struggling with cost-of-living pressures.

That does not mean we do not also have the money available to start spending significantly to build capacity. As the minister said today in his brief ministerial statement on coal retirement readiness, almost 1 200 megawatts of generation capacity is leaving the state's main grid with the retirement of coal-fired power stations. The retirement commitment was underpinned by a comprehensive \$3.8 billion plan to replace existing generation and support the Collie community during the transition. Over the past few months, Synergy has made great progress in delivering some of the biggest components of our energy transition plan. There have been a series of significant battery energy storage system milestones. The battery energy storage milestones are underpinned by a state government commitment to spend \$1 billion to build big batteries in Kwinana and Collie. That is in addition to the \$3 billion that the Cook Labor government will get from the federal Labor government as part of the federal government's Rewiring the Nation fund.

Once again, the state government has successfully lobbied Canberra to get our fair share of money, an attribute of this government that was sorely lacking under the previous Liberal-National government. When we think about those elements and the antipathy in the community to the privatisation of Western Power, the amenity that is generated from depoliticising the underground power program, the services provided to people who have already taken material steps to reduce their own carbon footprint by putting solar PV on their rooftops through the provision of community batteries, the alleviation of cost-of-living pressures through our \$400 payment to household budgets, the \$1 billion we will spend on big batteries in Kwinana and Collie, and the \$3 billion that we have secured from the federal government, members can see that this is a minister and a government that are committed to tackling the biggest policy challenge of a generation, which is climate change. We can do it only because of the sensible decisions that we have made in the past, because we have brought the community along with us and because we can see what challenges lie ahead. We are introducing the legislative framework to respond to those challenges. It is for that reason that I commend the legislation to the house and the minister for all his hard work.

MS J.J. SHAW (Swan Hills — Parliamentary Secretary) [4.41 pm]: I rise to make a contribution today to the debate on the Electricity Industry Amendment (Distributed Energy Resources) Bill 2023. I begin by noting that Western Australia is home to some of the world's most innovative groundbreaking energy technologies. Western Australia really is leading the way on distributed energy resources. These technologies can radically change the way we produce and consume electricity and contribute to a more secure, affordable and reliable sustainable power supply, but only if we get the regulatory and policy settings right. It is very important to do that. More than any other state, Western Australia has embraced distributed energy resources technology, particularly at the household level. We are now witnessing the most fundamental shift in our energy production model since electrification itself. Currently, 38 per cent of households in the south west interconnected system have solar PV on their rooftops. Household solar is now the single largest source of generation capacity on the SWIS and it is three times larger than our largest power station. We have seen incredible interest in household and grid-scale batteries. That is absolutely fantastic.

The energy supply choices for energy consumers are really challenging industry structure, system operations, regulatory frameworks and market mechanisms. It is no simple thing to address those issues. The legislation that we are considering today has been developed in response to those challenges. It is part of a very thoughtful, considered, methodical and thorough reform process, and it is long overdue. We have known that these changes have been underway for quite some time. I worked for Horizon Power back in the 2000s and I can remember that in those days, following the incentives to install solar PV on rooftops, we had to cap the amount of solar PV into electricity systems because the intermittency of electricity generation and the lack of visibility and control was causing all sorts of system stability issues in the island systems that Horizon Power operated. That was really unfortunate because a lot of people wanted to put solar PV on their rooftops, but it was not that simple. People cannot

just stick PV on their rooftops and not expect implications for the way the network is managed. As I said, in the late 2000s that was starting to be a problem on the small systems. What do you know? We are now starting to see some challenges on the larger system. About a decade later, I worked for Dampier to Bunbury Pipeline, as it was then—it is now the Australian Gas Infrastructure Group—and it did a major study of the gas demand outlook on the Dampier to Bunbury natural gas pipeline, which is the state's largest pipeline asset and is the backbone of our energy system. We looked at the supply demand dynamics and observed the usual gas demand profiles on heavy industry users. The usual profiles were very flat. They were very normal profiles, if you like, for those who were supplying gas for household use; less energy was used in summer and more was used in winter as people used gas for heating and cooling. However, we observed rapidly changing profiles for those using gas to supply the electricity market. The total gas throughput was not changing much, but the demand patterns were. There was an incredible amplitude between the peaks and troughs. The pipeline utilisation was really swinging around wildly. When we looked into that more deeply and talked to the shippers who were utilising the pipeline, we could see that it was directly related to the increased penetration of solar panels on household rooftops. That affects not only the way that our electricity market operates, but also has significant implications for our gas systems. I could make a whole series of observations on the implications of that on gas markets and regulatory regimes for gas pipelines—there are very important issues to consider around gas and electricity operations, particularly in emergencies—but that is not the topic for today. Nonetheless, I note that the interplay between the electricity and gas markets is a material issue.

These market trends have endured over many years and are going to continue. The Australian Energy Market Operator recently projected that small-scale solar is forecast to grow, on average, at 8.1 per cent per annum. That is driven by a reduction in the cost of PV systems and the relatively short payback period for them now. Large-scale renewable generation is supplying an increasing amount of our electricity needs. We are seeing transmission, distribution and household-scale batteries deployed across the network. We have known about these challenges for a long time, yet absolutely nothing meaningful was done for energy market reform since the last time Labor was in government. I ran for Parliament because I could see that we were not taking the steps required to move towards a more sustainable energy and economy, and to support Western Australian energy consumers' choices. Like so many energy professionals whom I worked with, I could see these changes underway in the energy market and the lack of reform and policy action necessary to accommodate them. That policy inaction was hampering our ability to meaningfully address climate change. Even worse, the lack of thought leadership was threatening to undermine our energy system security. It was also jeopardising jobs, threatening our economy and placing upward pressure on energy costs.

Members might recall that when the Liberal Party was last in government, its biggest energy policy idea was to sell Western Power, and the biggest policy it managed to implement was to hike electricity prices for Western Australian households by 97 per cent. They were the big ideas: sell the assets that are able to facilitate the change and pass the additional costs on to households. I want people to remember that. That was the consequence of a Liberal government that fundamentally did not understand the energy market and particularly the transition that our economy was going through at the moment. We saw pamphlet after flimsy pamphlet with little more than motherhood statements. I remember being at Fraser's when Minister Collier released the state energy initiative. It was absolutely appalling. I am a member of the Australian Institute of Energy and very privileged to be a fellow of it now. The energy sector itself was aghast at what was served up to us in the guise of energy policy. Absolutely no meaningful effort whatsoever was undertaken to attempt to adapt to the changes underway in the market. In fact, I would argue that it was a wilful blindness because the Liberal Party was so ideologically committed to privatisation.

As we know, Liberals have long had a problem with even acknowledging that climate change is real or that we need to meaningfully adapt our energy systems to accommodate it. The legislation that we are considering today is yet another step on our major energy transformation journey, being led yet again by a Labor government. In the last term of Parliament, I was very privileged to chair the Economics and Industry Standing Committee that conducted a two-year-long inquiry into microgrids and associated technology, being distributed energy resources. Some of the provisions in this bill are a response to the recommendations of that inquiry. I wanted to talk about that inquiry today because if people are energy geeks like me, they will find some of it really interesting. It might be mildly sporadic for other people, but I loved it. We undertook our inquiry in two stages. In our first interim report, titled *Implications of a distributed energy future*, we noted the extraordinary pace of change, the extent of our world-leading innovation and the opportunities along the value chain arising from the emergence of microgrids and DER. We found that distributed energy resources are increasingly cost competitive with traditional energy sources—I think we are now at a crossover point—can operate to increase the efficiency of existing network infrastructure and represent new opportunities for economic diversification, jobs generation and the export of intellectual property, services and products to the world. Most importantly, they can reduce the carbon intensity of WA's energy sector and assist us to tackle climate change in a very meaningful and effective way. In our second report, *Taking charge: Western Australia's transition to a distributed energy future*, we took a much closer look at regulatory and technical matters. I really enjoyed working on that second phase.

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It is fair to say that we would all like as much renewable energy as possible, but there is a remarkably complex interplay between physics, technology, markets and regulation, and significant changes are required in all those aspects to support the energy transition. We all know that minimum demand records are now being set on the south west interconnected system.

Mr W.J. Johnston: On the public holiday.

Ms J.J. SHAW: I bet it was. The latest data I have is that about 70 per cent of total demand in the SWIS was met by rooftop solar.

Mr W.J. Johnston: On the October public holiday, we got to 585 megawatts.

Ms J.J. SHAW: That is absolutely crazy. As much as that level of renewable energy feeding into the grid is fantastic, there is a valid concern that the uncoordinated uptake of rooftop solar systems may see daytime demand for traditional thermal generation fall to levels at which the stability of the SWIS could be compromised. They are legitimate concerns. The lack of visibility of these assets and the inability to control them and the way that they interface with the system makes network and power system operations incredibly difficult. I have seen Jai age over the last few summers.

Mr W.J. Johnston: He's lost all his hair.

Ms J.J. SHAW: Yes, he has lost a lot of hair. I make up for it!

We need the regulatory, technical and market structures to address this. We need an efficient market that procures the system support services, generation capacity and fuel sources needed to maintain stability. We need a network access framework that incentivises the development of microgrids and maximises the opportunities presented by DER. We need technical rules and operational protocols that facilitate visibility and control for system and network operators to support that system security and maximise power system efficiencies. Trials have demonstrated that DER technologies can deliver a range of benefits, but for their deployment at scale and to move beyond pilots there must be technical, market and regulatory reform. In particular, these technologies need to be visible and controllable. To this end, our committee recommended that the minister introduce regulatory changes to provide the network and system operators with appropriate levels of visibility and the authority to control in order to support the operational stability of the SWIS. The legislation before us today will implement that recommendation.

Chapter 6 of our report was the one that I enjoyed the most. It covered policy, market and regulatory reform. I worked heavily in those areas in my former professional life. As I have said, I looked after commercial operations on the Dampier to Bunbury natural gas pipeline and network access to that, and I also did a lot of work for Horizon Power around network access and utilising the electricity networks access code. The evidence that we received clearly identified a number of specific market and regulatory issues that have direct implications for DER, and they are addressed by this legislation. I go first to the general principles underpinning energy policy. We are all probably familiar with the Finkel review. It outlined four key outcomes that it intended to facilitate for the national electricity market, being increased security, future reliability, rewarding customers and lower emissions. The state government adopted the "Finkel 4" as they became known, and added two other objectives to underpin the energy transformation strategy. The first is to transition affected workers in the Collie region—the member for Collie—Preston would be very happy about that—and the second is to promote local jobs and growth. Clause 5 of this bill will insert the term "State electricity objective" into the Electricity Industry Act, enshrining the Finkel principles in legislation and introducing environmental considerations that will allow greenhouse gas emissions to be factored into decision-making alongside quality, safety, security, reliability and price.

A number of other core principles emerged from the evidence presented to the committee. Although it is not appropriate to incorporate them into this legislation, they are nonetheless important to note as we consider energy policy going forward. Firstly, the policy framework must be flexible and capable of adapting and encouraging technological change over time. Secondly, energy policy should provide clear direction and certainty for industry. That is important to attract the sort of capital to Western Australia that is required to build out the network in the ways that are needed. Thirdly, energy solutions should be selected on a technologically neutral and economically efficient and cost-effective basis. It is also important to maintain appropriate licensing frameworks and consumer protections. A bill is coming on shortly that we will discuss in more detail and will address those sorts of issues.

The private sector also has an important role to play at different points in the energy supply chain. Some form of wholesale energy pricing or tariff reform is also required to support a more efficient and cost-effective energy supply. Witnesses to the inquiry also emphasised the universal and essential nature of electricity supply, the many years of investment that Western Australians have made in the electricity system through both the payment of their electricity bills and state subsidies, and the need to ensure that the total benefits to the Western Australian community are considered, particularly when we start talking about the roles of the government trading enterprises. I think those broad principles provide a pretty solid foundation for the progression of energy reform in Western Australia, in addition to the four contained in this bill.

We spent quite a bit of time during our inquiry talking about the roles of the private sector and the public sector in the market and what everybody is doing; we looked at who is who in the zoo. We received quite a bit of evidence on overlap and ambiguity around the roles of various market actors, suggesting that the state government needs to provide greater clarity on the roles and relationships between the government trading enterprises, system and network operators, and existing and potential private sector market participants. With respect to the GTEs, under the Electricity Corporations Act, the three companies—Western Power, Synergy and Horizon—are empowered to operate and maintain a broad range of assets, potentially within the same class and footprint, to provide ancillary services, to provide services to one another under regulation and to act to develop commercial opportunities. They are important functions. But the committee found that there is considerable scope for duplication, overlap and competition between them in the development of microgrids and distributed energy technologies.

The important finding in the interim report—if people take nothing else out of that report, this is the important one—was that there is a distinct benefit in a single entity possessing a clear line of sight from the point of electron production through to consumption. A clear line of sight right the way along that value chain is invaluable, from the conversion of a gas molecule or harvesting of a solar ray through to its delivery through a network to a customer and talking to that customer about their consumption patterns and bills. That sends significant signals.

[Member's time extended.]

Ms J.J. SHAW: I could go all day on this!

The committee noted that Horizon Power, which is publicly owned, has that line of sight. I think it is the only utility left in Australia that has it. It is the only one! In fact, when I have travelled to the United States and other jurisdictions to speak to other energy market participants, they have been astonished that there is still a utility in the developed western world that has this and is publicly owned. It is important because it means that right the way along that value chain we can really capture as much value as possible and deliver it back to the people of Western Australia. The assets that they own are working hard to put downward pressure on price and costs for them. The committee's report states —

... EMC (Energy Made Clean) and Lendlease, who have established a private sector joint venture to develop microgrids, noted:

There are a number of regulatory barriers to the deployment of microgrids on the SWIS, due to idiosyncrasies of the legislative framework that established the GTEs. These include the statutory functions of the GTEs, the definition of the SWIS and its inclusion in subsidiary legislation, and associated instruments.

The Economic Regulation Authority (ERA) considered the definitional issues surrounding the GTEs to constitute the 'biggest impediment to any kind of inertia with regard to microgrids and stand-alone power systems'. The ERA observed that the legislative and regulatory framework:

is all predicated on having networks. Even with the Western Power pilots at the moment there is possibly a question of whether, under the *Electricity Corporations Act*, Western Power can actually supply a standalone system because it is virtually prevented by the act from being a generator or a retailer; it is simply a network operator. There is a serious question there, but it is a pilot and those systems that have been put in place so far are still connected to the grid, so technically they can be supplied from the grid. If they were to be a complete standalone system, there could well be some difficulties.

Former Horizon Power Managing Director, Mr Frank Tudor, argued that the lines of demarcation between the GTEs, put in place 15 years ago where microgrids were not considered, should be challenged, alongside the suitability of the regulatory, pricing and technology frameworks. He noted the degree of duplication and overlap between the GTEs, stating:

I think it does not make a lot of sense to duplicate capacity in your three utilities. We will learn the same mistakes and we will duplicate. The taxpayer will bear the cost of the duplicated capacity

That is obviously not an outcome that we want.

The committee looked at legislative reform and steps to provide role clarification, and observed that the current delineation is a function of the industry model that prevailed at the time but, as we have talked about, that model is rapidly evolving. The evidence to the committee suggested that we needed profound change to our regulatory frameworks.

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Our biggest utilities are owned by the state. It is timely and necessary to consider their roles and functions. I again quote Frank Tudor, who said —

If I was sitting as a simple shareholder with three utilities, I would have one focused on microgrid, I would have one focused on large-scale centralised thermal generation in the SWIS and also a significant job in actually retiring and remediation of power station sites.

He argued that the issue ultimately centred on Western Power’s role and that it was vital for the government to consider the “end state”. He said —

What does the end state look like? It does come down to the heart of the distribution business. It needs it to move from what it is currently doing to start to integrate planning for distributed energy. If you think about our past, it has all been sitting here, as a distribution operator seeing this stuff done to us. Now you want to get on the front foot and say, “How can we make it work for us?” Integrated planning becomes really critical.

This legislation will set a pathway for reform of market, technical and network access rules that will help us work towards that end state. The committee recommended that the Minister for Energy provide clear direction regarding roles and accountabilities to ensure that there is not an overlap or duplication of effort. The bill will support the delivery of that recommendation.

I am conscious of time, but I want to briefly touch on market rules, which I find absolutely fascinating.

Mr W.J. Johnston: You and me both.

Ms J.J. SHAW: I know, I know. I tell you what—I do need a life, so that is definitely another topic for another day and probably a glass of wine!

I think it is fair to say that the design of the wholesale electricity market—those systems or market frameworks—reflected the industry at the time. I was part of the AEMO’s rule change committee and the ERA’s consumer consultative committee as all of those frameworks were being set up. Now we know, it does need adaptation to accommodate DER. PricewaterhouseCoopers—a bit of a dirty word in some quarters at the moment, but nonetheless it makes interesting observations on some things. It observed —

Markets are changing rapidly. In virtually every part of the world, electricity is a regulated industry, sometimes regulated at multiple levels. In many instances, the current market designs won’t support the shift from a capacity-oriented system to a disaggregated, flexible power system without significant adaptations. However, because these designs need to evolve in the course of the transformation, we foresee the emergence of a number of new market models, which might appear alone or in combination within or across a region.

The benefit we have in Western Australia is that we are a nice, little, separated nugget and we can do what we like in our electricity market. We do not have to worry about the dysfunction in the NEM. We can get on with purposeful, meaningful market reform, and we are doing that.

Market reform is an extraordinarily complex process, but the pathway that the minister has outlined through this legislation provides a sensible and measured way forward to achieve reform. As we go through the reform process, the challenge will always be to strike a balance to ensure that efficient signals come through the market, but we avoid creating overly complex market structures that create barriers to participation, introduce additional costs or overheads or facilitate forms of market gaming by existing participants. We do not want big, hairy gorillas blocking out new, innovative energy technology companies from coming into this transformation space. We have to be conscious of that, because the WEM is shallower and smaller than the NEM.

The committee explored the approach to WEM reform with the chair of the Energy Transformation Taskforce, which emphasised that lowering costs for consumers should be any reform program’s ultimate aim. He outlined the importance of ensuring that the perfect does not become the enemy of the good. His evidence is well worth a read.

Mr W.J. Johnston: He’s now the chair of the ERA.

Ms J.J. SHAW: He is the chair of the ERA, and his words, hopefully, will not come back to haunt him! I am short on time, but I want to note a couple of other important aspects of the report. Finding 15 had two key points. Firstly, Western Australia’s physical and regulatory separation from the NEM is important, as I discussed. The other part of that finding—it was a tripartisan committee that found this—was that state ownership of government trading enterprises enables the government to pursue public policy objectives and facilitate the changes underway in the sector, by directing the corporation’s activities and its forms of participation in energy markets. That is an important point to punctuate this debate. That is not to say there is no role for the private sector; there is. That report went into how the GTEs and the private sector can work together.

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At the end of the day, the challenges presented by climate change and energy system transition are such that neither the public nor private sectors can face them alone. We simply have to work together. The sheer scale of the assets we need to build, the sheer volume of capital that we have to attract into Western Australia to build the assets, the skills, the workforces that we need mean we just have to work together. There is no alternative. We need to appreciate that this road will be long. This bill will consolidate a number of extremely complex instruments; it is constantly evolving, and we have come a very long way and need to change in such a short space of time. It is far more compressed than when the wholesale electricity market was originally being established.

The exercise will take time, so will therefore be presented in stages. As the minister outlined in his speech, stage one introduces the new objective, defines new terms and concepts and the new rules to deal with the relevant matters currently in subsidiary legislation. The stage two amendments will commence after several years, following review. That task will not be an easy one. It will require government and industry to work together, to take an informed, consultative and collaborative approach, which is the hallmark of the Cook Labor government. It is a consultative and collaborative government. My interactions with the sector at the moment indicate there is real appetite for reform, and a willingness to work together.

There are so many aspects of the transformation I want to discuss, looking forward to other bills, and I may well do a grievance on this. I want to recognise the work of the Energy Transformation Taskforce, Energy Policy WA, AEMO and the GTEs in supporting this process. There is the most incredible thought leadership in those agencies and they are navigating incredibly complex and tough operational environments. The things we are doing in WA are world leading, and their work will have a lasting impact.

I have just come back from Harvard University, where I did a program called Leading Green Growth. People were talking about the challenges in energy transition. When I told them what we were doing in WA, they were astonished. We are leading the world. In so many other policy areas we look at other experiences and we borrow other pieces of legislation, but there is no-one like us. No-one is as exposed. No-one has embarked on such an ambitious process of energy reform. It is world leading and fabulous people are doing that work. Our energy policy entities are brilliant and are supported by so many engaged and collaborative private sector professionals.

While I am talking about energy policy professionals who are guns and who have contributed, I want to mention Katharine McKenzie, a former adviser to Minister Johnston and Minister Ben Wyatt, and her marriage to Megan Allen couple of weekends ago. That was the energy industry event of the year! She made a remarkable contribution to reform and I want to acknowledge that. Finally, I want to acknowledge the Minister for Energy. His contribution to energy policy reform in WA is without peer. We have seen some reforming ministers, but I do not think we have seen one with such a grasp of what is a remarkably complex policy area and who is so brave in his willingness to engage with industry, tackling this and getting on with it. We do not have time to faff about with this stuff. I look forward to engaging in other debates on other aspects of energy transformation, and I look forward to seeing the other legislation on other parts of the transformation and discussing that.

MR R.S. LOVE (Moore — Leader of the Opposition) [5.11 pm]: I want to make a brief contribution on this discussion of the Electricity Industry Amendment (Alternative Electricity Services) Bill 2023.

Mr W.J. Johnston: No, it is the DER bill. That is not the bill.

Mr R.S. LOVE: Is it not the bill? What bill are we on then?

Mr W.J. Johnston: The DER bill.

Mr R.S. LOVE: It is the Electricity Industry Amendment (Distributed Energy Resources) Bill 2023. Sorry.

Mr W.J. Johnston: It is the Electricity Industry Amendment (Distributed Energy Resources) Bill.

Mr R.S. LOVE: It is the distributed energy resources bill, okay, not the other one. Sorry, wrong title, but same discussion.

Mr W.J. Johnston: Different topic, completely unrelated.

Mr R.S. LOVE: We heard an awful lot about microgrids in the report of the committee that the member for Swan Hills chaired. I remember Hon Terry Redman was also part of that committee, and a lot of that discussion was about the development of and the need for alternative systems and regulations to enable those microgrids and that type of development to occur. There was an earlier iteration of that in Kalbarri where there was a need to provide some reinforcement to power in that community. Quite a novel approach was taken at the time, and the then Minister for Energy, Hon Mike Nahan, ordered the commencement of the development of that microgrid. Going back in time, the reason for it was the very, very difficult circumstances of the local community in the midwest, which is not alone in having some very challenging power supply problems brought about by the climate, the very dispersed nature of the population and the distances that some of those communities are from the nearest substations and other major infrastructure.

Extract from Hansard

[ASSEMBLY — Tuesday, 10 October 2023]

p5185a-5207a

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In Kalbarri a battery was developed. The original proposal was for it to be harnessed with a solar farm, which would supply the needs of the town for pretty well all the available daylight hours if there was no power, and then there would be a little bit of power into the evening. That was cut back and there ended up being just a battery, and the reinforcement comes from a couple of wind turbines on the property where the battery is. I think there was some integration of the rooftop solar in the town into the battery, although I do not know how that is achieved because the battery is a very long way from town. In fact, the Minister for Energy opened the battery, and the former member for North West Central was invited along. Kalbarri transitioned out of the electorate of Moore and into North West Central in the 2021 election, so I did not get invited to the opening. In fact, the battery is in the electorate of Moore because it is on the property on which Kalbarri Eggs is located; that is the boundary. The battery is in my electorate. It was a very significant undertaking by the then government to commence the development of that battery. Reports from the community about the effect of the battery have been positive overall, although it does not help if there are very long, extended outages. There have been some good reports. When I was talking to people there fairly recently, I had reports that the wind tower at Kalbarri was not working for whatever reason and that it was in bits and had been that way for some time. I am not sure what is going on there, but there did not seem to be the generating capacity as part of that grid that was envisaged.

Of course, right through the electorate I represent there are many communities that for a variety of reasons have very troublesome power systems, and they rely upon a very extensive poles-and-wires network that has proven to be very unreliable over the years. I mentioned Kalbarri and its problems over the years, but other communities like Port Gregory and the town of Dongara and surrounds are affected. The little community of Springfield, just outside of Dongara, had the most appalling run in power supply of any community that I have come across. Part of the reason for that is the system, the number of poles, the distance and the climate. There has been a response from the government to install standalone power units in some areas, including some areas where damage had been done to the network during tropical cyclone Seroja. I acknowledge that the government has a very large program of replacing poles and wires with standalone power units in some of the communities such as Perenjori and surrounding farmland, also Latham and other areas. On their own they are not a panacea. They need to be run.

I know from one of my constituents that a unit that was put in place proved to have inadequate battery storage capacity, leading to frequent starting of the generator, which is positioned too close to a noise-sensitive premises, being a house, and so was a general nuisance. I understand progress has been made of late, and I look forward to the resolution of the issue. There has been undertaking to the customer that if they wish to at the end of the day, they can take a cash payout and find their own power solution. That is an interesting development. That would be a much higher financial payment than the minister discussed earlier on in this Parliament when we first talked about the standalone units and their replacement. It might have been in budget estimates at some point.

To give people a bit of an idea of the disbursement, in the Shire of Perenjori, which I have been talking about, where those standalone power units have been put, there is an average of 10 power poles and two kilometres of overhead wire per customer. That is quite an amount of network in place just to give power to customers in that area. That would be an area where other alternatives to the power supply would be required and indeed welcomed. The member for Swan Hills, in her contribution, discussed at some length those alternatives that followed on from the work of that committee. Another community that demonstrates the issues that many people in the electorate have is the town of Green Head, which has a lot of power outages. In fact, data from 2022 shows that the average time each customer in the Shire of Coorow had without power was about 57 hours, and that includes the town of Green Head, which is a community on the coast in the Shire of Coorow, about 250 kilometres north of Perth. Many of the people in the town are quite elderly and rely on mobile communications for a whole variety of things. A problem in the community is that the battery system for the Telstra tower has proven to be quite difficult. For some reason it is one of only one or two of its type anywhere, and getting replacement parts and its battery to work is proving to be very difficult. Over the years, it has had a lot of issues. I am aware of the ongoing problem of power supply reliability, and as a result the community continues to bear the brunt of a lot of power and telecommunications outages. We know that in some areas the old landline system, too, is now reliant upon power for fibre-optic cables et cetera. Those communities often have issues with communication due to the problems with electricity supply.

I wanted to highlight some of these matters because I was listening from my office and I heard the member for Swan Hills speak about the microgrid inquiry. I thought I would put on record that developments like that would be very welcome in many of the smaller communities that I represent that have a long history of power problems. Another classic case is Mullewa. It now has a generator, but there are often issues with it not starting at the right time. In the lead-up to the placement of the generator, there was a long period of very low reliability of power supply in the town, which I believe led to many people leaving town. It certainly led to businesses such as the local chemist giving up and leaving, and a decline in services in the community as well as the population. When we do not have reliable power, it is difficult for people to want to remain in those communities. The supply of power is very poor in many of the midwest towns that I represent, and this interferes with people's quality of life. It leads to many people

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deciding to leave. When they do not have power for three, four or five days, it is not very much fun for people to be in Mullewa on a 44-degree day and at six o'clock in the evening it is still 42 degrees and does not get much below 35 degrees during the night. This problem has increased during total fire bans and the like. The government has pledged to work through some of those things. I am not sure whether there has been any resolution that will assist those communities in the future. I hope so, because as summer approaches, I fear that once again we will see rounds of outages in those communities in the midwest, and anything that can be done to provide a better power source in that area would be very welcome.

MS C.M. TONKIN (Churchlands) [5.23 pm]: I rise in support of the Electricity Industry Amendment (Distributed Energy Resources) Bill 2023. This bill will amend the Electricity Industry Act 2004. In August last year, I produced a newsletter for our community, titled *Electrifying our community*, in which I outlined all sorts of tips and tricks to reduce household emissions through electrification. The Minister for Energy very kindly came along and spoke at a community event, and gave us all a masterclass on managing the bucking horse that is our very difficult to manage energy system that relies very heavily on uncontrolled sources and is largely managed by individual households. A lot of people in our community are very interested in electricity and climate action and in doing their part, and as much as that fits very nicely with the policy of the Minister for Environment, it creates other issues for the Minister for Energy.

In Canada, a country I consider my second home because I am married to a Canadian, the electricity providers are called the “Hydro” because a significant proportion of the country’s energy is hydro-electricity. Canada has lots of water suitable for generating this electricity, and hydro in Canada is an extremely stable energy source. Canada also relies on nuclear energy generation, and it is interesting to note that it is currently faced with the problem of having to make significant investments to deal with its ageing nuclear plants. This is a huge expense, but its federal government has resoundingly committed to send that through.

When I was in Canada recently, I had an intense discussion with a relative about the relative merits of nuclear energy. I met my Canadian husband when I was working at the International Atomic Energy Agency, so it is always assumed within the family that I have some grasp of the issues surrounding nuclear energy. My relative argued that nuclear is the cheapest form of energy on a life cycle cost basis. Nuclear power plants are very long lived, and he talked in terms of 50-year investments in nuclear power plants. He said that our government should be taking the longer term view and encourage investment in nuclear energy. Of course, I had to argue that there is no social licence to invest in nuclear energy. One of my good colleagues talked about where these nuclear plants might be placed around Western Australia, and I am quite sure that the member for Cottesloe would not want one on Cottesloe Beach. There is no social licence to invest in nuclear energy, and it would be a very difficult thing for any government to make a decision to go into it holus-bolus.

Dr D.J. Honey: I might say, member, by way of interjection, I did not discuss nuclear in my contribution, nor am I promoting it!

Ms C.M. TONKIN: Yes, I know. That is all right. The member for Cottesloe is just the only coastal member I can lay my eyes on right now.

There would be no social licence, and it would be very difficult for any government to go to the electorate with a policy of investing in nuclear energy. Nuclear energy is also very expensive, as my good colleague the member for South Perth outlined with the eye-watering figures per kilowatt hour compared with the cheap energies of solar and wind. Nuclear energy provides very stable base load energy, but it is as problematic as coal, because we cannot instantly ramp up and ramp down nuclear energy to complement the much cheaper intermittent sources of distributed energy in the form of wind or solar; therefore, nuclear energy will not work here. Canada has stable sources of energy in the form of hydro and nuclear; we do not have that. We have to ride the bucking horse. We are riding a bucking horse because of the extent of distributed energy sources, including rooftop solar, wind, and battery, including electric vehicle batteries. We all make decisions in our households about how we are going to manage our energy and we have all these wonderful affordable options at our disposal. Managing our electricity to maintain its stability and reliability is a huge challenge. The government is dealing with distributed energy resources that it does not control. We need this legislation to meet the challenges of managing and regulating an electricity industry that has changed enormously since the 2004 act was framed. This bill will provide a regulatory framework for the electricity sector that is flexible, responsive and future focused to support energy transformation in Western Australia.

I will not pretend to have anywhere near the intellectual capacity of my good colleagues, so I will not bore members with my rambblings and will stick to the script. This bill will improve the legislative and governance arrangements for the electricity sector in three ways. First, the amendments will deliver a unifying theme for the Electricity Industry Act 2004 through an overarching state electricity objective that will introduce environmental considerations to be factored into decision-making alongside price, security, reliability, quality of supply as well as safety. Second, the bill aims to greatly reduce the complexity, uncertainty and inefficiency that has resulted from an outdated regulatory

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framework by providing heads of power to incorporate disparate instruments into one consolidated fit-for-purpose set of rules that will govern the electricity system and market rules. Third, this bill seeks to facilitate the uptake of new clean power system technologies, such as those relating to the integration of rooftop solar and energy storage. These technologies are referred to as distributed energy resources and form part of the title of this bill.

Western Australia has been a world leader in the uptake of distributed energy resources, with rooftop solar adding about one megawatt of solar capacity a day, the equivalent of adding an additional power station each year. Most of our energy generation capacity actually sits on individual household roofs. The uptake of solar panels on roofs is considerable. In my electorate, the percentage of households with rooftop solar ranges from about 38 per cent in Woodlands down to about 14 per cent in the little slice of Scarborough that I call my own. That information is available from Western Power. It keeps track of what is going on, because it has to manage these distributed energy resources. Solar now contributes 38 per cent of the state's total electricity generating capacity. That is up from about 35 per cent when I last checked the figures last year. The uptake of solar, storage and electric vehicles has accelerated in Western Australia, and accommodating these unmanaged distributed energy resources has put pressure on the security and reliability of our power system. Visibility of the amount of distributed energy resources on the grid is crucial to inform system planning and maintain a reliable power system. This bill will not only make amendments to introduce heads of power to allow greater visibility of the location and operation of distributed energy resources, but also enable the management of uncontrolled distributed energy resources in situations that challenge the power system's security and reliability. These amendments will allow distributed energy resource technologies to be used to the advantage of both the power system and electricity consumers, enabling their continued uptake. This is why I consider this legislation to be very important and why I commend the bill to the house.

MR W.J. JOHNSTON (Cannington — Minister for Energy) [5.35 pm] — in reply: I understand that no-one else is seeking the call, so I will take the call and round out the debate on the Electricity Industry Amendment (Distributed Energy Resources) Bill 2023. I thank the members for Cottesloe, South Perth, Mount Lawley, Swan Hills, Churchlands and Moore for contributing to the debate. I thank the opposition for supporting the bill. The staff from Energy Policy WA would be very pleased to hear the strong endorsement of their work by the member for Cottesloe. I know how hard Energy Policy WA works, and how dedicated it is to the task of energy market reform.

I want to address a couple of things from the member for Moore, who talked about the Kalbarri microgrid. It is true that it was approved by the former government. Unfortunately, when we came to government, no action had been taken to implement the project. The entire project was done by the current Labor government of Western Australia after we came to government. In fact, nothing had been done to build the microgrid apart from putting out a press release. Whether there is a particular maintenance program for the wind turbine at the moment, these things happen and all equipment gets maintained. Obviously, I do not know the details of the maintenance schedule of any particular piece of hardware on the network. It is done in accordance with the maintenance schedules that corporations have for their equipment, and we require them to maintain the proper maintenance schedules. That means that the microgrid would be less viable at the moment than it would be if the wind turbine were operating, but of course it still has to be maintained at some time.

It is not quite the way that the member for Moore presented it. The big issue in Kalbarri is the big swing between school holidays and the rest of the year. If it were just a fishing village, it would have a relatively stable demand for electricity and therefore the grid to that spot would be relatively vanilla, but because it has a very large swing population during school holidays, when people from Perth go to Kalbarri, it has a very strange demand profile. The problem is that we cannot just expand the distribution line to that site because the cost would be so high. It would push up the cost of delivering power to that community and we would not be able to recover those costs because of the swing in demand. The costs are fixed and the demand rises and falls. That is why a microgrid was a viable option in that town. It would allow us to not do other infrastructure, and the savings on infrastructure would contribute to the cost of the microgrid. I make it clear: the microgrid is not a financially viable investment. It would be done because it is a trial, but over time we expect the cost of microgrids to come down.

The member for Moore ran through a variety of communities and some of the challenges that those communities have. I know exactly how inconvenient it is to be without power. In the modern world we now use a lot more electricity than we used to. A lot more equipment that we use needs electricity; therefore, we have greater challenges when we are without power, but of course that higher demand drives the challenges of managing the system. Just to give an example, I think Springfield was one of the places that was raised by the member. I am pretty sure Springfield is the right one. There is a cement batching plant at the end of the connector; it is the end of the line that runs to that community. It has an industrial profile for its load compared with the residential and farming properties, and because it is on the end of the line, it makes it more difficult to reconnect the line. When there is an outage on that line, Western Power disconnects the cement batching plant—I am pretty sure Springfield is the one—to more rapidly reconnect the other users on the line. Due to the changes we made following the Shepherd inquiry, we can provide a more granular understanding of the actual performance on each particular feeder. We are the only place

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probably in the world that does this because that then drives the investment. The previous regulatory arrangement awarded Western Power based on averages, but averages hide individual performance. Over the last two years we have introduced changes so that we can invest in improvements that will impact those individuals, even if they do not have a massive impact on their regulatory obligations.

In the end, the member for Moore is talking about the impacts of climate change. He talks about the need to run air conditioners. He and I are basically the same age. When we were kids, we did not have air conditioners. When it got to 40 degrees, we played in the shade. Of course, that does not happen in the modern world. One reason for that is because it is hotter now because of climate change, and the member's community is ground zero in Western Australia for climate change. That is why we are so disappointed that the Nationals WA do not join the Labor government in supporting action on climate change. Until last week, the member for Moore was the shadow Minister for Climate Action, yet he had never asked a single question of the Minister for Climate Action. I really invite the member for Moore to represent the interests of his community. Indeed, he talks about total fire bans. Yes, we have changed practices following the Shepherd inquiry. We have changed the way that we reenergise lines on days of high fire danger, but of course there are risks with that. The member for Roe has raised challenges that were caused by a bushfire started by a transmission line. There are never simple solutions and these are the challenges of climate change.

The member for Cottesloe raised the question about regulating household energy consumption. Regulating the use of electricity as well as the production of electricity is a modern way of doing energy. We have run the trial in the south-eastern suburbs called Project Symphony. It is a partnership between ARENA, Synergy, Western Power and Energy Policy WA to test the way we manage electricity consumption and production. It has proved to be a great success. Synergy has dispatched Project Symphony in response to market calls in February this year, I think—I hope I have got the right month. We are now utilising these technologies, and managing distributed energy resources—the electricity equipment in our homes. That is an important part of the future. Of course, we are not going to reach in and do it compulsorily. During the former government many years ago, a trial called Perth Solar City was run in Bassendean or Bayswater and cycling air conditioners was a part of that. Of course, we could get a benefit out of that by simply having the air conditioner cycle, or alternatively, like they do in Spain, get people to run the air conditioner on 24 degrees. That will reduce consumption, save people money and help the electricity system at the same time. This legislation is not about regulating people's use of electricity, but it allows the people who participate in virtual power plants to participate in the market, and whether it is Synergy or someone else, we need to have these flexible rules to take account of DER. The most common DER is solar panels. We have put in emergency solar management. Western Power has not yet had to call on it, but we changed the specifications. An inverter now has to meet certain modern standards so that we can close the inverter when the power system would otherwise become unstable. This is one of these unusual things. If we can disrupt a person's solar panel so that it does not work for four hours, more people will be able to have solar panels. We cannot overwhelm the grid. We cannot have more electricity than that which is being used. If we can switch off a solar panel on one day for four hours, more people can have solar panels. There are criticisms of emergency solar management, but it is a critical element in maximising the numbers, which was what the member for Swan Hills was talking about in part of her contribution. Now we can go even further than that through virtual power plants and engaging with households.

In the case of electric vehicles, the actual total consumption of electricity is not the issue. It is the time and the location, and Western Power and Energy Policy WA are making sure that we are ready. We know that electric cars are coming so we have to make sure that the infrastructure is in place. As Minister for Mines and Petroleum, I personally met with Ford in the United States, Mercedes-Benz and BMW in Germany and Hyundai in Korea. They have all told me that their engines are moving to 100 per cent electric or hydrogen and the internal combustion engine is on the way out. This is not about ideology of choice. In the future, internal combustion engine vehicles will not be made anywhere in the world. Given that we do not have a car manufacturing industry in Western Australia, we take what we are sold, and what we will be sold in the future is electric vehicles; therefore, we have to have a system that works. This legislation is part of giving us the authorities that we need to manage those changes. That is why it is quite important.

There has been a discussion about privatisation. When I was shadow minister, all these so-called experts were saying that I had to sell Western Power before it did not have any value. I kept asking them, "If Western Power is not going to have a future value, why is every merchant bank in the world telling people to pay 1.5 times the regulated asset base?" It did not make any sense. It meant that people were saying that every merchant banker in the world was stupid because they were recommending to buy an asset that was going to lose value. It did not make any sense. The network is actually the critical element in the change in the way that we run electricity. The legislation that we previously passed and the Electricity Industry Amendment (Alternative Electricity Services) Bill 2023 that will be debated later is all about making sure that we will have the proper framework for managing the two parts of Western Power: the distribution bit that connects to our house and the high voltage bit that takes the wholesale electricity across long distances. They are separate but important elements. One of the elements that came out of

the energy transformation strategy is the need to have a clear understanding of how the distribution system works. Again, these are powers that we are giving ourselves.

Everyone wants to talk about nuclear energy. I will make a couple of points about nuclear energy. I know that the Nationals and the Liberal Party are now saying it is the pathway to fix our transition to low emissions.

Dr D.J. Honey: We are not saying that at a state level, minister, I can assure you.

Mr W.J. JOHNSTON: I have heard the member's leader say it a number of times. I have heard the Leader of the Nationals WA say it a number of times on television. I am happy to get the quotes for the member another time. Let me make it clear. Even if we wanted to build a nuclear power station in Australia, it would take 20 years to actually do it. What do we do with electricity for the next 20 years? This crisis has been created by the change in the structure of the system. As the member for South Perth absolutely correctly pointed out, we used to have a simple system—big power stations, lots of wires, send a bill. That is not the way the system works anymore. It is not just that the system is so much more peaky now. On the public holiday in October that I talked about with the member for Swan Hills, when we got down to 585 megawatts of underlying demand in the system because the rest was being provided by solar panels off people's roofs, parts of the distribution network would have been pushing electricity back into the high voltage system, completely reversing the flow of electrons. How will we manage the next 20 years if we do not change now? What are we going to do over the next 20 years?

I refer to the idea that we can use small modular reactors. I was just reading some stuff in *The Australian Financial Review* before I gave this speech. People say that small modular nuclear reactors will be built in a factory. There is not a single factory anywhere in the world that builds small nuclear reactors!

Dr D.J. Honey: That's right; they don't exist.

Mr W.J. JOHNSTON: There are none in the world. The first one is being built in North America, I think in Montana, and the subsidy—not the cost; just the subsidy—from the government is \$3 billion for a 300-megawatt power station. As the member for Churchlands pointed out, we get nearly that much energy from the solar panels that are put up every year without any cost to the government because they are paid for by consumers, not by centralised market forces. I say that in 20 years' time, if small nuclear reactors are viable somewhere else in the world, come and talk to me. In the meantime, it is speculation on speculation. The irony is that at the moment we use coal and natural gas that is supplied domestically and are moving to a higher renewable energy content, which is also domestic fuel, but they want to import nuclear fuel rods from somewhere else in the world, because nobody in Australia makes nuclear fuel rods. We cannot use uranium yellowcake from a mine in South Australia in a nuclear power station. It is the most bizarre thing I have ever heard! The reason that no country in a free market economy is building nuclear power stations is because no merchant banker will fund them. It is not the green movement that stops nuclear power stations; it is merchant bankers. All this comment in the media is ridiculous, because the people who talk about it do not want to take any action. They say it is too hard; it is not needed. It is ridiculous! Of course, nuclear power stations have all the underlying flexibility problems that the coal stations have. It is exactly the stuff highlighted by the member for South Perth in his commentary. They do not respond in the flexible way that we need to work with renewables.

I want to see as much action as we can here in Western Australia to reduce our carbon emissions. We need that to happen. One way we can do that is to move away from coal-fired power stations. But even if that was not an imperative, we would still have to close the coal-fired power stations, because they cannot work in the current market. They are losing money. One reason Synergy cannot make money and we are having to write down its value is that coal-fired power stations cannot operate in the modern market. People such as Paul Murray write in the newspapers; he writes stuff because he does not know what he is talking about. Then we have people like Mark Chatfield. I make it clear: Mark Chatfield was not guilty of insider trading because, as he said, he had not done any due diligence on the companies whose shares he was buying. I am not accusing him of any crime, because he was found not guilty of the charge of insider trading. But, as his defence pointed out, he did not know that the company in which he was buying shares owned a company that was dealing with the company he worked for. I understand that he did not do that. I make the point: he did not do due diligence on that share purchase, yet I am supposed to listen to him on the due diligence of running the electricity system. For crying out loud! There is a reason he is no longer a director of Synergy; it is not by accident. He can sit with a laptop on his knees on a cold winter night doing some spreadsheets to try to pretend that is a model of how the electricity system in Western Australia works, but it is not a model of how the electricity system in Western Australia works. The very staff pointed out by the member for Cottesloe are the people who are giving us advice. It is not like I just walk in here one day and make a decision on my own. The 120-odd people who work for Energy Policy WA, all the people at the Australian Energy Market Operator, and then the commercial people at Synergy, Western Power and Horizon give advice to us, and all that advice is reviewed by Treasury before we make a decision. There are no accidents in the way we move here. Again, as the member for Swan Hills highlighted, do not let perfection be the enemy of good.

Extract from Hansard

[ASSEMBLY — Tuesday, 10 October 2023]

p5185a-5207a

Mr Geoff Baker; Mr Simon Millman; Ms Jessica Shaw; Mr Shane Love; Ms Christine Tonkin; Mr Bill Johnston;
Dr David Honey

I became the Minister for Energy on 13 December 2018—almost five years ago. The point I keep making is we know we have to keep moving on. Let us get some stuff done; then we can do some more things later. It is about structured change. This legislation is not the end of reform. This is the next step along our reform program.

I make it clear that the government of Western Australia is a very strong supporter of distributive energy resources—that is, rooftop solar, increasing the number of batteries and electric vehicles, and flexible load in people’s houses such as cycling of air conditioners and external management of pool pumps. These are all sensible things that can be done, and it is all part of the DER management that was so strongly recommended by both the member for Swan Hills’ report and the energy transformation strategy. Of course, hundreds and hundreds of pages of rules and regulations sit underneath the existing legislation. The new legislation will allow a much more coordinated structure for managing those issues going forward to bring the technical rules created by Western Power and the market rules created here all together into a single document over time. That is going to take a long time to implement, and that is why there is such a long process for the bill’s final full implementation.

I mention demand-side management. Demand-side management is an important element of all modern electricity systems around the world. Under demand-side management, for certain short periods, users of electricity reduce their consumption. This is presented in some media circles as if we do not have enough power for industry. That is not what it is about. If we think about the profile of demand, there is a particular moment in time that is the peak. When we count the up and the down, that peak lasts for about an hour, maybe four hours maximum, and it occurs on a specific day. There is actually a number for a specific day that is the peak over a year. To have the electricity available to dispatch at that time, we have to have power stations equal to that moment, but because that moment happens only once in the entire year, we can see how expensive it is. Nobody builds something if they are not going to make money out of it. On the east coast, which is an energy-only market, they get \$17 000 a megawatt hour for that peak moment. Here in Western Australia, we have a different system. We pay generators to be available. We call that a capacity market. It is a much more modern approach. It supports high renewable energy systems much more easily than the alternative. Nonetheless, whatever that peak is, at that moment in time, we have to have enough energy available. We can see that it is actually a lot cheaper to go to a user of electricity and say, “Look, can you do a plant shutdown on 3 January, and we’ll pay you. You’re going to have to do a plant shutdown some day of the year. If you do it on 3 January, we will pay you for that. You have to do your plant maintenance. Do it on that day; we will give you some money.” Then both sides win, because we do not have to build an extra power station and there is no inconvenience for the business. We do not make people do this; this is a choice.

Demand-side management is a modern tool for electricity systems. That is why it is now available in the national electricity market and why it is used in the United Kingdom and the United States. A very small percentage of our system in Western Australia accommodates demand-side management—it is about two per cent, or about 150 megawatts out of 4 500. In one part of the United States, demand-side management availability is over 10 per cent of its market. We are actually a very small user of demand-side management. It is cheaper, it produces less carbon emissions and it is more efficient, so I do not understand why there is a war by some media against demand-side management. It does not make sense. It does not add up mathematically. I am very pleased that *The Australian Financial Review* has run a couple of articles in the last couple of weeks in support of demand-side management, because it is an incredibly important element moving forward.

We had a major market reform very recently. On 1 October this year, we had the new market start from the reforms that were introduced three years ago. Of course, we had hoped to get the market to start last year, but we agreed with the Australian Energy Market Operator to delay the market start for a year to make sure that it had enough time to do all the work that it needed to do. The market started on Sunday, 1 October. We did not put out a media release, because then we would have heard, “Oh my God; are things going to go wrong?” It was about the market, not the dispatch of electricity. Even if the market had had a problem, it would not have affected the amount of electricity being provided. It was about the economic underpinnings of the system. We never spoke about it in public. It has gone very smoothly. We have moved from 30-minute settlements to five-minute settlements. Why is that important? It is important because it eliminates the opportunity for some generators to game the market to have a higher price and it ensures that there is more opportunity for the dispatch of renewable energy, because if someone is bidding for only five minutes, they are more confident of the average output of their renewable energy generator. It is an important step forward in supporting good outcomes for wholesale electricity users and, at the same time, making the market more flexible and dynamic to take account of new variable renewable energy projects like wind farms, solar farms and rooftop solar systems.

The next thing that gets discussed in the media a bit is how much needs to be spent on new investment for both the increased volume of electricity that is going to be traded and the transmission infrastructure that is going to be used to move that electricity around. I make this point: the money to pay for that infrastructure comes from the higher volumes of electricity. If the amount of electricity that is used doubles, the revenue also doubles because twice as much electricity is being paid for. Again, I am not quite sure why people do not understand that simple fact. If the

amount of electricity that is used increases, the revenue that is gained also automatically increases, even without increasing the cost of electricity. By mathematics, the income for the system is being increased. Interestingly, because many costs in the network are fixed, including the costs of the Australian Energy Market Operator and the share that we take for other administrative mechanisms, the costs go down because they are spread over a larger volume of electricity. That is why it is well understood around the world that the larger the grid, the lower the marginal costs of new generation. It is good news that we are going to have this new investment in the system. Who is going to pay? The people who use and benefit from the new energy are going to pay for it, which is obvious.

People get confused about what Synergy is doing by replacing its coal-fired power stations and what the market is doing to provide the electricity that is needed. Synergy is providing its customers with decarbonised energy—that is an outcome we are trying to get to—because a decarbonised Synergy is a more secure business platform for the government of Western Australia, which owns Synergy. The Australian Energy Market Operator, which operates the south west interconnected system, manages power stations or other resources joining the system. People ask whether the government is abdicating its responsibility. No. That is the purpose that the market was set in place for. When the market was created in 2004, that is what the system was. That is what the government said. At that time, it was the Independent Market Operator, and now it is AEMO, but one way or another, there was always a market operator that ran the capacity market and managed that side of things.

Basically, for about 10 years, we have had relatively flat demand for electricity, and now we have got to this point. If we look backwards from the *Electricity statement of opportunities* that is published each year by AEMO, because the government requires it to do so under legislation, we can see that the prediction for the future has changed. The reason that we need more power in the future is not that we are closing coal-fired power stations; it is that the demand for electricity is going up. In fact, according to Energy Policy WA’s highly detailed planning for the SWIS demand assessment, we expect electricity demand to more than triple over the next 20 years. Under the Australian Energy Market Operator’s separate and independent modelling, which is over 10 years, it expects a 50 per cent increase in demand over the next 10 years. Of course, the private sector will fill that gap, because it is the private sector that requires the electrons. Do people think that the government of Western Australia should pay for costs that are going to benefit multibillion-dollar multinational corporations? We have never done that in Western Australia in the past, and it would not be a sensible pathway forward. What we do—this legislation is an important part of that—is create the framework and then the private sector, which is a free market, executes its investments to match the demand that is coming.

Through Synergy, we are committed to supplying the electricity that is needed by the families and ordinary people of Western Australia who are connected to the south west interconnected system or, alternatively, if they are off the SWIS, through Horizon. Of course, we have some commercial customers, but the largest future demand is from industry. Industry will sort that out itself, because that is what it does every day. People forget that Synergy has 40 per cent of the market, but the private sector has 60 per cent of the market. The private sector already provides 60 per cent of the electrons used in the SWIS in Western Australia, and we think that that 60 per cent will increase over time. If Synergy basically stays the same size but the total volume of electricity over the next 10 years goes up by 50 per cent, that means that the share that Synergy has of the market will fall. That is mathematics. Everybody understands that, so I do not understand why it would even be considered controversial. I do not understand why the Liberals, who always tell us that they support the private sector, would have a problem with that.

The final thing that I am going to say is that sometimes I get cranky when people say that we do not have a plan. They obviously have not read the energy transformation strategy, our *Distributed energy resources roadmap*, our *Electric vehicle action plan*, or our *SWIS demand assessment*. They obviously do not read the Australian Energy Market Operator’s annual *Electricity statement of opportunities*. These are the plans. We have the *Whole of system plan*. We have all these documents. We have done the Pilbara industry round table to start the development of an integrated plan in the Pilbara. We actually do have a plan and we are working to it.

People talk about renewable energy targets. We have an 82 per cent renewable energy target. The commonwealth government has set it. It has said that it wants all the energy markets in Australia to be 82 per cent renewable. We are not paying the private sector. Of course not. Why would we give taxpayers’ money to the private sector for it to do something it is going to do anyway? When I first got the job, people would ask me whether I would pay them to build a wind farm and I would say, “But don’t you have customers for that?” and they would say, “Oh, yes.” I cannot tell members the names of the people who come to see me because they are from corporations that have shareholders, but they say to me, “We have a wind farm that is this big and we want to make it that big; these are the steps we need you to help us with.” “Yes; okay.” Gigawatts of renewable energy are coming into the south west interconnected system, and that is before we talk about what is proposed for the Australian renewable energy hub and any other global scale projects that are gigawatt-scale. The pilot plant for the POSCO green steel project in the Pilbara is 1.5 gigawatts. That is the pilot plant! The Tasmanian government’s green hydrogen plant will be 1.5 gigawatts at full build, so members can see that the scale difference in Western Australia is amazing. The

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government is making sure that it works with the private sector to deliver what it needs. People talk about the time line for transmission infrastructure. Yes, that is a challenge because there are so many projects going on around the world and we have to work very hard to make sure that it is delivered. Again, because we have done the south west interconnected system demand assessment and have worked with the Pilbara participants, we have a plan to deliver the transmission infrastructure. We actually have the plans in place.

I was very amused last week by the 7.30 report about Western Australia, firstly because the name “Steve Thomas, opposition spokesperson” was attached to my picture, which is the worst insult I have ever had!

Mr R.R. Whitby: Steve Thomas got a good deal.

Mr W.J. JOHNSTON: Yes, he got complimented. The story started with somebody saying that they were worried there was not enough natural gas for the south west interconnected system and ended with Hon Dr Brad Pettitt saying that we had too much natural gas in the south west interconnected system. That was in the one news report, top and tail. Pick a side and stick with it! Again, there is a bit of confusion between the domestic reservation policy, which is about industrial use of natural gas—most natural gas in Western Australia does not make electricity in the south west interconnected system—compared with the natural gas that is needed for the SWIS. Our expectation and our plan—what is written in reports, which people should read rather than comment on—is that we will go from a system that is about a third coal, a third natural gas and a third renewables to a system that is 20 per cent natural gas and 80 per cent renewables. Of course, if the total demand for electricity triples, we will still need quite a lot of natural gas. We have set out our target and our plan and how to achieve it, and we have the market rules in place. This reform is a very important step forward on that process.

Question put and passed.

Bill read a second time.

[Leave denied to proceed forthwith to third reading.]

Consideration in Detail

Clause 1: Short title —

Dr D.J. HONEY: There is a daunting number of files on the table, and I am afraid that my questions may not go anywhere near doing justice to them! It will not be an excoriating consideration in detail stage; I have just a couple of matters to go through. There may be an appropriate clause in the bill to go to, but one issue on which I could not get a clear view was the role of the Australian Energy Market Operator within this framework. Rather than me trying to eke that out through the bill, could the minister please explain whether that role is changing or staying the same, and how that will fit within this regulatory framework?

Mr W.J. JOHNSTON: The decision to move from the independent market operator to the Australian Energy Market Operator was made by Hon Dr Mike Nahan when he was the Minister for Energy. I was the shadow minister at the time. I did not object to that as I did not see any particular reason that it was a bad idea. I do not know what motivated him to do that. It was interesting because he had done a big energy market review and it had not been recommended in that. Nonetheless, he still made that decision. Funnily enough, that is the only thing from the EMR that survived, which is amusing. There will be no specific change to AEMO’s role. There is a distribution operator, but that will be Western Power. It is a separate function. At the moment, there is no distribution-level manager in the system; there is only the transmission-level manager in AEMO. AEMO is not going to be the distribution-level manager, but the role will be clearly specified. Again, we came to that view out of the energy transformation strategy, but it was also recommended by Jess Shaw’s inquiry.

Clause put and passed.

Clauses 2 and 3 put and passed.

Clause 4: Section 3 amended —

Dr D.J. HONEY: Clause 4 will insert the following definition —

Coordinator means the Coordinator of Energy referred to in the *Energy Coordination Act 1994* section 4;

Can the minister explain the function of that role in a little more detail?

Mr W.J. JOHNSTON: The Coordinator of Energy is an existing role. The senior officer of Energy Policy WA is the Coordinator of Energy. The Energy Coordination Act 1994 provides a set of powers, including emergency powers and that type of thing. What we are doing here is giving the coordinator a regulatory role. When I say “regulatory”, I do not mean regulations, which are instruments of the executive endorsed by Parliament; I am talking about the rules and other instruments that sit under it. We are reforming the way in which those activities will take place to give the Coordinator of Energy a specific role. Because the Coordinator of Energy is effectively the head

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of the policy unit for government, that person has a very broad understanding of energy matters and is not conflicted. Therefore, they are an appropriate person to be given additional powers to manage the system. That will allow us to be more flexible and nimble in responding to changes. One point that we made when the ETS was set up when I first became minister was that we were solving for the problems that we knew, but there were also problems that we did not know so we would solve for them, too.

Dr D.J. HONEY: I refer to subclause (3) on page 5 and the change in the definition of “distribution system” from “66 kV or higher” to “that are less than the prescribed voltage”. Why did that amendment come about?

Mr W.J. JOHNSTON: Thank you for the question. It is just to give more flexibility. At the moment, a number of provisions are hard-coded in legislation that are not hard-coded in other jurisdictions. This way, we will have more flexibility to respond to changed circumstances. This is quite a technical matter. It is not a market matter so it is about making sure we can have the flexibility we need to manage the system as it exists at a particular moment in time.

Clause put and passed.

Clause 5: Section 3A inserted —

Dr D.J. HONEY: Clause 5 includes the introduction of the state electricity objective. I think it was very well explained why the government wants the various sections but will bringing the environment in potentially provide a basis for third-party challenge of decisions of government, or is it purely an internal matter to guide the organisation?

Mr W.J. JOHNSTON: It will not change the likelihood of a challenge because there is already an objective; we are just introducing a new one. There is no belief that the current objective has led to any legal challenges or could lead to legal challenges. Given that we already have one and all we are doing is updating it to make it more contemporary and modern, it is therefore not considered a matter that is going to be tried in that way. That is not the purpose here. As an example, at the moment there is a provision about not discriminating between technologies. It was put in the original legislation to facilitate renewable energy, but some regulatory arms of government interpreted it to prevent favouring renewable energy. This clause will give a much more explicit set of powers, remembering we have already done it in the access code, which is managed through Western Power. This is exactly the same wording that has been done nationally. We are making it as consistent as possible so it is clear that driving an environmental outcome is part of what we are trying to achieve.

Clause put and passed.

Clauses 6 to 9 put and passed.

Clause 10: Section 105 amended —

Dr D.J. HONEY: Clause 10 deals with the inclusion the minister was talking about before about standalone power systems and the like. This is a question that has been put to me by others: will customers be able to completely opt out of the network within a suburban area where there is a power line and underground power? If they were going to go standalone, would it have to be part of a Synergy or Western Power system?

Mr W.J. JOHNSTON: It is a very good question. Former minister Dr Nahan was totally opposed to people opting out. His view was that if people opted out but there was a pole, they had to pay, which is what happens with the Water Corporation. That is not my view. If people want to opt out, they can. If we think about it, let me say in round numbers that a standalone power system costs \$250 000. To actually be independent of the network is going to be so expensive that there is no way they would be better off. People are always going to be better off to connect. People get confused about these battery packs that might cost \$20 000 for an in-home battery but that is only five megawatt-hours, which is one hour and 15 minutes of power for the average house. It is not enough to be disconnected. Also, what will they do on the third rainy day? Even on a cloudy day they will still get energy out of their solar panel, but will they also have a diesel genset sitting there ready to go?

Dr D.J. Honey: The neighbours will love that!

Mr W.J. JOHNSTON: The neighbours will look forward to it, yes. There are also safety risks of having all the diesel stored around people’s houses. If people want to do it, they are absolutely welcome to do so. We are not trying to say they are not allowed to, but when people do the real numbers, they will find that a grid is always cheaper than not connecting.

For people in regional Western Australia, even in the wheatbelt, a very large subsidy goes from metropolitan electricity users to country electricity users, which we build in deliberately because we want everybody to pay the same amount. We do not want to have people pay their actual costs. There is a specific town on the Horizon Power network where it costs \$2.70 per kilowatt hour. That is nearly 10 times the price that we sell the electricity to the consumer.

Clause put and passed.

Clauses 11 to 23 put and passed.

Clause 24: Section 123 amended —

Dr D.J. HONEY: At the top of page 16, clause 24(6) makes a broad statement. It states —

- (5) The regulations, and the electricity system and market rules may apply, adopt or incorporate, with or without modification, material contained in any other document or writing as in effect or existing —

This seems to be a very broad catch-all statement. I want clarification of the context of that catch-all. It looks like a safety measure, but I wonder what the scope is. Covering “any other document or writing as in effect or existing” sort of covers the entirety of human literature. I am not trying to be cute, but it seems to be extremely broad.

Mr W.J. JOHNSTON: There is a specific piece of literature that we are contemplating and that is the standards. At the moment, there are a whole range of Australian standards about lots of different things. In the future, there may be new standards about other things. That is what that intends to provide. Do not forget that at the moment we have the market rules and the technical rules and we are bringing them all together. Lots of different bits and pieces will come together. There will be a process for making these. Sometimes the minister will use their capricious powers but only in an agreed manner because there will be a set of procedures for how the rules and standards are set. An example would be the technical standards for inverters. A couple of years ago we changed the standard so that inverters had to be externally controllable. That is an example of an update that was done through standards because we said that inverters had to meet the standards. That is the sort of thing we are talking about.

Clause put and passed.

Clause 25: Section 124 amended —

Dr D.J. HONEY: At the top of page 18, clause 25(4) refers to the hierarchy if there was any inconsistency between the regulations and the rules, then the regulations prevail. I want to understand the rationale for the hierarchy of those two.

Mr W.J. JOHNSTON: This is not unusual. We have very extensive technical and other rules but nonetheless, if there is an inconsistency, regulations, which are a disallowable instrument by Parliament, will prevail. That will effectively prevent what some members of the Liberal Party do not like—that is, an extra-parliamentary process. Parliamentary processes are a protection; this will protect the rights of the Parliament over the rights of the executive.

Clause put and passed.

Clause 26: Part 9 Divisions 3 to 7 inserted —

Dr D.J. HONEY: I refer to page 19 and proposed section 124C. It reads —

The regulations may confer power on a network service provider or another person —

Does that direct the user or does that direct a supplier? It was unclear when I read it what it means to direct a person. Is it any person or is it someone who is a supplier within the network?

Mr W.J. JOHNSTON: It is any person. The network service provider is Western Power or Horizon Power or BHP in the town that it provides it et cetera. Whoever is an NSP can give a direction, but there is already an existing power to give a direction. It will not create something new.

Dr D.J. Honey: It could be a customer.

Mr W.J. JOHNSTON: It could be. Remember, one of the objectives is safety. There has to be a power to direct somebody to do something to prevent danger. One of the complaints that sometimes comes to my desk is when Western Power goes to install a new meter, they find there is a defect on the customer side of the system, and they say, “Well, we’re not going to connect you until you fix that.” People then say, “Western Power cut me off.” Of course, because it was dangerous and we do not want danger. Alternatively, it might be that Western Power is directing a market participant that has failed. I will give the member an example of that. When there was the under-frequency load shedding event on 10 January 2020, we found that there were generators that were not meeting their performance standards. This would be a power that could be used in that example, where performance standards are agreed. They are completely flexible, are agreed that the time the generator connects, but we found that a number of generators were not meeting what they had promised to do. This would be a power to have the NSP direct them to do that.

Dr D.J. HONEY: Over the page on page 20, line 5 states the regulations may provide for an application to the State Administrative Tribunal. Would customers be able to appeal to SAT for such a direction?

Mr W.J. JOHNSTON: Yes. The answer is yes to the formal question you have asked. This is a new provision because the current powers are not subject to review by SAT. I want to point out that this will not give the NSP

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power to do something that it does not already have the power to do. It cannot invent something for somebody to do; it has to be some existing or clearly defined responsibility that they can direct. They cannot just walk in and say, “You have to do X.” It is not capricious power. It is a strong power, but within its existing responsibilities.

Dr D.J. HONEY: On page 21, I took 124E to be the core of the ability around demand management. The minister explained a bit of that in his second reading speech, but can he describe the mechanism that is intended to be used to control demand? I think he said that this will not be a direction. There will be demand management, but it is going to be on a voluntary capacity.

Mr W.J. JOHNSTON: This is not about demand-side management, because demand-side management is generally going to be at the network or transmission level, not at the distribution level. This is about the management of the distribution system. Again, it facilitates the operation. There might be a virtual power plant, and the operator agrees contractually to allow a third party to control their battery—just as an example. There is a particular company that advertises on TV; it says, “Let us install a battery and then let us control it.” This is the facilitation clause, which allows the network service provider to facilitate the action. Many people get very excited about peer-to-peer electricity. I do not personally think it makes sense, because I cannot imagine a person like the member who had a busy occupation before he came to Parliament sitting in his office looking at his phone about his electricity consumption, but there is clearly a business case for people to move into that third party management zone. This will facilitate those new business models.

Dr D.J. HONEY: I was initially concerned about data security, but on page 25 it is dealt with thoroughly. On page 28, proposed section 124K(1) states —

Criminal proceedings ... do not lie against a person by reason only that the person has contravened a provision of the electricity system and market rules.

Can the minister explain what that actually means? We need a lawyer to interpret it.

Mr W.J. JOHNSTON: The member said that we need a lawyer to interpret it. Well, it is a law, so it is not surprising that a lawyer needs to interpret it. As I understand, just because someone has contravened a civil provision, that in itself is not evidence that a criminal penalty will apply. A criminal charge would have to meet other standards, and civil proceedings are not evidence of a breach of criminal law.

Clause put and passed.

Clauses 27 to 33 put and passed.

Clause 34: Section 128 Amended —

The ACTING SPEAKER: Minister—sorry, member for Cottesloe.

Dr D.J. HONEY: I was given the title of “Minister for Cottesloe” once.

The ACTING SPEAKER: No, you were not!

Dr D.J. HONEY: I thought being the minister for Cottesloe would be a good gig!

Clause 34 is about the three-year review and reviews after not more than three years. I am interested in how that was determined and how it sits with the AEMO estimates—for example, the five-year look ahead and the like.

Mr W.J. JOHNSTON: That is a good question. We talked earlier about the definition of coordinator being the senior public servant who provides advice to government on energy matters. I said that a range of duties were being brought together under the coordinator to provide more flexibility and responsiveness.

At the moment, the Economic Regulation Authority does the triennial review of the wholesale electricity market operations. We are now moving that responsibility to the coordinator. The view is that the current system is too separated. The ERA is an economic regulator providing advice to government on the operation of the economic sides of the market. That can sometimes be disconnected from the technical and operational needs of the market, whereas the coordinator can bring its mind to both the economic and technical and other issues. I strongly believe this is the right approach. Of course, the coordinator will engage with industry.

The member commented in his second reading contribution that the industry participants have said that there has been good engagement. This is a small market. You can get 100 people in the room and that is it. It is not like the east coast where there are thousands of people involved. It is a relatively straightforward system to operate in the intellectual way. It is still a very complex system to manage because it is standalone. Therefore, we think it is better to bring the responsibilities back to the coordinator as much as possible to provide that more dynamic environment. Given that, as I said in my second reading reply, this is not the end of reform, it is just the next step along the path.

Clause put and passed.

Clauses 35 to 63 put and passed.

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Clause 64: Section 105 amended —

Dr D.J. HONEY: The top of page 53 refers to the functions of an arbitrator for the purposes of the arbitration of disputes. I wonder how that interacts with people's rights of appeal to the State Administrative Tribunal. Does it relate to that in any way or is this a function that avoids the necessity for people to refer matters to the SAT?

Mr W.J. JOHNSTON: I am not sure I got the question correct—I apologise for that—because I was worried about other issues. Would the member not mind asking it again?

Dr D.J. HONEY: That is fine. I thank the minister. It may not be relevant, but how does that interact with the right of appeal to the SAT for decisions made? Does it not relate to that or is this a step before someone would enter into a formal judicial process, if you like?

Mr W.J. JOHNSTON: There is a very complicated procedure here to manage people's market behaviour. When there is a dispute between the regulator, which is the Economic Regulation Authority, and the market participant, those disputes go to the energy arbitrator. We have had two of those cases. One was about behaviour that occurred prior to Dr Nahan becoming minister, and one occurred prior to me becoming minister when Dr Nahan was the minister. It is one of those funny things—the minister in power at the time that the decision made was not the minister in power when the behaviour occurred. Interestingly, former minister Dr Nahan and the current minister had the same view about the outcome of the arbitration; that is, it was a bit misguided. This is not about the matters on those other powers that we were talking about previously for which the appeal applies to SAT; this is about matters for which the regulator enforces its view of market behaviour. It is not related; it is a separate issue.

Clause put and passed.

Clauses 65 to 83 put and passed.

Title put and passed.

[Leave granted to proceed forthwith to third reading.]

Third Reading

MR W.J. JOHNSTON (Cannington — Minister for Energy) [6.44 pm]: I move —

That the bill be now read a third time.

DR D.J. HONEY (Cottesloe) [6.44 pm]: I thank the minister and his officers for their clear explanations of the Electricity Industry Amendment (Distributed Energy Resources) Bill 2023. As I said and will repeat, I was really impressed and appreciative of the effort made to provide the detail, particularly the explanatory memorandum. I think it is a benchmark that others could follow. Otherwise, as I said at the outset, we support the legislation. Perhaps the member for Swan Hills was overly effusive, but I recognise the effort that the minister has made in this space. This bill is an important enabler for the transition that we need to make.

I want to make a couple of points more in response to the minister's second reading reply. The minister discussed the importance of demand-side management. Here I focus very much on my old life in high-energy-using downstream manufacturing. I have a concern that accounts may see it as a good outcome, but it can result in decreased production and exports. The company does okay at a financial level, but the country misses out, if you like, on that export. Will it bankrupt the country? Maybe not; nevertheless, it impacts at that level. Otherwise, I accept that if there can be sensible demand-side management, it is a very low cost way of providing energy or reducing demand for it.

The minister commented on the larger grid. That logical argument is partially correct, but the other thing about the grid, as the minister knows better than anyone else, is that it is being reversed, and all of a sudden energy has to be brought into the network. Although some of that grid development may be about higher energy consumption, part of it is purely changing where the energy is generated and bringing it into the system, so an investment is being made that will not necessarily return money or pay for itself.

I am not pessimistic about this transition for the larger electricity network. I must say that my intuitive feel is that going to 70:30 on gas and renewables is probably fairly straightforward, but going above that will be a lot harder. My concern in this state is really outside the electricity network transition. It is about where the other 88 per cent of the energy will come from and the investment required. The size of some of these projects coming in sounds impressive, but when they are looked at against the total state energy demand, they are not so impressive. I have had discussions with a number of large energy users, and although managers, who are not likely to be there when these changes will be made, are saying, "No worries. We can do this", I believe that very serious concerns are arising amongst some of our larger energy users. It is not that the transition to renewables is not ultimately achievable, but that the time line, particularly out to 2030, is unachievable. Here, we are only talking about electricity, but I think it is a problem for the state overall. As I said, some of those transition projects may sound impressive, but not

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compared with our total energy consumption in this state. The ability to firm that energy supply in a way that meets the requirements of large-scale downstream manufacturing does not exist at the moment.

The minister referred to nuclear power. Now I have raised the topic, I will talk about it. I have made it clear by interjection, and I make it clear here in direct contribution to the third reading debate, that there is no proposition from the Liberal Party in Western Australia that nuclear power would form any part of our network in the near future.

Mr D.A. Templeman interjected.

Dr D.J. HONEY: No, minister. I have had this discussion with my colleagues, particularly about the small modular reactors. Actually, almost from the time I came into Parliament, I had people coming and talking to me about small modular reactors. First, the costs quoted for energy were not cheap and were generally in American dollars, not Australian dollars. As the minister points out—I have seen a very detailed analysis and paper—the technology does not exist. I think there are something like 15 or 16 proposed designs for small modular reactors. As the minister points out, a couple of projects are sort of kicking off, but the talk is about them being realised in only five years' time. Everyone talks about this large-scale, industrial-scale manufacture of the reactors. That is not how nuclear reactors are currently built. None of the plants exist at the moment, and they will not exist for some considerable time. I agree that it is going to be 10 or 15 years or more before that could be a reality—if it can be a reality in terms of cost effectiveness. Especially in Western Australia, we are so far down the path, and given the size of our energy consumption, it is not going to be part of our solution. As we all know, we are blessed with natural gas, and that is going to be the backbone of the firming in the state for some time. I think I have covered that it is outside the bailiwick of this. As I said, I do not think the energy network transition is trivial, as the minister has pointed out. I think that there are going to be some significant hurdles and some risk of instability in the network, but I think it can be achieved. I will say that with broader energy consumption in the state by industry, which has the largest energy consumption, I am concerned that some people have been overly optimistic about that, and, ultimately, all of us are going to have to make sure that does not harm our economy.

MR W.J. JOHNSTON (Cannington — Minister for Energy) [6.52 pm] — in reply: Thank you all for participating in the debate. I do not want to go on too long so that, apart from anything else, we can all go home at seven o'clock, which I know everybody will be pleased about.

There is a lot of confusion in the commentariat in Western Australia about the operation of our energy system. Getting the south west interconnected system to 80 per cent renewables is, of course, a very complicated process, but it is entirely achievable with existing technologies. To go much past 80 per cent becomes very difficult because the margin of cost going past that is a big, steep curve. That means that much of the time it will be, effectively, 100 per cent renewable, and sometimes it will be significantly lower.

People keep using the word “baseload”. The baseload in Western Australia is now 585 megawatts. It is less than the total amount of coal available in the system. What people actually mean when they say baseload is not baseload. They mean dispatchable, and that is a completely separate thing. The most dispatchable energy is the energy in a battery because it is instantaneously dispatchable. There is no need to wait for the spinning elements of the generator to start moving; it is available instantaneously. That is why we say batteries are so critical.

We will also need long-duration storage. Long-duration storage would traditionally be pumped hydro. In Western Australia, we have everything we need for pumped hydro except for mountains and water. We need to see what alternatives there are for the solution to long-duration storage, and that may well be hydrogen. Of course, that would be the nirvana, because there would be a dispatchable, renewable alternative. At the moment, it is not possible under the existing technologies, but in the future, we are confident that it will be.

Each of the companies have their own pathways for off-grid supply in Western Australia. I highlight the three big iron ore companies. Each of them have discussion in the media about three gigawatts of renewable energy in the Pilbara, and each is doing its own plan. We brought the Pilbara round table together so that we could have coordination about the shared linear infrastructure because it simply would not be possible for each of the companies to continue to build their own networks. It would be too expensive, apart from anything else. The point there is that it is not the government of Western Australia that has set the target of three gigawatts for BHP or Rio Tinto. It is the boards of those companies that did it. Therefore, they are executing it as very successful engineering companies. They execute engineering projects constantly. I venture that they have a better idea of how to execute an engineering project than somebody commentating in the media who has no particular skills in that way. Yes, this is a complicated thing and we cannot get things wrong. We have to make sure that it works. The good news is that we are bringing together the brightest minds, like Energy Policy WA, the Pilbara industry round table and all the different forums in the south west system, to make sure that we are listening to the people—not the people who talk about the energy system, but the people who do the energy system. That is why I really enjoy going along to the Energy in WA conference each year, jointly organised by the Australian Institute of Energy —

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Ms M.M. Quirk: You get a charge out of it!

Mr W.J. JOHNSTON: I do get a charge out of it. It is electrifying each night.

Mr P.C. Tinley: You like to make it current!

Mr W.J. JOHNSTON: That is right. It gives you a current in the energy sector.

There are 200 of my favourite energy nerds who get together and talk about this stuff. I tell you what—they are a better guide for what is happening in the energy sector than some retired person who contributed to the electricity system in the past, when it was old-fashioned, or some former editor of *The West Australian*. I do not understand why there is even a challenge about whom one should talk to. Talk to the people who are doing it. Do not talk to the people who are talking about doing it. Again, people are saying it is easier to just switch off traditional generators. They are being as equally ridiculous as the people who say that we cannot transition. Yes, this is a complex process, but the good news is that there are plans for each element of the transition, and we are implementing those plans.

This and other legislation are important steps along the pathway. Whoever becomes the energy minister after the next election will have their own reform agenda, because the reform process will not finish with this. I am not building an edifice. I am not saying that this is the end of the discussion. I am saying that this is the next step of the discussion. When we have fixed the problems that we understand today, tomorrow we will have 100 different problems, and the good news is that we have got the right people thinking about these problems.

I finish by saying that I do not invent this stuff by myself. I do not like personality politics, whether it is these silly people protesting outside Meg O'Neill's office or the silly stuff that is written in the newspaper about me. It is stupid. Do not do that. This is a collective decision process. We are taking the right advice and we are getting on with it. I know that this is an exciting time to be involved in the energy sector.

Question put and passed.

Bill read a third time and transmitted to the Council.

House adjourned at 6.58 pm
