

RENEWABLE ENERGY ECONOMY

Motion

HON SHELLEY PAYNE (Agricultural) [11.30 am] — without notice: I move —

That this house commends the McGowan government on its commitment towards building a strong renewable energy economy by —

- (a) helping to streamline the Mining Act to reduce administrative burdens and supporting best environmental practices to facilitate the extraction of critical minerals for the new mineral economy;
- (b) investing in renewable energy systems across the state including solar, wind, battery and hydrogen; and
- (c) the fast-tracking of green energy projects.

We do not get a lot of time for private members' business and this motion could probably have just addressed how we are fast-tracking green energy projects, investing in renewable energy systems or helping to facilitate the extraction of critical minerals, but the point I really want to make is that transitioning to a renewable energy economy requires a whole-of-government approach, and the countries and states that do it well will benefit in the future and those that lag will fall behind. I want this motion to, in some way, acknowledge the efforts across government to help our state transition to a renewable energy economy.

We have all talked previously about how we are fortunate that we are so well placed to do this, with our fantastic wind and energy resources as well as our extensive land area. For the renewable energy economy we need lithium for batteries, rare earths and clean energy. To set the scene, the world's growing demand for energy, especially clean energy, means that Western Australia can be at the forefront of the next wave of global energy production. Right now, we are the world's largest lithium producer and we have some of the largest reserves in the world for battery minerals. The price of wind and solar power over the last decade has decreased, so our large sunny and windy landmass is a globally significant resource for this renewable energy economy. Last year, we saw large-scale wind and solar farm investments grow by 50 per cent in Australia. We have abundant battery and critical minerals and we have leading export infrastructure, and our significant reserves of natural gas will help to support the energy transition, as will our availability of land.

I turn to the extraction of critical minerals. I want to address the first part of the motion that talks about facilitating the extraction of these critical minerals and some of the things our government has done. Firstly, there has been the fast-tracking mining approval project, which was one of our election commitments and is being delivered over four years. Associated with that is the four-year digital transformation program that is in progress to underpin the reform to the approvals strategy to deliver reduced assessment time frames for mining companies that want to develop new resources.

Members will remember that we passed a few amendments to the Mining Act last year. The Mining Amendment Bill 2021 was a really great step towards increasing the efficiency of applications and assessments for mining activities, and was really a whole restructure of the Mining Act 1978. It was great to bring a lot of parts of the legislation together. A new part was inserted into the Mining Act with clear conditions and procedures for how to apply and for the assessment and approvals process. As I said, the bill consolidated all approvals activity into one part. It gives clearer obligations about the types of activities that require approval and it sets out clearer and more transparent assessment and approvals procedures.

The new part of the act also introduced the eligible mining activity framework, which starts an automated approval process to enable a faster process for certain eligible mining activities. A key aspect of this that I am really pleased about is acknowledging that there may be areas of the state where it is not appropriate or feasible for activities to be authorised for automatic assessment. Some of these areas with high value to the state that are not formally protected can be gazetted and excluded from these EMA notices, which is a really great step.

The single approval statement that mining companies can get will streamline the application and approvals process. I am really pleased about this for mining companies that have multiple mining tenements. They will be able to bring them all under one approval statement, which will make it a lot easier for them.

I recently visited and talked with Brett Hazelden from OD6 Metals. His company is exploring the Esperance region for rare earths. The company is looking at two separate tenements north of Esperance, one at Grass Patch and one north east of Esperance and east of Mt Ridley. What he is doing is exciting. There is only one rare earth mine in Australia right now and that is Lynas in the Kalgoorlie area. That is the first and only mine in Australia for rare earths. The rare earth industry has been focused in China. There is another mine now in America, which is great

because some of the processing can be done over there, but a lot of the technology is not well understood. Brett was telling me how he is working collaboratively with Association of Mining and Exploration Companies as well as some of the other exploration leases around the Esperance area and Mt Ridley. He is also working with the Australian Nuclear Science and Technology Organisation to look at processes that can be used for extracting these rare earth minerals.

We always talk about the importance of rare earth minerals and I want members to understand where they are in the periodic table. At the top of the table are oxygen and carbon and then there is all that stuff at the bottom. When I studied chemical engineering, we did not really look at a lot of that. The second lowest row of the periodic table shows the rare earth elements. As we would know, they are really important for mobile phones. They are used for fluorescent lighting. They can be really high powered magnets. I still have Lynas's magnet on my fridge from about 20 years ago. It is the most powerful magnet I have ever had. They can be used in lasers, solar panels and fibre-optic technologies. They are also used in PET scanners. The lithium we produce goes into batteries, but these rare earths are also really important in the renewable energy economy because they are used in windmills and electric vehicles. Lithium is used to make batteries, but rare earths make everything a lot more efficient. This is really important. We are lucky in Australia to have these deposits of rare earths. One of the largest deposits that has been found so far is near Esperance, and hopefully we will see OD6 Metals develop its mine site in the next few years. It is a very forward thinking company. We are lucky in Esperance because a lot of times these rare earths are locked in really hard rock, but the terrain in Esperance is clay based. The rare earths have come off millions of years of weathering of granite rocks, and they will be easier to extract. The question of the processing and how to separate all these different materials is still something we need to look at. OD6 Metals has applied for a federal government clean energy grant to get more funding for that, and it is something we could look for. It is a really exciting project for Esperance as well.

We have a lot of lithium deposits around Esperance and the Galaxy Resources lithium mine has been operating for quite a while. It is really great that the staff live in the community, supporting the town of Ravensthorpe. A lot of exploration is going on around there but that brings issues with it as well. There is great biodiversity around Ravensthorpe. It is a United Nations biodiversity hotspot. There are cockatoo breeding areas. There is a need for government to look at and balance development in some of those sensitive areas.

I want to make a few comments on some of the great work the mining companies are doing. I note Hon Kyle McGinn is out on urgent parliamentary business. The government has provided support through the Clean Energy Future Fund for solar projects at some of these mine sites, but some have also undertaken that work on their own initiative. I want to mention the Gold Fields Agnew mine. Over the past two years, it has developed one of the biggest microgrids in Australia to power the mine site. It has five 110-metre wind turbines delivering 18 megawatts of power. It is Australia's largest hybrid renewable energy microgrid. The company also installed a solar farm at its Granny Smith operation in late 2020. Our mining companies are really leading the way on renewable energy into the future and looking to reduce their carbon emissions.

Time is moving fast so I will move on to the second part of the motion, which refers to what government is doing to support clean energy by investing in renewable energy systems. It is really great that we have a couple of big funds that we are using to support this policy. The renewable hydrogen fund supports capital works projects and feasibility studies and the Clean Energy Future Fund supports investment-ready, innovative clean energy projects of high public value. They are two really great funds. The \$19 million Clean Energy Future Fund was launched in April 2020. It has had a couple of rounds. There were two applications from mine sites in the first round, as I mentioned. The first was for a modular solar panel that can be redeployed at Caruso Dam. The second was for a 30-megawatt solar power system at the Homestead mine site in the goldfields.

Seven applications were successful in round 2. I will briefly talk about one of those because it is in my electorate—that is, the Narrogin renewable diesel project. The project received \$2 million toward a high temperature pyrolysis plant. I commend the Narrogin FutureEnergy Australia park located four kilometres south of the town. It will be the first renewable diesel production facility in Australia. We put in \$2 million through the Clean Energy Future Fund, but it is \$200 million project. The development application has been submitted and it will go through the development assessment panel process. It is a really great project for Narrogin. It will take construction waste and plant-based waste from the agricultural region and make it into renewable diesel. It will be interesting to see how the project goes.

As I said, the Clean Energy Future Fund supports solar, wind, biogas, biodiesel, battery and pumped hydro-electricity projects. I will mention a few of the projects while I have time. I have talked about projects in Esperance before. We have commissioned a new power station that produces nearly half of Esperance's electricity. It is wind and solar, so we have two big 185-metre turbines that each produce 4.5 megawatts as well as a four-megawatt solar farm. We have 8 900 solar panels that make up the four-megawatt solar farm; in comparison, some of the mining companies

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are putting in 30-megawatt solar farms. Members can only imagine how massive those solar farms are. It is difficult to understand how massive they are until you go and have a look at them.

I will briefly mention the battery storage systems the government has funded. There is one at Marble Bar and down in Walpole we have the first pumped hydro station. It is really great that they are using renewable energy during the day to pump water from one dam up to another so that during periods of peak demand, or when they have a power outage, they can easily use the energy.

I am running out of time and I have not even had a chance to talk about the fast-tracking of green energy, but I am sure other members will have a lot to say.

HON SANDRA CARR (Agricultural) [11.45 am]: I rise in support of the motion moved by Hon Shelley Payne today. I thank her for raising the motion. I find renewables very exciting, particularly in my electorate of the Agricultural Region and throughout the midwest. The potential renewable hydrogen market is very exciting for the midwest. Hydrogen's application particularly in hard-to-abate sectors, such as industrial processing and transport, will help to reduce emissions and help our state to achieve its net zero emissions target by 2050.

The federal government has certainly set the standard with its legislated emissions reduction target. It shows us the trajectory that we all need to be on. We can see our state's commitment to that in appointing Hon Alannah MacTiernan as the first ever Minister for Hydrogen Industry. It is a portfolio now held by Hon Roger Cook.

The state government has recently released its climate change policy. It includes the establishment of a \$1.25 billion climate action fund; closing all state-owned coal power stations by 2030; and \$3.8 billion in new green power infrastructure across the state.

For context, global use of hydrogen is forecast to grow from the current demand of 115 million tonnes a year to 500 to 800 million tonnes by 2050. We have gigawatt-scale projects planned right up and down the coast of Western Australia that will position WA as a global powerhouse in the production of hydrogen servicing that market. By 2040, based on current projects, there could be up to 200 gigawatts of renewable energy generation in the state and around 14 million tonnes of renewable hydrogen per annum available for export to markets such as Europe and our closer neighbours such as Japan, South Korea and Singapore.

We have seen significant progress in some of the hydrogen generation projects. There are too many to mention, so I will talk about what is happening in the midwest. The Murchison hydrogen renewables project will be a five to eight-gigawatt export-oriented green hydrogen and ammonia project just north of Kalbarri, led by Copenhagen Infrastructure Partners. The project has the potential to drive three gigawatts of electrolyser capacity and deliver an output of around two million tonnes of ammonia each year.

Additionally, we have the Infinite Green Energy project. It has submitted plans to the Environmental Protection Authority for the \$4 billion Arrowsmith green hydrogen project in the midwest. It is in the process of advancing that project. I will talk a little more about Infinite Green Energy in a moment. I note that both the Murchison hydrogen renewables project and Infinite Green Energy's project in Arrowsmith have been given lead agency status through the WA Department of Jobs, Tourism, Science and Innovation, showing the state's genuine commitment to advancing those projects and the early uptake of innovation that those groups are providing up and down our state's coast.

Hon Shelley Payne mentioned some of the policies that were released around December last year: the *Renewable hydrogen guidance: Land tenure for large scale renewable hydrogen projects* and the *Renewable hydrogen policy: Consideration of highest and best use*.

These are designed to expedite some of those processes and allow us to be the early providers in the hydrogen market. This is really important and it will become a competitive market. We can see some really dynamic industries stepping into that space and harnessing the opportunities and working really hard to develop the technology to provide those. Things such as the dedicated green energy assessment unit within the Department of Water and Environmental Regulation are critical to making sure that we harness those opportunities early. The green energy expert panel will comprise members from both government and industry to provide information and allow for quick groundwork to inform the Environmental Protection Authority to expedite those approvals while still satisfying the environmental requirements and expectations of our community.

I think WA's commitment to the hydrogen market is also evidenced by Premier Mark McGowan's recent visits to Japan and South Korea, South Korea being Western Australia's third-largest trading partner. Premier Mark McGowan signed a letter of intent with the Republic of South Korea's Ministry Trade, Industry and Energy, which was an outcome of discussions around new energy investment opportunities in WA. It will promote economic collaboration in the new energy and downstream processing sectors between WA and South Korea. That is a really exciting development and really strong evidence of WA's commitment to developing those opportunities.

Before Parliament resumed at the start of this year, the Shire of Irwin collaborated with government to hold an industry leaders forum at Dumas House and invited a range of departments, representatives from ministerial offices and a range of industry people from companies like Infinite Green Energy, Mitsui, Beach Energy, Tronox, Iluka, Triangle Energy, Strike Energy, Cockburn Cement and VRX Silica. Proponents and industry are already setting up and developing or already in operation in the Arrowsmith precinct. The Arrowsmith precinct is a really exciting area of the midwest. It is quickly establishing itself as a highly collaborative effort between industry, local government and government. They are all looking at and exploring ways that they can use each other's by-products and collaborate on infrastructure to ensure that they are key to the transition to renewables in our state. The collaborative effort of those groups is really exciting, and that was the key focus of the industry leaders forum, which resulted in a progress group—I have to remember the name of the group now. The progress group will meet monthly to coordinate all the efforts of each key industry concerns and raise those with all the relevant parties and government departments to ensure that the projects can be progressed in a quick and efficient way.

I will talk very briefly about Infinite Green Energy because, as Hon Shelley Payne mentioned, time flies when we are talking about exciting things such as development of hydrogen and renewables in the state. Infinite Green Energy is progressing well and we can see exciting developments there. It has two projects in WA. The MEG HP1 project in Northam will use existing solar farms to generate four tonnes of hydrogen a day, focusing on the transport sector, with first gas expected in 2024, which is not far away. In December last year, the project was awarded a regional economic development grant by the WA government and that was \$100 000 towards a new hydrogen refuelling station and showroom for hydrogen-powered fuel cell electric vehicles in Northam to show both international and local visitors the innovative strategy to decarbonise the economy. IGE's final acquisition of the Northam solar farm is underway and it is having advanced offtake discussions with future customers. It has signed an offtake agreement, and that is progressing.

IGE also has works and exploration projects happening in Arrowsmith. For those who do not know where it is, Arrowsmith is south-east of Dongara, about 290 kilometres north of Perth. IGE is using wind and solar to initially produce 23 to 42 tonnes a day of hydrogen and its first production is targeted for 2026. It is designed to serve what is anticipated to be a growing domestic transport market, along with an anticipated supply of 292 tonnes a day to meet global demand. The Arrowsmith project has been approved by the WA government for lead agency status, as I mentioned, and IGE has finalised strategic partner arrangements for the Northam project with significant global participants like Samsung C&T. This represents a significant milestone for IGE and opportunities for the hydrogen market more broadly in the midwest. I also note that IGE have been collaborating with Strike Energy. If I had more time I would talk about Strike Energy's Project Haber, which is near Three Springs, again in the midwest region. It will include a research and development grain farm, a solar farm, a dedicated decarbonisation area and undertake the production of ammonia and urea, which we know will be useful in supplying ammonia and urea for farming and food production that is being hindered by the global context.

HON NEIL THOMSON (Mining and Pastoral) [11.55 am]: I rise to provide a response to the opposition's point of view. I was a little surprised, I must say, when this motion was put up because I thought it was a little odd. Maybe this happened in response to the report, but for those who are not aware, on 20 December 2022, only a few months ago, the Office of the Auditor General released a pretty damning report on the matters that are pertinent to the first part of the motion, which reads —

- (a) helping to streamline the Mining Act to reduce administrative burden and supporting best environmental practices to facilitate the extraction of critical minerals for the new mineral economy;

I will familiarise the members of this place with the report. I hope that people have read it. It is called *Compliance with mining and environment conditions*. It contains some interesting comments and I would have thought the government would want to put forward other motions so as not to draw attention to the failure of the government in managing environmental conditions around mining. I will read from the report's conclusion —

DMIRS and DWER are not fully effective in ensuring mining projects comply with conditions to limit environmental harm and financial risks to the State.

That is a pretty damning response. It continues —

Their monitoring and enforcement currently provide a narrow view of operator compliance and do little to deter operators from breaching conditions.

Neither entity is fully effective in monitoring operator compliance. Both develop yearly compliance programs that include planned activities and allow for responses to emerging issues. However, despite growth in the mining sector, the entities have reduced planned monitoring activities, shrinking planned inspection programs by 60% or more over the last five years.

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This is not Neil Thomson speaking, for those who get carried away with that. This is coming straight out of the report titled *Compliance with mining and environment conditions* by the Auditor General. The other day we went through some of the amendments to the Mining Act and the opposition supported those. We support a risk-based approach to mining compliance, but we see from the Auditor General that even that is failing because this government is just not doing the basics. The basics is to ensure that the process operates properly, as outlined by the Auditor General. I encourage members opposite to read this report and if they have not done so, get on to it. Maybe they should have read it before moving this motion. One of the key findings is —

Monitoring of operator compliance is not fully effective

The report states —

Although the mining sector has grown, both entities plan fewer compliance activities, including significantly less site inspections. Neither entity has consistently completed these smaller programs.

Then it is interesting because the response was that we are going to go risk-based. The Liberal Party supports a risk-based approach but not an ineffective approach. It goes to the former motion that we had where there is just no control. The ministers just seem to be spinning their wheels on this stuff and are not keeping an eye on what is going on in their agencies to make sure that things are being delivered effectively. It continues —

- Entities require their compliance programs to be risk-based and there is evidence of more focus on higher-risk operations, but neither has documented how their compliance activities address the environmental and related financial risks of the sector.

That is a really serious point to make. There is no documentation on how that risk-based approach is applied; in fact, I do not think there is a risk-based approach in the Department of Mines, Industry Regulation and Safety and the Department of Water and Environmental Regulation. The statement that the McGowan government should be commended for its commitment to a strong renewable economy, protecting the environment et cetera is certainly not borne out in this report. Further, the report says —

Compliance information is inadequately verified and is incomplete

- Neither entity has a sufficiently independent view of operator compliance. Information used to assess compliance is self-reported by operators, but entities do not adequately verify it.

There is nothing wrong with self-reporting if it is applied and there is a proper verification process —

The substantial reduction in the number of proactive inspections means entities have less opportunity to confirm and verify operators' self-reported information.

This is a damning report and it stands in complete opposition to this motion. Only this week I asked a question framed from this report about publicly available information. The Auditor General has said that it is difficult to find and the agency has made a commitment to make the information public, but, in the meantime, the response to my question was: "It's all working beautifully. It's all available. It's all transparent." That is not what the Auditor General has said; it is not even what the agency has said, because its response to the Auditor General's findings was that it is going to have to do it now and it is going to have to do better. This shows that the ministers involved have been completely asleep at the wheel on this issue. They do not know how to deal with the most basic issues in their departments and they are not providing the safeguards that are needed to protect our environment and ensure that our industry operates in a proper way that is both efficient and safe. That is the issue.

I know that there are broader aspects to this motion, such as investment in renewable energy systems across the state and fast-tracking green energy projects. We saw before Christmas that the Minister for Planning abandoned the strategic assessment of the Perth and Peel regions. The very important Albemarle project in Kemerton had in the order of a nine-month delay because of the challenges of getting approval due to the conflict between the Environment Protection and Biodiversity Conservation Act and the Environmental Protection Act. We know that huge pressure is going to be placed on the Western Australian regulatory system to drive forward some of the important rare earth projects. Meanwhile, the investing industry is looking at the chaos in our regulatory environment and the fact that we cannot streamline the arrangements between the state and federal governments on those basic projects. There has been a nine-month delay in an industrial estate like Kemerton, which has been set aside for the development of those sorts of projects. There is nothing to be proud of about a nine-month delay in such an important project. We need to compete with other places in the world, such as China and South-East Asia, so that we can be an attractive place to invest and we can create the downstream processing operations.

I will go into the challenges around the royalty rates. There is vagueness in relation to the downstream processing aspects. There is not enough clarity about the battery chemicals. It is putting off investors. We need to deal with that. Some basic things need to happen to ensure that we achieve the renewable energy outcomes that we are talking about. I have raised questions about the changes to emissions guidelines in relation to the new safeguard arrangements that

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the federal government is imposing and the disconnect with the Environmental Protection Authority's draft guidelines. Again, we are a step behind. We are so far behind that we are not concentrating on the things we should be concentrating on. We are about to go live with an Aboriginal Cultural Heritage Act that we are completely unprepared to deliver. At last count, the department cannot even give a guarantee that the IT system that is supposed to be running will be up and running in the next month or two. The clock is ticking until 1 July, when all of that will have to work.

HON MATTHEW SWINBOURN (East Metropolitan — Parliamentary Secretary) [12.05 pm]: I thank Hon Shelley Payne for the opportunity to speak on this motion. I read the motion before I came into the house. I am not sure that Hon Neil Thomson gave his full attention to the wording of the motion. To that extent, I will not say very much about what the member said because I do not think he addressed what the motion is about.

Hon Neil Thomson interjected.

Hon MATTHEW SWINBOURN: I will leave it for others to try to make sense of what he was trying to say.

It is always a great opportunity to get up and speak about what the McGowan government is doing in this space towards building a strong renewable energy economy. We always need to recognise that what is driving us towards this need for a renewable energy economy is global warming and our reliance on fossil fuels to provide energy to our homes and to industry. Of course, this government recognises that climate change is a real issue; it is an issue that we need to both try to abate through the reduction of greenhouse gases and adapt to. Most of my commentary will be based on that strong renewable energy economy stuff.

I think that Hon Shelley Payne mentioned this. Only recently, we had two lots of amendments to the Mining Act. I am not sure whether the last government did anything to the Mining Act to address all the things that Hon Neil Thomson claimed we should be falling over ourselves to deal with. This government has been working hard to —

Hon Neil Thomson interjected.

The DEPUTY PRESIDENT: Order, member!

Hon MATTHEW SWINBOURN: Thank you for your protection, Deputy President.

Hon Neil Thomson interjected.

Hon MATTHEW SWINBOURN: There were amendments to the Mining Act last year, and particularly of relevance here is the Mining Amendment Act 2022, which received royal assent on 28 September 2022. Some important streamlining occurred through that process, particularly the introduction of the eligible mining activity framework, which obviously deals with the lower end of the industry but will ultimately provide for —

Several members interjected.

The DEPUTY PRESIDENT: Order, members! It is very difficult to hear Hon Matthew Swinbourn when there are interjections coming from both sides of the chamber.

Hon MATTHEW SWINBOURN: Thank you again, Deputy President, for your protection. I note that I did not make any interjections on Hon Neil Thomson and I wish he would afford me the same courtesy.

On the basis that that act introduced the eligible mining activity framework, it will help to reduce some of the costs for the mining industry. Importantly, it also replaced the existing requirement for the submission of a mining proposal inclusive of a mining plan with the requirement to submit a mining development and closure proposal. This streamlined application document removes the requirement for the duplicate information of a mining proposal and a mining closure plan and means that only a single mining development and closure proposal is required at the project application stage. That will remove the need for two documents, or in some cases multiple documents, that were often in conflict with each other. The department is currently undertaking policy work and consultation on these aspects and is working towards the development of the regulations.

The department is also continuing to work on the fast track mining approvals project, which is being delivered over four years as part of a government election commitment. The associated four-year digital transformation program is in progress to underpin the approvals reform strategy and deliver reduced assessment time frames. The regulatory and approvals framework will also be strengthened through the introduction of the eligible mining activity notice framework for automatic digital authorisation of certain eligible activities, and a single approvals instrument has been proposed as an amendment to the Mining Act. This government is continuing with its efforts to streamline the Mining Act and has already made a number of changes through the Mining Amendment Act 2022.

I now move to the second limb of the motion, which is investing in renewable energy systems across the state, including solar, wind, battery and hydrogen. We are very excited about the opportunity that energy transformation will provide to this state. It is clear that clean energy will need to play a significant role in both decarbonising existing households, businesses and industries, and facilitating new green industries. I have already mentioned that this government recognises that climate change is real and we need to deal with it. One significant and sizeable challenge

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will be how to achieve the transition to net zero by 2050 while at the same time keeping our power systems stable and secure. Synergy, which is both this state's retailer and generator for residential purposes, is decarbonising our coal-fired fleet, which is a central step in tackling this challenge. This government made a commitment to close coal-fired power stations, and this government will be delivering on that.

We have seen an incredible increase in the use of renewable energy through the south west interconnected system. Western Australians are particularly adept at adopting rooftop solar, more so than is the case in other jurisdictions. It is very exciting that Western Australians have adopted that. Perth and the south west, and other parts of our state, are particularly sunny. People who have spent time in northern Europe would know that there is a notable difference between the number of daylight hours in northern Europe and in this state. We have more opportunities to use solar, and households are taking that up with gusto. Synergy customers, which extend beyond just residential to industrial, are demanding the use of more renewable energy. Households, businesses and industries are looking to the use of renewables to decarbonise their operations. This is particularly the case for the mining sector. This has led to extraordinary demand for electricity from wind, solar and batteries from both grid connected and off-grid operations. This demand for renewables stems from the net zero ambitions of industry and from business opportunities, as well as from industry and shareholder expectations to decarbonise.

As I indicated earlier, Western Australia's growth in the use of rooftop solar is among the highest in the world. In the past five years, rooftop photovoltaic capacity in the south west interconnected system has tripled from around 650 megawatts to over 2 000 megawatts, with around one megawatt of new capacity added every week day. The high level of rooftop solar presents challenges to the secure operation of the SWIS, particularly in the middle of the day, and this is adding pressure to Synergy from additional maintenance and generation costs. This government is obviously investing in Synergy and putting in place mechanisms to help us manage that.

There is so much to talk about on this motion. I have pages and pages of notes, but my time is running out incredibly quickly.

Hon Jackie Jarvis: Time does not run out.

Hon MATTHEW SWINBOURN: No, time does not run out. I thank the minister for reminding me of that. Time is eternal, but my time is running out. The minister has just used a bit more of my time, so thank you for that!

I probably have not covered off on the second limb of the motion as fully as I could, and there will obviously be other speakers on this motion as well. The third limb of this motion refers to fast-tracking green energy projects. Before I go on to that, I want to make an interesting point about hydrogen in Western Australia. One of the things that is happening in Western Australia is the development of hydrogen through a number of means. People might not be aware that this state has reserves of naturally occurring hydrogen. That comes up through the earth and is known as white hydrogen. That can be distinguished from green hydrogen, which is produced from renewable energy sources, and also from grey, brown and black hydrogen, which come from fossil sources or through the electrolysis of water. Western Australia has significant reserves of naturally occurring hydrogen that are potentially available for use, and we are doing work to see whether we can take advantage of that. The proposed petroleum legislation amendment bill, on which the consultation period has just closed, will also deal with that.

This government has been fast-tracking work on green energy projects. My time is going to run out. I thank Hon Shelley Payne for bringing on this motion and for the opportunity to speak about it.

HON DAN CADDY (North Metropolitan) [12.15 pm]: A strong renewable energy economy is a subset of a strong economy, which is a hallmark of this McGowan government and always has been. I thank Hon Shelley Payne for bringing this important motion to the house. Members will no doubt not be surprised that I will be speaking mainly about hydrogen, as I have done in this place many times. The parliamentary secretary made the point that he would not be responding to the statements made by Hon Neil Thomson, and quite rightly so, because a lot of it was unintelligible. I will make the point that if Hon Neil Thomson wants to come into this place with a report that bashes the government, he first needs to understand the report, and he then needs to come into this place and put a coherent argument. That is the hallmark of what he needs to do, especially as an opposition member. The member once again talked about questions that he has asked.

Hon Neil Thomson interjected.

Hon DAN CADDY: I am not taking interjections, honourable member. The member should listen and he might learn something.

The DEPUTY PRESIDENT: Order, members! I remind you that members should address the chair, and that all interjections are disorderly.

Hon DAN CADDY: Thank you for your guidance, Deputy President. It is most welcome.

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I notice once again that the member is complaining about asking questions and not getting the answers that he wants. Ask a better question, member. Parliament provides training for new members on how to ask questions. If the member were to avail himself of that, that would be very good.

I now want to move to the substance of the motion and talk about what this government is doing in the hydrogen space. I share the passion —

Several members interjected.

Hon DAN CADDY: Deputy President, I am struggling.

The DEPUTY PRESIDENT: Order, members! Hon Dan Caddy has the call, and I am struggling to hear him.

Hon DAN CADDY: I share the passion of the former Minister for Hydrogen, who is off enjoying her life away from this place. The former minister has been described by others as the mother of hydrogen in this state. I want to take this opportunity to update the chamber on where we are at with hydrogen developments in Western Australia. I also want to give a shout-out to a good friend of mine, Daniela Mattheys, who is always up for a chat with me about hydrogen and where it is going in this state. She has a great ability to explain to me, in words that I can understand, how things are going on the technical side of hydrogen. In 2018, this government held Western Australia's first hydrogen summit. That was attended by over 350 international delegates. Gigawatt-scale projects are being planned up and down our coast, from Kununurra in the north, through the midwest, as Hon Sandra Carr spoke about, and right down to Hon Shelley Payne's electorate of Esperance.

Looking at the project pipeline moving forward to 2030, we have the indicator potential for 100 gigawatts worth of renewable energy generation. However, given the rapid acceleration of global demand, we may reach those goals far sooner. I think Hon Sandra Carr touched on this; by 2040, based on the current projects we have announced, we should be up to 200 gigawatts of renewable energy and around 14 million tonnes of renewable hydrogen per annum. This could allow for up to 14 million tonnes for export to Europe, Japan, South Korea and other export markets. That obviously does not take into account other opportunities closer to home. Where have we got to already? To date, we have committed over \$170 million in support for the renewable hydrogen industry in Western Australia. We started the journey in 2018, as I said, when we brought together major industry players in the international community to help shape our understanding of what we could do, where we needed to go and what we needed to do to develop a renewable hydrogen industry in Western Australia. From there, in 2019 we developed the WA renewable hydrogen strategy, our investment stimulus package, which I will not go into the details of because other members have already spoken about it. Early projects have allowed us to meet the targets that we set ourselves.

I want to take a moment to run through a couple of achievements. One of them I was going to talk about has already been discussed so I will let that one go. Under the export goal, Yara's Yuri green ammonia project on the Burrup Peninsula is currently under construction. It will utilise solar energy to produce green renewable hydrogen, which will in turn be used to produce green ammonia for export to global markets. Yara, together with partner Engie, is installing a 10 megawatt renewable hydrogen plant to feed into its existing ammonia plant. That is also on the Burrup. There are plans to scale up to 500 megawatts over the coming years. Congratulations to Yara and Engie and the whole project team for this achievement. They had their financial investment decision at the end of last year—a fantastic goal, which is fantastic for Western Australia. That brings us back to what I was saying before about the government taking an active role in promoting this industry. The Western Australian government provided a \$2 million grant for that project, which has now leveraged a subsequent \$47 million grant. It was another sound financial management decision in building Western Australia and Western Australian industry—a far cry from when members opposite were in government.

Hon Neil Thomson interjected.

Hon DAN CADDY: Honourable member, you had your chance and you blew it. Western Australia was the first country to establish renewable hydrogen energy in a remote microgrid, as has been spoken about.

Hon Neil Thomson interjected.

Hon Kyle McGinn interjected.

The DEPUTY PRESIDENT: Order, members!

Hon DAN CADDY: As much as I enjoy it, Deputy President—it is entertaining.

I will talk about the Denham hydrogen demonstration plant just briefly. The plant became operational in November 2022, with a \$5.7 million injection from the state government. My very good friend government whip Hon Peter Foster was up there for the announcement, I believe with Hon Bill Johnston and Hon Alannah MacTiernan. Denham, for those who may not be aware, is a small coastal community with fewer than 1 000 people 700 kilometres north of Perth.

Hon Shelley Payne; Hon Sandra Carr; Hon Neil Thomson; Hon Matthew Swinbourn; Hon Dan Caddy; Hon
Sophia Moermond; Hon Peter Foster

Hon Neil Thomson interjected.

Hon DAN CADDY: I would listen if I were you, honourable member. You could learn something about your electorate. The town was receiving its power from a diesel standalone power unit. The plant includes a 704 kilowatt solar farm, a 348 kilowatt hydrogen electrolyser and a 100 kilowatt fuel cell, making it able —

Hon Peter Foster: It's very impressive!

Hon DAN CADDY: It is, honourable member.

He has seen it firsthand. Denham is now able to transition away from the million tonnes of diesel that was being trucked into the facility every year. The plant is expected to produce enough renewable hydrogen energy to meet the average power demands of 100 households. A full production of the project would deliver up to 13 000 kilowatts per year. This technology has the potential to be an environmental game changer for many remote towns in Western Australia and other similar locations around Australia. It will allow for greater uptake of reliable, cleaner, greener renewable energy sources in the future. This goes to what we were talking about in this place yesterday. It will also help with critical skills development. Members would be aware that the last time I spoke on hydrogen, I talked about that and I talked about how exciting the hydrogen industry is for this state because we are very much at the vanguard. We are in a position to take a leadership role, with not just hydrogen projects but also bringing in and building up the knowledge base in Western Australia. We will not become an exporter of just the raw material—in this case, the hydrogen that is produced—but also an exporter of the knowledge. That is super important. That is where leading countries in the future, in whatever industries they are engaged in, are going to have the biggest wins. It is in the export of knowledge and it is in the intellectual property that is created.

I wanted to talk about some larger scale projects, including the Asian renewable energy hub, but I am absolutely going to run out of time. The clock beats us all, as the honourable parliamentary secretary made the point before. I could literally talk about hydrogen for hours because it is exciting. It is exciting from a clean energy perspective across the whole world, but it is particularly exciting for us here in Western Australia. I will go back and labour the point once again that if we get this right in Western Australia, we will become knowledge leaders around the world and that would be a fantastic spot for us to be in. That is where we should be looking to go with this.

HON SOPHIA MOERMOND (South West) [12.26 pm]: I rise to respond to the motion brought forward by Hon Shelley Payne. Although I am all for renewables and the environment, hence I speak about hemp all the time, there are concerns around some of the options presented. Lithium extraction, just like mineral extraction, requires mining. Mining is not necessarily environmentally friendly. It can actively harm the environment, even with current rehabilitation strategies that are in place. Hemp batteries are much more environmentally friendly, being mostly biodegradable at the end of their use. They are not currently at the production level but are being developed. Wind turbines are known to have environmental effects, including deaths of birds and bats, and concerns around whale and dolphin stranding relating to their hum and vibration. Wind farms require infrastructure, maintenance, petrochemical lubricants and fuel, and currently the blades are not recyclable. The Myalup offshore wind farm may interfere with whale migration, something we should prevent rather than finding out when whales are negatively affected. A Dutch company makes various sizes of tulip-shaped turbines that can be used by individual households and do not require the maintenance wind turbines do. They do not come with shadow flickers and have minimum noise disturbance. The material used in their production can be made from hemp. A focus on reducing overall consumption needs to be built in to our society by using tiny homes or homes requiring minimum heating or cooling, addressing built-in obsolescence and reducing our overall footprint. I am all for ethical consumption, but even in trying to do so, we are still consuming.

The DEPUTY PRESIDENT: Hon Peter Foster to bring us home.

HON PETER FOSTER (Mining and Pastoral) [12.28 pm]: Thank you. I have less than two minutes so I might use my time to reflect on two contributions that were made today by Hon Neil Thomson and Hon Sophia Moermond. It was quite disappointing to hear from both honourable members that they were talking down investment into the green energy sector. They were talking down laws and regulations that our government has put into place. They were talking down Western Australian jobs. There were talking down Western Australian manufacturing. It just goes to show that is why they are in opposition; they have the wrong priorities. The community of Western Australia wants us to transition to green energy so that we have a future for our children and our grandchildren. Instead, those members talk us down. We need investment to drive those industries. Members on this side of the house were talking about some really exciting projects in the Gascoyne, the Murchison, the midwest and the Pilbara, but members opposite did not talk about those. Hon Neil Thomson picked up a report he did not quite reference correctly and talked us down.

Hon Neil Thomson interjected.

Extract from *Hansard*

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Hon Shelley Payne; Hon Sandra Carr; Hon Neil Thomson; Hon Matthew Swinbourn; Hon Dan Caddy; Hon Sophia Moermond; Hon Peter Foster

Hon PETER FOSTER: The honourable member talked us down.

With respect to Hon Sophia Moermond's contribution, part of the projects that are being explored involve wind turbines and construction in that area. To hear her talk down those projects was, again, very disappointing. We need a transition to green energy. The member talked about the negatives of mining. We need mining to power our jobs, technology and investments into the future. It was very disappointing to hear that contribution. I thank Hon Shelley Payne for the motion that gives us an opportunity to talk about the renewable energy economy.

Motion lapsed, pursuant to standing orders.