



TRANSPORT AND RESOURCES COMMITTEE

Members present:

Mrs MF McMahon MP—Acting Chair
Mr PT Weir MP
Mr BW Head MP
Ms PE Pease MP
Mr LA Walker MP
Mr TJ Watts MP

Staff present:

Ms M Telford—Acting Committee Secretary

PUBLIC HEARING—INQUIRY INTO THE ENERGY (RENEWABLE TRANSFORMATION AND JOBS) BILL 2023

TRANSCRIPT OF PROCEEDINGS

Thursday, 1 February 2024

Townsville

THURSDAY, 1 FEBRUARY 2024

The committee met at 8.34 am.

ACTING CHAIR: Good morning. I declare open the Townsville public hearing for the committee's inquiry into the Energy (Renewable Transformation and Jobs) Bill 2023. My name is Melissa McMahon, member for Macalister and acting chair of the committee. I want to respectfully acknowledge the traditional custodians of the land on which we meet today and pay our respects to elders past and present. We are very fortunate to live in a country with two of the oldest continuing cultures in Aboriginal and Torres Strait Islander peoples, whose lands, winds and waters we all share. Other committee members with me here today are: Bryson Head, member for Callide; Joan Pease, member for Lytton; Les Walker, member for Mundingburra; and Trevor Watts, member for Toowoomba North. We will be joined later on this morning by Pat Weir, member for Condamine and acting deputy chair, who is substituting for Lachlan Millar, member for Gregory.

This hearing is a proceeding of the Queensland parliament and is subject to the parliament's standing rules and orders. Only the committee and invited witnesses may participate in the proceedings. Witnesses are not required to give evidence under oath or affirmation, but I remind witnesses that intentionally misleading the committee is a serious offence. I also remind members of the public that they may be excluded from the hearing at the discretion of the committee. Media may be present and are subject to the committee's media rules and my direction at all times. You may be filmed or photographed during proceedings and images may also appear on the parliament's website or social media pages.

HILL, Ms Jenny, Mayor, Townsville City Council

ACTING CHAIR: Welcome. We do not have a submission from the Townsville City Council, but I welcome you to make a short opening statement, after which committee members will have some questions for you.

Ms Hill: Thank you. Good morning, Madam Acting Chair, and all committee members. Welcome to Townsville—a city that is already the hub for traditional and emerging energy sectors which will drive Queensland's economic fortunes for the decades to come. At the outset, I believe the Energy and Jobs Plan outlined some worthwhile aspirations for the future of Queensland's energy industry. However, like most documents of this nature, there is always room for improvement. The main takeaway is, like the traditional energy industries that have sustained Queensland's prosperity for many years—and will for many years to come—the future of clean and renewable energy industries in this state will also enjoy a huge presence in regional Queensland cities and towns like Townsville.

While it remains viable to do so, it is important that we recognise the important role that coal-fired power stations play in the baseload capacity of the state's electricity grid and the coalmining jobs that feed into those generators. Similarly, the export demand for coal will drive Queensland's coalmining industry for many years to come. Indeed, the council team I lead is proud to have supported the Adani now Bravus Carmichael mine from the very beginning. Townsville's economic recovery after the pandemic has largely been thanks to the jobs and flow-on effects from that project, which exported its 10 millionth tonne of coal in November to India.

Similarly, the council I lead is pleased to support the litany of projects and investments in the renewable energy space. The announcement by the former premier last year in relation to the full funding commitment of the CopperString project is very welcome and is something the political leaders in North Queensland—whether it is Bob Katter, Tony McGrady or me—have been advocating for many years. Having the certainty of bipartisan support for CopperString would give our region great confidence going forward.

At the federal level, at the last election we saw bipartisan support for the development of a local hydrogen industry, with both Labor and the coalition committing \$70 million locally. On Tuesday we were fortunate to have the Prime Minister in Townsville announcing Edify Energy, a firm founded by Ignatius Park College old boy John Cole, as the successful recipient of this funding. Edify along with Gold Coast firm Quinbrook Infrastructure Partners, ASX listed company Queensland Pacific Metals and international backers from the United States and Europe are all excited about Townsville's place

as a future hub of clean energy and the potential for manufacturing jobs that can come with it. The next few years promise to be an exciting time for the Queensland energy industry and the manufacturing sector.

On a personal note, I grew up in Melbourne and both my parents were migrants. They worked in the factories, which have set that city up for sustained success, and it is now the largest city in the nation. The possibilities that energy and manufacturing industries bring to communities are endless and the key conduit for population growth for communities outside South-East Queensland. I support the aims of this bill and look forward to answering any questions you may have.

Mr HEAD: Thanks for being here, Councillor Hill. It is a great part of the world up here. As far as where council sits, I am just wondering if you had any rough figures—it does not have to be exact—on what sort of workload council has had in assessing renewable projects to date and working with that and what sort of strain it has had on council.

Ms Hill: We are a larger council. Firstly, one of the key things is to get your regional plan right, and in that we have encouraged, and I encouraged, some of the smaller councils to set aside specific areas related to where they wanted renewable energy, preferably close to where they wanted to have industry, and I am a big believer in not giving up good agricultural land for solar. On a personal note, I have seen the wind farms in the Atherton Tableland and I think you can have a good mix of those sorts of facilities and still be able to run cattle and sheep and things like that. That is the first thing you need to do. The next thing you need to do locally is: we assess on planning grounds, so we have capacity within our organisation to assess solar farms, wind farms and things like that. At the moment, the only thing we have seen here locally are solar farms. The bigger problem for us is the guidelines around landscaping and around inverters. We have some residential facilities close to one of our larger solar farms and the bigger problem there is the inverters. They used a cheaper brand that gives off a noise that is quite annoying at night. It is being able to prove that and to bring those guidelines into play to try to prevent a disruption for residents as well as allow these sorts of industries to occur.

Mr HEAD: So you went out and worked hard to get what council wanted right in the first instance, which has made your planning process a lot easier?

Ms Hill: Yes, it is. It really comes down to the planning scheme. We have economies of scale, and at the moment we are supplying support for Burdekin council because they cannot get planners and you cannot get some staff into the regions, so we are supporting them at the moment until they can fill those positions. It is all around, so you can imagine then you are a small rural council which is seeing the influx of people who want to provide all the new-age energy but your planning scheme is more designed for rural and rural residential, not necessarily for these industries. In some ways, better guidelines under the state Planning Act for these councils would be beneficial and would give everyone a clear boundary of what the rules of engagement were.

Mr HEAD: With that and further to that last point, I have five different local councils, a lot smaller than yours generally.

Ms Hill: I know what Callide is like.

Mr HEAD: I also have Gladstone and Bundaberg councils in my electorate which obviously have a lot more capabilities, but with those guidelines—and then you touched on the need for the state guidelines and planning scheme updates—as far as wind versus solar, one issue that I have seen is that councils with solar farms go, ‘Right, we actually have control,’ so they can set a lot of terms and conditions as per their local needs whereas on the wind side they do not. I just wanted to hear what your view is as far as what that whole state to local council approach should look like with the two different types of energy from a planning perspective.

Ms Hill: I go back to solar, because at the moment we are using a lot of static panels and there is a risk up here, with wet weather, of erosion because nothing grows under them. Do we need to see panels that rotate and follow the sun, because we get nine hours of great sunlight a day? I think in the future they are the sorts of things that we really need to consider about solar and solar farms, particularly in land that might not be as stable as others.

In terms of wind farms, all I can talk about is the ones I have seen on the Tablelands and they have been there for years. There are still cattle grazing around them and no-one sees the dead birds that are alleged by some of the green groups. They have been there for a long time, serviced through Powerlink and their crews here at Energy Queensland. To me, that shows that you can have wind farms and agriculture, but I think we need to determine what the real problems are. What are the problems for the agriculture industry with wind farms? What are the problems around easements to take the power from the wind into the grid?

People talk about underground, but undergrounding HV can come with problems as well. Particularly if you have faults, it is a very expensive thing to find the fault. But are there better ways, better technology? I think it really is about us having the discussion now about how we make it easier for everyone, because we are transitioning into the renewables and they do offer a possibility for everyone. How do we pay the agriculture industry? Is it a lease? How do we set those minimum standards for them? As I said, looking at what happened in the Tablelands—we have had wind farms there for 20 years—it was not a problem there, so why is it a problem now?

Mr HEAD: How much input should council have in that?

Ms Hill: The problem for councils is that they are the voice of their local community. It might be a great idea for the state and for the nation but it is not a good idea for locals. That is why if we have that discussion now and set that framework it is easier for local councils and community.

ACTING CHAIR: Could you outline to the committee in terms of the Townsville area how many proponents you have had approach council with their big renewable energy plan and how many of those council have had to knock back and for what reasons?

Ms Hill: At this stage I do not think we have knocked back anyone who has brought in an application. We have a prelodgement process where they can speak to staff, and if they attempt to do something in an area that may be too difficult they are advised of the difficulties. The member for Mundingburra will know very well, because he chaired council's planning, that through the prelodgement process we try to direct anyone into suitable areas. That is part of the reason we created Lansdown. It is a heavy industry precinct on the main HV grid that will allow industry to develop. It is nowhere near residential and it gives them an opportunity. At that site—that area is owned by council—we have MOUs currently with groups like Origin, Edify, Quinbrook, QPM—and QPM at the moment have moved into energy through gas—and we are continuing discussions with other groups who may wish to develop solar and solar farms in the area. By concentrating them—and as part of our regional plan that is an area set aside for that—it gives certainty to people who want to invest in the new energies a site where to go.

Mr WALKER: Thank you for coming in, Mayor. One of the issues that came up in our previous hearings is the impact of transporting equipment from the port—these wind turbines more so—and getting it out west. You have been on the executive of the LGAQ. Have you seen or heard of any issues raised by the LGAQ on behalf of local authorities addressing this very issue?

Ms Hill: I would have to go back and look at our policy documents. Can I take that on notice? I believe there is a document related to that around renewables, and if there is not we would be working on it at the moment. I can only speak about the problems here in North Queensland. The Flinders Highway at the moment is an issue for us. I get very annoyed at the concentration on the Bruce. I drove the Bruce twice last year, back and forth to Brisbane, and, apart from the sections they were doing up at Mackay, I thought the Bruce was in great nick. On the Flinders Highway at the moment we have some concerns with some of the bridges and the ability to transport some of the wind turbines into the Hughenden area.

I think for regional and rural communities—I know that Mayor McNamara is very keen to get the project going and I also know that it brings a lot of opportunity for them in Hughenden. We need to get that highway fixed right. When I have asked previous ministers around the Flinders they have said, 'Well, it really has not been raised as a priority.' I think it needs to be raised as a priority. If we are going to drive energy production into the regions, we need that sort of infrastructure built to accommodate it. It is not just for the wind towers; there is also the issue around B-triples feeding the port for cattle or feeding the abattoir here. There are issues for some of the mining companies as well.

Mr WALKER: We hear about the turbines, but mines have been carrying heavy equipment—tyres, big dragline equipment—out west for a long time. Has that been raised or is it an issue?

Ms Hill: Yes, it has. Speed is limited on some of these bridges as a result. Some of the bridges were built in the 1940s and really need a major upgrade.

Mr WATTS: Thank you, Mayor Hill, and thank you for your service to one of our great northern cities. My question relates to the renewable energy zones and the planning and the control and who has input and how they operate. I am interested from a local government point of view. You mentioned that you are bigger than most so you have a certain level of capacity and you also mentioned the Lansdown eco area that you have set aside. In terms of the zones going forward for the whole of Queensland, but specifically while we are here in North Queensland, what level of input do you think local government should have in terms of control or in terms of ability to veto or recommend particular projects in particular zones?

Ms Hill: The first thing is through the regional plan, ensuring you have had input into the areas you consider best for these sorts of industries. We did that locally through our regional plan. Charters Towers has an area where they would prefer to see renewables close to where they want to set up industry. We have our area. Some of the other councils have problems because of the rub between agriculture and renewables. Where you can, my advice would be to begin with the regional plan, bring in the local councils and discuss it at a regional level. Then what councils can do through their own strategic framework is set up areas of industry based near those renewable energy hubs.

One of the big problems I have heard about bringing another meatworks into the north is power. Running freezers is really expensive. If you could place a meatworks and run it off the HV from the renewables you would cut your power costs by about 40 per cent. That suddenly brings the cost of bringing a meatworks back into a regional or rural community down considerably. Then it makes that meatworks likely to be more profitable. That is the sort of discussion you need to have at that level that could bring everyone into the tent, whether they are the agriculture industry, the local council, the regional planning and the renewable energy zones. They are the sorts of things that people need to think about as part of this growth in renewable energy. It has the capacity to bring forth more affordable energy for some of these industries in rural and regional areas.

Mr WATTS: I come from the Darling Downs. When the gas fields were opening up, there was a fair bit of conflict between gas and agriculture. The GasFields Commission was set up to help mediate some of that. Do you think renewables need something like that that can bring some objective analysis back to it and some control around it? Do you think that would be useful, particularly where there might be an imbalance between a very big investor and a council that does not have the resources to deal with some of it?

Ms Hill: I remember Ray Brown, who you would know was on that GasFields Commission. That may be a solution to try to ensure that, for that very reason, there is some way of dealing with some of these issues. By and large, when you think about it, that allowed the gas industry to progress with investment and minimise the impact on agriculture. As I said, there has to be a way to bring everyone together and that may be a model that parliament should consider.

ACTING CHAIR: I go back to your opening statement about the possibility of manufacturing and how important a manufacturing industry is to building a vibrant city. Has council looked at what other future potential manufacturing industries the renewable energy future will open up for Townsville, noting that manufacturing industries like to be close to the sources of energy? With future energy comes future manufacturing opportunities. Has there been much exploration about what some of those future industries might look like in Townsville?

Ms Hill: There has been and they have been based around mining. Rather than doing pit to port we talk about mine to manufacture, because we think that is where the opportunity lies. In light of what has happened post the pandemic, there is a lot of discussion internationally around having more friendly sources of product. We see that as a big plus for us. Our future is in refining at the moment. We are talking about six refineries coming to North Queensland. Currently we have the copper refinery and the zinc refinery. We are now looking at a new nickel refinery—nickel cobalt. We are looking at a silica refinery, and that will move into manufacturing for polysilicon wafers and chips for computers. We are looking at hydrogen. We have vanadium currently, with investment from the state government on the pilot plant. We have all of these industries that are looking to move here based around, 'There is the mine, there is the port and here is the renewable energy that they need to ensure they can export their product into America and into Europe and into big swags of Asia now'.

Ms PEASE: In terms of developing those industries, what is the push for big investment with regard to your commitment as a city being able to provide renewable energy so that these organisations have green credentials?

Ms Hill: A lot of these organisations also want to invest in renewables so they are looking to build their own facilities as part of their project to help feed into the energy grid as well. We saw Korea Zinc and they did it first. They had a massive buffer zone and they now have panels—I cannot give you the exact number but there are enough panels to help them run their zinc refinery. For about four to five hours during the day on a typical day in Townsville, they are pulling very little power out of the grid and are in fact even putting some power back in while running their zinc refinery. They want to get their refinery being run at up to 90 per cent on renewable energy and eventually 100 per cent. They see a real benefit in that. That to a certain extent has been a poster child for some of these other refineries that are now coming into North Queensland.

It really does create a lot of opportunity for us. When you have a big company like Sun Metals investing in that, I can say to companies like Quinbrook and American and European investors, 'These guys are doing it and they're doing it here in North Queensland.' If they want to work with

nickel, vanadium or some of the other critical metals that we have surrounding this area, they can do that here in North Queensland. We are seeing a lot of that investment. They often come in and say, 'We want to do this and we want to connect it to this solar farm here or this renewable project there.' A lot of it is contained in that area around Lansdown because that is zoned for renewable energy.

ACTING CHAIR: For those who do not come from North Queensland, could you talk about CopperString and what that actually means for Townsville? The term CopperString probably does not mean too much for anyone south of Rockhampton. In terms of a game changer for Townsville, what does Townsville with CopperString look like versus Townsville without CopperString?

Ms Hill: It depends on the alignment and I do not know whether or not that has been determined. The original alignment I saw took CopperString literally down the Flinders Highway right through to one of the subs here in Townsville. If they maintain that alignment, it brings 500 kilovolts into a major industrial precinct. As part of that development, as you know, a lot of our projects now are prescribed projects. We have the support of the Coordinator-General. For us, that means we have industries where we do not even need to consider Ergon. Everything will be run through Powerlink and on high voltage. It is heavy industry. For me it brings jobs, a skilled workforce and a well-paid workforce. It allows us to extend the university. The university is moving to create a course purely on engineering for the renewable sector because it is all brand new. CopperString brings that into the mix because if these industries now want to be able to export overseas they need to have green credentials. We have plenty of land, we have plenty of sunlight and, fortunately for Townsville, we also have access to plenty of water so we can make those things happen for industry. CopperString is the icing on the cake.

ACTING CHAIR: Thank you for joining us this morning. I believe there was one question on notice. The secretariat will be in contact to firm up the wording.

Ms Hill: That is regarding the policy from the LGAQ.

ACTING CHAIR: Correct. Thank you very much for attending the hearing this morning.

BRUMME-SMITH, Ms Claudia, Chief Executive Officer, Townsville Enterprise Ltd

ACTING CHAIR: Welcome. We have a copy of your submission in front of us. I invite you to make a short opening statement, after which committee members will have some questions for you.

Ms Brumme-Smith: Townsville Enterprise is the peak economic development body for North Queensland, and that includes Townsville, the Burdekin, Charters Towers, Hinchinbrook and Palm Island. We aim to attract government and private sector investment. Townsville Enterprise advocates for key issues and projects that will enable economic development in North Queensland and we have advocated for CopperString for over 10 years. We continue to support the project as part of the construction phase. Townsville Enterprise welcomes the Queensland government's commitment to own and construct the CopperString project, which will aim to deliver the renewable energy targets which are codified in the energy bill 2023. We are also the chair of the North Queensland Hydrogen Consortium and have led the hydrogen industry development in North Queensland in the last two years.

Townsville Enterprise makes the following points to the committee: No. 1, we would like to see the streamlining of all levels of government approvals processes for large-scale renewable energy transition and transmission infrastructure projects to maximise investment attraction and remain globally competitive; No. 2, the delivery of generation and transmission infrastructure in renewable energy zones and the subsequent ability to deliver on the Queensland government's renewable energy targets will be highly dependent on the capacity of the transport infrastructure to enable construction not only of CopperString but also of the wind and solar farms; No. 3, the Queensland SuperGrid Infrastructure Blueprint should be updated within the first year of being released to reflect the updates to the current transmission project and time lines including CopperString, with biennial reviews from this day onwards; and No. 4, the committee notes the significant requirement for gas to play a role in providing firming power in support of renewable energy targets and the benefits provided by the repurposing of fugitive emissions into productive energy generation. They are the points we want to make.

ACTING CHAIR: I will turn to our acting deputy chair, who has arrived, for the first question.

Mr WEIR: Thanks very much for that. I know on my visits here one of the things that keeps being raised about not only CopperString but I suppose Mount Isa and the west in general is access and transport. Be it road or rail, what are the main challenges and what is the best way to get the process happening?

Ms Brumme-Smith: I think at the moment what we are seeing with CopperString and the renewables is that we will have a really big task ahead of us for probably the next 10 or 20 years. As the mayor mentioned, the Hughenden area has the best solar and wind resources in the country, with up to 35 gigawatts of renewables known in that specific area, and then there are other significant sunshine and wind resources around the Mount Isa region and on the way between Hughenden and Townsville. You really could power all of Queensland from the north if you wanted to, but the challenge we are facing is that you will have 10 years of transport of wind farm modules, solar plant generators and heavy equipment on the Flinders Highway not only to Hughenden but also, as I said, out to Mount Isa.

The challenge we have, as the mayor mentioned before, is that the bridge infrastructure is not up to scratch and it has not been for many years. When we built the Diamantina Power Station out in Mount Isa, we had to basically drive generators all the way to Emerald and back up. This has been an issue for many years but it has not been addressed. We have called for an infrastructure audit on the Flinders Highway with the Queensland government, and we would really like to see that done very quickly.

Our belief from the investigations is that these bridges will not be able to hold the heavy equipment needed for CopperString nor the heavy equipment needed for some of the wind and solar farms. They will need basically airlifting, which is highly expensive and will cause time delays. That will have a major impact on production costs for construction of not only CopperString but all of the proponents out west. We have some really large infrastructure to go into this area.

Our predictions in terms of the modelling of road transport into the Hughenden area will mean that we will have 10 years of 20 kilometres per hour of road transport of wind modules. What that means is that, because there are not passing lanes, we will impact the traffic into Mount Isa and the traffic into communities out west, and that is a highway that is already doing \$6.6 billion worth of trade. What we do not want is those new industries holding up the existing industry. We want them to coexist and be able to thrive together. We need passing lanes and to strengthen the surface of the highway. All of that is part of the infrastructure assessment that we need and we need it done quickly.

Mr WEIR: Given the infrastructure upgrades that are needed and given the labour workforce that is going to be needed, how would you envisage that is going to work? The workforce is going to be used but you are saying there needs to be a massive upgrade of the road. You were just talking about the roads but you have not mentioned rail yet.

Ms Brumme-Smith: I think the rail in this case will be able to potentially help the road network by taking some of the mining products that have moved onto road back onto rail. There will be delays in transport when you have slow-moving heavy vehicles or heavy equipment going on that road, so I think the natural choice should be for Queensland Rail to attract some of that cargo back on rail that is currently on road. We have seen a road and rail shift over the last 10 years from 20 per cent on road to 80 per cent on road when it comes to critical minerals and minerals in general. What we want to see is some of that coming back onto rail so that the highway can cope with some of the additional traffic caused by the renewables construction. Ultimately, it needs to be a safe highway. If the highway does not have passing lanes or overtaking lanes, that is going to be an issue. We believe that there is construction capacity in the road network for that to be done, but it needs to be done in a timely manner.

Mr WATTS: Thank you for the information, particularly around the road network. I am interested in the point you made about streamlining the approvals process. Could you tease that out a bit? Are there any examples or suggestions where the state government can move to get this better?

Ms Brumme-Smith: Actually, the state government has been really good in the approvals space for renewables. In the federal government at the moment, we have not seen EPBC approvals for any wind farms recently. I think generally for the proponents what is frustrating is that we have three levels of government that have part of the approvals in place. What we would like to see is a streamlined process where everyone is working together ideally to make it a coordinated approach for the proponent. We always look at this as a globally competitive source. The UAE is one of our biggest competitors not only for renewables but also for hydrogen production. We look at the US, which is doing an extraordinarily good job to attract that investment in their own backyard. What all of them have done is make it really easy for the proponents to set up. One example from the US is the FAST-41 approvals where the federal government basically established a dashboard of a coordinated approvals process where you get your approvals within months rather than the two years in our nation.

Ideally, what we want to see is that, if these proponents have to get approval from state, federal and local government, there is a dashboard where everyone can see where everyone is at with those approvals at this point. We also do not want to see what we are seeing at the moment. Yes, government departments are responding within the legislated time frame, but it is basically to ask more questions. So you have 30 days or 60 days and then on day 60 you get the next question which then gives you another three months to respond.

We want to see departments working together across different levels of government to ensure we can compete with those approvals globally. As I said, at the moment the review under the EPBC Act is making it almost impossible to get approvals and approvals for wind farms in the north. We have not seen any federal approvals. We believe that the state really needs to work hard with the federal government and local government to ensure we are not missing out on this opportunity.

Mr WATTS: Obviously we have seen this in lots of areas previously with the three levels of government. Do you think the local landowner has a loud enough voice in that discussion? As big proponents are coming in and where there has been conflict, are you aware of how they have been resolved? Are there things that we can learn from that experience?

Ms Brumme-Smith: I think the local landowners, especially in the Hughenden area, are thankful for this alternative opportunity to earn additional income. There will be people who will not want to do this. I think the big proponents absolutely understand that, but there is so much land and so much good energy out there that so far we have not found that the projects could not go forward.

The concern that we have is obviously activists coming into the region as the awareness of the big potential of the Hughenden area and the Townsville area grows nationally. We know that they are not normally out of North Queensland, these activists. They are coming out of the south. I think that is more of a concern for us going forward. It is not the landowner as such because they make an active decision to sign up for this. We are seeing this with CopperString. Landowners were really supportive. Iberdrola and Fortescue and Windlab are already setting up in the Hughenden area and finding that working with the landowners is really good. I think my concern is more around the activist side that we are starting to see being deployed into North Queensland from the south.

ACTING CHAIR: The bill prescribes a percentage of publicly owned energy creation assets. It was not mentioned in your submission, but do you have a comment on the impact of having publicly owned assets as a majority power generator?

Ms Brumme-Smith: Our position would be that the market should drive the energy discussion. I think it is really important that CopperString is owned by the government because that is the enabling infrastructure that will bring it all together in terms of the connection into the grid and the connection for industry to get access to CopperString in an affordable and commercially sensible way. What we are seeing is a good mix at the moment of publicly owned assets as well as privately owned assets. We have Powerlink owning the Kidston pumped hydro and we see private investment coming into the region as well, so I think at the moment the balance is right.

For us, it is really important that public infrastructure is things such as transmission lines and port infrastructure. Where it really is important is pipeline infrastructure for hydrogen production. They are the ones that government should own because that will enable common user access for any energy provider or any energy user. Right now I have no concern between the mix of public and private investment into renewables.

Mr WALKER: As you know, Townsville was the first mover as a solar city in Australia. I drove that program when I was a city councillor and I am very proud of it. I am the hydrogen champion for the region. We are one of the first movers for hydrogen thanks to Sun Metals. They are currently building their plant for hydrogen and they have bought trucks or are in the process of obtaining those trucks to run their own fleet with hydrogen. The state government and the federal government have invested a lot of money into Townsville—and so we should, because we have demonstrated time and again that we want to be in the energy and jobs market to create a bright future for our young people. In the hearing in Mackay we heard about the issue of attracting workers. We have all these jobs and investment. You guys do it well. Coal does it well because of lifestyle. Besides this investment and enabling infrastructure, what do you see are the biggest challenges moving forward?

Ms Brumme-Smith: For us at the moment, the pain point—and you know it as well, Les—is housing and workforce attraction. With a \$20 billion green energy hydrogen pipeline, we see about 15,000 jobs needed in the next 10 years. That means about 9,000 dwellings will be needed for that transition into renewables. That is not just Townsville; that is along the corridor all the way to Mount Isa. Where we really need government help right now is with housing and workforce attraction. That is split in two ways for me.

Workforce attraction is trying to get people moving out of capital cities and into Townsville because there are exciting, cutting-edge jobs, whether that is the six new refineries that the mayor was talking about or getting jobs in the renewable energy space. Getting that word out is really important and there is no fund within the Queensland government for livability. We have tourism funds to work with, but we really have no funds for workforce attraction at this point that we can tap into as an economic development body or a regional tourism organisation to actually talk about livability and the lifestyle that we provide and the cutting-edge jobs.

We have just interviewed about 5,000 people who moved recently to Townsville to create a livability campaign. It is very clear that once they come for a visit they are unexpectedly surprised at how great the lifestyle is and how good the prices for housing are and how they can make a comfortable life in the north. Also, they were surprised at the amazing job opportunities and career progression opportunities that we have in the north. However, there is no funding for us to tap into to actually tell that story to capital city markets or other states at this point.

In terms of immigration, I think it is really important that the state and federal governments work together to attract a new workforce into this country. We understand that there is a lot of immigration to capital cities but there are no regional visas that will allow people to transition predominantly into regions. We are lucky as a region. We have a Designated Area Migration Agreement with the federal government that gives us 5,000 spots to fill and we are filling them nicely. However, without that tool of the DAMA we would be struggling right now to fill some of those high-paying, new, cutting-edge jobs.

Ultimately we know—and you know it, too—that some of the technology knowledge in hydrogen and also in renewables is not necessarily taught here yet. They are coming from Europe, the US, Korea and Japan. We need that talent to train our own talent. Over the next five years, we will absolutely fill those 5,000 special migration visas but we really do need more of those. Of those 15,000 jobs, not all will come out of our own country; they will come from overseas. We need to work proactively with the federal government to make sure regional visas are not forgotten, because we know that 88 per cent of immigrants go straight into capital cities and remain there.

Mr WALKER: You just made a comment about training. As a government, we are about to close off on the \$17 million training facility at the Bohle TAFE for the hydrogen and energy sector. We work closely with other private sector groups such as RGM, which signed the agreement for looking after hydrogen trucks—so much so that they have invested in the new site at the state development area. Do you see more of that private sector investment, not just in the hydrogen space but also the support services coming through? What do you see in that sector?

Ms Brumme-Smith: I think the hydrogen industry is an interesting one because we are starting from scratch. We are creating. We are cutting edge, or bleeding edge to some extent. I actually see industry really reaching out proactively to universities and TAFE to get this industry driven because they know they cannot do it alone. I think for the first time we are seeing universities and TAFE really working with the private sector. That is exciting.

You will know of the announcement we had on Tuesday morning from the Prime Minister on hydrogen. That includes in part bringing TAFE and university knowledge in and creating training courses that are specifically for renewables. James Cook University is looking in Townsville to set up a renewables institute that will drive some of the engineering requirements we will have with all of that development not only in hydrogen but also in renewable energies. That can position us as a global training hub for the other countries that are probably about 10 years behind us right now.

Queensland has a great opportunity not only to create their own talent but also to export that knowledge and gain students to come here and be trained with some of the best in the industry, because there is not a lot of industry yet established. The eco industrial precinct at Lansdown as well as the TSDA will really drive some of that. Students will come here and not only learn the theory but actually get to work at those companies and take that knowledge home.

Mr WALKER: The stars have aligned. We have the shipping channel. We have heard that another city would love to have their shipping channel widened and deepened but we are there. The state government has invested heavily because we own the port. The council purchased a site at Lansdown in 2003 for a vision. The state and federal governments have announced time and again big money and investment in infrastructure for the hydrogen and new energy space. We are already delivering. Now we have CopperString. The stars have aligned for this region. We want more. We always want more. We have been a good conduit at all three levels of government going forward, which as you said has attracted this private sector investment and confidence.

Ms Brumme-Smith: Yes, I absolutely think we are very much aligned with the agenda of all of those governments right now and also with the world. This is different for Townsville compared to Gladstone in the past, but we are seeing global companies coming here with a good balance sheet and they are willing to invest here because we have the best solar and wind sources and we have all of these assets like the port, the water and the infrastructure. The word is getting out that you have nine hours of sunshine, you have—and this is really important—wind not only during the day but also during the night. The investment for energy providers in North Queensland will be minimised because we do not need mega storage capacity because our wind continues to blow at night. That is why the UAE is not as attractive as North Queensland, because they do not have that asset.

Private sector investment always looks for what is there, what are the ingredients that I have. We have brownfield infrastructure, we have amazing solar and wind resources and we have water. They are seeing that it is a global competitive world compared to where they could invest. Where we are not great is approval processes. What we are not great at is the cost of manufacturing and the cost of doing business. Those are the things we need to work on to be globally competitive.

Mr HEAD: In your submission you refer to the importance of gas power generation and earlier Mayor Hill spoke about the mines manufacturing and that sort of thing. I am curious: does Townsville Enterprise Ltd have concerns about the reliability and affordability of electricity into the future without that being a key piece?

Ms Brumme-Smith: I think twofold. We have been one of the most costly places to do business for many decades because we do not have access to the national grid. For Mount Isa, for example, our production costs out west are 10 times higher than Gladstone. For us, renewables present an opportunity to be globally competitive. That is why CopperString is so important, because it enables the renewables to go not only to Townsville for manufacturing but also out west for mining. As the mayor said, for us it is about getting that cheaper energy—which right now we do not have for industry—into the mining areas that produce the ore that then can be refined in Townsville.

For us, we believe that an energy mix is really important. Green energy will help to provide the base load power for the mines and for our refineries. We also have the Bowen Basin, where we generate a lot of gas that currently is just going into the atmosphere and is adding carbon to the

atmosphere. One of the projects we have in Townsville with QPM is to utilise that gas, bring that up through our existing gas pipeline network and use it as firming power. It is there, it should be used and we support this committee utilising some of that information to not keep gas out of the renewable story but to make it support the renewable story. It will be one of the biggest wins in terms of taking carbon out of the atmosphere.

Mr WEIR: In your submission you say that currently the blueprint does not include reference to CopperString. It mentioned Townsville to Hughenden but not CopperString. What are your concerns there?

Ms Brumme-Smith: The concern is that when the blueprint was announced, CopperString was planned for 2035 and beyond. It was to be in stage 4 of the blueprint. We want it in there now. We want it reworked. We have advocated really hard to get the announcement for CopperString. It is a key enabling project for this region and the blueprint must be updated to have it as being delivered by 2030.

Mr WEIR: You think that would be more of a firm commitment that it is locked in?

Ms Brumme-Smith: I think the document should be up to date, along with the benefits that come with CopperString. When you have CopperString in that blueprint, you also see these REZs developing earlier. It will mean that the manufacturing side of things in Townsville can happen earlier because suddenly you have load that you can put on to CopperString. I think that is a very simple ask to update the documents and the impacts that CopperString will have.

ACTING CHAIR: Thank you very much for your time this morning and for your submission. I note that the submission does have the attachment of that FAST-41 process that you referred to. Thank you very much for joining us here in the committee.

FALKNAU, Ms Crystal, Coordinator, North Queensland Conservation Council

ACTING CHAIR: Welcome. We do not have a submission from you, so we invite you to make a short opening statement, after which time committee members will have some questions for you.

Ms Falknau: Our submission was made by the Queensland Conservation Council on behalf of organisations. Thank you for inviting me to speak today. NQCC is the peak environmental non-government organisation for North Queensland. Our mission is to promote and protect the natural environment of the North Queensland region.

For many years NQCC has pushed for a just transition to clean energy. Our ecosystems and communities are already feeling the impacts of climate change. We must reduce our greenhouse gas emissions as rapidly as possible if we are to give our biodiversity and our reef a fighting chance. We believe that ending our reliance on coal-fired power and transitioning to renewable energy is the quickest, cheapest and safest way to decarbonise Queensland's economy and protect our ecosystems and communities from the worst impacts of climate change.

The Queensland Energy and Jobs Plan lays out a pathway for an energy transition and we welcome this. Today we urge the government and opposition to support this bill formalising renewable energy targets and setting up the frameworks that we need to deliver renewable energy quickly. While we support this bill, we believe that some improvements are needed in the renewable energy zone framework to ensure this transition is rapid, coordinated and centres the needs of regional communities, First Nations peoples and the environment.

The first improvement we recommend is to include mapping of land use, biodiversity and cultural heritage. This would help guide the rollout in a way that gives certainty to developers while protecting our irreplaceable natural values, biodiversity and culturally significant sites. We also would like to see more accountability and transparency to ensure projects deliver positive long-term outcomes for regional and First Nations communities. Meaningful community engagement must be a priority for all communities impacted by development.

North Queensland has some of the best solar and wind resources in this state. We also have species found nowhere else in the world, and the development of our renewable resources should not come at the cost of biodiversity and habitat. We believe that Queensland's renewable energy system can and should be nature positive so that we can protect our biodiversity while providing clean, reliable and affordable energy to Queenslanders.

We also support distributed energy as a tool to reduce the cost of living for Queensland's most vulnerable. We believe that everyone should be able to access rooftop solar including renters. In an age of misinformation and division, it is crucial that Queenslanders see strong bipartisan support for renewables as the way forward. We urge the government and the opposition to pass this bill and to start building the framework that is needed to deliver a sustainable renewable energy system that benefits nature and communities.

Mr WEIR: I would be interested in how you would see the process being sped up but providing protections for what you just listed. Obviously, when you get into wind projects the EPBC comes in on top of everything again. How do you suggest it would be sped up or streamlined?

Ms Falknau: The mapping would be a great start, because that is beneficial not just for the renewable energy rollout but for all development in Queensland. We know that there is an MOU between the Queensland and federal governments via regional planning. That is mostly in response to the northern minerals province. We think that kind of mapping is actually going to inform all kinds of development. Obviously it is not super quick.

Claudia mentioned things being held up by activists and she referred to activists coming from down south. I can tell you that there are a lot of local activists in terms of action groups. They would not refer to themselves as activists. Most of them are farmers or landowners who are concerned about the environmental impacts of development and the lack of community consultation. Those things are probably going to cause quite a lot of problems if there is no social licence. That is where you are going to see pushback.

In some cases there is not social licence because there has not been community engagement and adequate environmental considerations have not been taken. We have some threatened species habitat right now where there are multiple developments planned that really threaten to wipe out the last remaining habitat for some species. Of course communities are going to be concerned about that. It means that the whole rollout, this whole transition, is not going to have the backing of regional Queenslanders which it really needs.

Mr WEIR: The bill lists a number of boards that would be there to oversee the process. Do you think their make-up, from what you have seen, covers what you are saying?

Ms Falknau: I believe in our submission we referred to community reference groups or community advisory groups. We think that would be a good way forward. It means that you have people who are on the ground in community, community organisations, traditional owners—all of the people you need to be helping to guide the decisions for those areas and communities in addition to those boards.

Mr WATTS: Thanks very much for being here. I am interested in the renewable energy zones—how they are prescribed, their management and what that looks like. I would be interested in your thoughts around things like, for example, when someone wants to open a mine; they have to put in a bond and go through a whole process. The government has the money for it to be rehabilitated and everything else. Those same rules do not necessarily apply to a renewables project. I am interested in your thoughts around rehabilitation. I am also interested in your thoughts about the process as you go through that in terms of agriculture versus biodiversity, potentially cultural heritage versus clean energy production and how we set up those zones to manage that and/or locate them correctly.

Ms Falknau: To answer the last bit, I think the multiple uses of land for agriculture and renewable energy is something that a lot of Queenslanders feel quite positive about—the idea that you can have solar panels or wind turbines on grazing land. We know that it does not threaten the agricultural properties in most cases. Queensland has plenty of cleared, degraded land. That is the land that we think should be prioritised for development of all projects. What was the other part of your question?

Mr WATTS: It was about the rehabilitation and applying similar rules in terms of using the land for a particular purpose. At the end of life of that particular purpose, there should be the capacity and the money to fix it up again.

Ms Falknau: Absolutely. We saw that in the state code 23 for wind farms. It was slightly strengthened in recent times, but there is still no requirement for decommissioning plans to be submitted at the time of application. That is something that we would like to see happen, because we do not know what is going to happen at the end of the life of a lot of these projects. We know that the impacts of most of these projects are quite different from what you would find in a mine. We recognise that. Yes, definitely in terms of the decommissioning stage, there should be a lot of transparency and the commitment of funding from the proponent at the beginning about their plans for the long-term future of that area.

There is also what I said about nature positive. It should be that the land is left in a better condition than it was, where possible. As I said, degraded land is the best place to be building and there are a lot of opportunities for developers to improve the environmental outcomes of the land they are working on and with.

Mr WATTS: Would your organisation prefer to see a decommissioning plan at the beginning and potentially some financial security around that to ensure it is not a lot of hot air and there is capacity to do it at the end of life?

Ms Falknau: Yes.

ACTING CHAIR: Thank you for coming in. I have brought up the QCC's submission here so I have been reading along with it. Obviously there is widespread support—and we have certainly seen it up and down the coast—for the transition to renewables, whether that is for the environmental reasons and credentials behind it or for the industry and the global requirement for our industry to be competitive. They need to have the green credentials as well. There is the environmental and the economic imperative there.

Yesterday we were in Mackay and we went to see the proposed location of the Pioneer-Burdekin Pumped Hydro scheme. This has a very large footprint, and very specific topography and terrain is required for something like pumped hydro. It obviously has a big impact on the environment. It is basically terraforming to create what we heard was the most sustainable electricity generation that is cheaper per kilowatt. Again, it does come with a big environmental cost. As opposed to wind and solar, what are the thoughts of the QCC, particularly up here in North Queensland, about the impact of these large-scale pumped hydro systems as one of the biggest elements of the push to renewable energy?

Ms Falknau: The impacts of pumped hydro are absolutely phenomenal and irreversible. We see it with any dam—the downstream impacts and the upstream impacts. It is not our preferred way forward. We understand that this is for storage. It is quite different to production. It is not putting

pumped hydro up against wind; this is the storage solution of the Energy and Jobs Plan. Honestly, we would prefer that there was an alternative, that we had the battery technology to use storage that did not have this kind of massive impact.

What we are really concerned about is the lack of transparency around this decision. We are told that this was chosen as the best site and that it satisfied the criteria. However, we have asked for some of that information about what other sites were assessed and what was the criteria, but we have not been able to get a lot of that information. We would like a lot more transparency in that. I am sure you would have seen if you visited Eungella—

ACTING CHAIR: Yes, we did.

Ms Falknau:—the signs.

ACTING CHAIR: The signs, yes.

Ms Falknau: Yes, they are pretty hard to miss, and going forth with projects in this way is really going to change a lot of people's minds about their support for the plan in itself because that is what they will see as being the impact. We are seeing the same thing in the north.

Mr WEIR: Obviously, as we have moved up the coast the landscape has changed in that it is not so closely settled and so forth. There is a proposal for the GasFields Commission to come in and be part of the negotiations between landowners and renewable energy companies. I would not expect the GasFields Commission's work would be really well known up here—I may be wrong—but I would be interested in your view. What is your thought on a body like that coming in?

Ms Falknau: Of gas?

Mr WEIR: The GasFields Commission.

Ms Falknau: Gas, sorry?

Mr WEIR: The GasFields Commission.

Ms Falknau: The GasFields Commission?

Mr WEIR: When coal seam gas started it was a body set up to mediate the conflict between resource companies and landowners. We now have a conflict between renewable energy projects and landowners, so this is a body that is being proposed to come in and to not only work with gas but to work on renewable energy projects such as wind, powerlines and so forth. Do you think an independent body like that would be the best way forward, or what would you propose?

Ms Falknau: I do not know much about this, but I think it should be the role of government to be doing the community consultation on the ground in a way that means something to the people because I think this is a time when the government, as it is, needs to be building trust with Queenslanders. In terms of having a third body to be doing that work, I do not know that that will get the result that ideally is needed.

Mr WEIR: We have seen some community resistance to some of these projects. What is the best way to alleviate that? You talked about the lack of clarity around the hydro proposals. Do you think there should be more transparency early? How would you best handle that situation?

Ms Falknau: I think most importantly it is siting these projects in places that are appropriate for development. What we have seen is some really inappropriate sited projects, for example Chalumbin and Kaban wind farms in the Far North which are adjacent to the Wet Tropics World Heritage area. There is no amount of community consultation that you can do there that will make people come on board with those projects because the development itself is clearing threatened species habitat and threatening World Heritage area values. I think siting these projects in places that are prime for development, so those degraded areas, will be the No. 1 way of alleviating a lot of the concerns that people have, because a lot of them are environmental concerns. Certainly the ones I hear are people's environmental concerns. There are concerns for the wildlife and the habitat that are going to be affected, so that would be the No. 1 thing.

The second thing would be being quite proactive with that community engagement. Again, in state code 23 for wind farms there is no requirement for the proponents to carry out community engagement. It is advised and it is recommended but it is not required. I do not think that is good enough. We do not think that is good enough. If the community has some industrial scale development happening near them, we think community engagement is absolutely required from the get-go, so from the start, so that people understand what to expect, when to expect it, when they will be able to have their say and how they will be able to have their say, because what we are seeing now is people very frustrated by the fact that they have seen something that is open for comment and, as we know,

it is pretty short windows of time that things are usually open for comment and they did not know. They have this project coming up, they have a species that they are worried about and they want to know what that proponent is doing to protect that species and they do not know how to find that information or they do not know how they can have their say. In terms of the way that developers are carrying out that community engagement, it would be good if there was a standard for that.

Mr WEIR: That is an interesting comment, because you have touched on some of the issues that are causing a bit of friction. We have heard that some landowners feel that there is one rule for these projects—and specifically wind farms, because they go on top of hills and ranges which are uncleared; they are vegetated—and landowners cannot do any clearing on that land whereas wind farms can, and then there are also reef regulations with run-off. They are looking for one rule for all, which I think was what the member for Toowoomba North was alluding to, so you are pretty much saying the same thing from what I am hearing. You either put a wind farm on top of a range and you have to clear it or you do not—that is, there is one process whether it be for vegetation management for landowners, for mines, for wind farms.

Ms Falknau: Yes. Queensland should pride itself on the environmental standards that we have with a lot of industry, particularly on a global scale. If we are making renewable energy and using renewable energy to manufacture things, we know that our ESG is a lot higher than other countries, but right now we think our environmental standards under state code 23 are insufficient.

Mr WALKER: Thank you, Crystal, for being here today. One of the things we have heard in previous submissions at our hearings is the need for bonds and cleaning up in the event of anything shutting down. We have had issues in the past—and still do—with the mining sector where there have been issues about rehabilitation and clean-up. There was a comment made just recently about bonds for green energy if anything went wrong so we could clean that up. Firstly, are you a big supporter of bonds across mining and the green energy space in relation to rehabilitation and how do you see that working? Can you give us some commentary on what you would like to see?

Ms Falknau: It is not a side of the development that we usually come across often because most projects are quite long term, but, yes, obviously we want to see more than just a commitment on paper from developers, particularly if they are causing a lot of land clearing or destruction. If there are potential long-term impacts, we do want to see that there is some sort of accountability at the end that they will leave the area in a better state than they found it.

Mr WALKER: What you are saying is that even during the construction phase there should be something done in relation to rehabilitation and getting it back to how they found it, and there are these issues about the long term, as you just suggested or commented on, in terms of damage or things that need to be rehabilitated. What we have found is that some mines have been closed down and there are issues around the rehabilitation and getting it back to its original state as best they can. What has come up just recently is about green energy in that they are building these big structures. Should there be a bond? How is that going to be managed going forward if a company is wound up or they just walk away? What is your group's position?

Ms Falknau: Again, that is an interesting thing. Given that I believe Australia or Queensland have not decommissioned any wind farms ever before—our oldest is still going—one thing that we did see in state code 23 was a recommendation or requirement that these components be recycled as much as possible, and I think the reason it is quite open-ended at this stage is that their technology is still developing for what that looks like. We know that most of these components are recyclable; it is just whether we can do it here. How far does it need to go? What does decommissioning look like? It is a question that we get asked a lot and we do not know, and I think that is a space where the government could work with some of these developers, particularly some of the companies that have done a lot of these projects around the world, to ask, 'What does decommissioning look like? What is the gold standard?,' because I think Queensland deserves the gold standard in that decommissioning.

Mr WALKER: Very good. In terms of offsets if you have a big solar farm, what is your position in relation to the offsets when those sorts of developments step forward?

Ms Falknau: Queensland's offset system is heavily flawed. We have seen many examples of this. Something that we are not seeing as well at the moment with some of these development proposals coming through is the consideration of cumulative impacts. For example, wind farms usually come in clusters of wind farms that are close to transmission and they will look at their little patch of their wind farm and say, 'We're only impacting this much koala habitat and this much black-throated finch habitat and this much that, so here's our little offset.' However, when all of this area is developed, if there is development happening all at the same time and a lot of clearing, those

offsets we fear are not going to stand up in the long term. We are very concerned with the offset programs that we have. That is why we would like to see a push for nature positive, which is quite different to simply offsetting something and saying, 'We will set this land aside.' It is actually asking, 'What can you do with this land that you were developing to make the environmental outcomes better?,' which we know is positive and it is possible with renewable energy.

Ms PEASE: Thank you for coming in today. My electorate is in Brisbane but it is part of the big industrial estate at the Port of Brisbane, so there is a lot of industry that goes on in my part of the world and a lot of new circular economy jobs through waste, recycling and recoverables. Locals have coined the phrase 'green collar jobs'. I am interested to hear from you with regard to opportunities here in Townsville, and you began your presentation by saying that you are supportive of the renewables process and how it is going to benefit decarbonising the state. With JCU's announcement and also our TAFE program here, there are great opportunities for people who want to get into these green collar jobs. How do you think that will benefit members of the Townsville community?

Ms Falknau: From my perspective, the fact that we are talking about green jobs now instead of coal jobs, particularly in Townsville, is a really positive step in that we are moving forward into the future. We are not relying on industries that we know are winding up and closing down. From my perspective there is a general excitement about the, I guess, futuristic idea that this is a field that is growing, a field that is going to skill people up into something that is relevant globally so they can take these skills anywhere. I think it is just great that we are able to work on this sort of industry that is an industry of the future instead of an industry of the past.

Ms PEASE: I find that many of the workers in the industries have a sense of pride. They are very ideological and they actually feel proud that they are working as part of that development, and that is certainly the case that we have seen in our travels when we have spoken to people. They are really proud to be part of changing the future generation of power in Queensland. There are great opportunities at TAFE and university for workers to get environmentally friendly jobs and ecologically friendly jobs and renewable jobs and qualifications which I would assume would benefit organisations like yours, because a lot of people have a real commitment—not only the general public but also organisations. They want their green credentials, so there is great opportunity for that training. Would you agree that there are opportunities there?

Ms Falknau: More conservation jobs is always going to be a good thing. I think Queensland has such a massive opportunity for job creation through conservation, whether that is on-ground management, whether that is Indigenous ranger programs, whether that is consultation or ecological surveys and things like that. Yes, it would be great to have those as local jobs where people can really ground-truth the work they are doing and not have to rely on companies that are based in South-East Queensland that may not be able to put their boots on the ground for a long period of time up here.

Ms PEASE: And for local families to be able to attend the universities or TAFE and then stay and give back to the communities they grew up in, so there is a great, bright future here in Townsville. Thank you.

Mr HEAD: Townsville Enterprise spoke of the importance of gas powered generation to firm the grid to ensure full-term, whole-year guaranteed and reliable supply. They spoke about the importance of lower power prices. How important is fully reliable and affordable electricity generation into the future?

Ms Falknau: How important is reliable—

Mr HEAD: Yes, and in the grand scheme of things, to achieve the goals that QCC wants Queensland to get to as far as renewable targets are concerned, how much of the environment needs to be factored in in the offset? If we go down the gas path to ensure we have that guaranteed supply, it comes at an environmental cost. I am curious as to your thoughts on what should be sacrificed more over the other.

Ms Falknau: The science is pretty clear that we need to stop any fossil fuel projects. Queensland can be a leader in renewable energy. We do not need to rely on fossil fuel projects any longer than we absolutely have to. Any future development of new coal or gas projects would go completely against the IPCC recommendations, against the Paris Agreement and against all of the agreements that Australia has signed up to. We understand that there are existing fossil fuels and existing infrastructure and they are all going to come to the end of their life, which is why it is really important that the renewable energy rollout is there and ready to go.

In terms of affordability for Queensland households, we see rooftop solar playing a role. You talk to anyone in North Queensland and they will tell you how much they have saved on their energy bills through rooftop solar. It is the No. 1 thing they will tell you and they can talk to you for 10 minutes about it because it is such a wonderful thing that people have embraced here, and I think all over Queensland. In terms of affordability, we would like to see accessibility for rooftop solar for our most vulnerable households and particularly renters as well.

Mr HEAD: If we do not build gas and it means a cost to guarantee 24/7, 365-days-a-year reliability, that is a fair cost that we should accept because of everything else? Is that a fair statement?

Ms Falknau: I went without power for three nights recently because we had a cyclone that was behaving very strangely. I was three nights without power in a heatwave which was, I would say, what the IPCC has predicted. I think climate change itself is threatening our energy systems, so we can either exacerbate climate change to make things worse for future generations or we can try to do what we can now as quickly as possible so that we can shore up what power we have to make things more reliable in the future.

ACTING CHAIR: Thank you very much for your time today, Crystal, for coming in and answering all of our questions. There were no questions taken on notice.

LEHMANN, Mr Chris, National Advocacy Manager, Master Electricians Australia

ACTING CHAIR: Welcome. Chris, I believe you have come up from Brisbane. It is fantastic for you to join us up here in Townsville. We do have a submission from your organisation. I invite you to make a short opening statement after which time committee members will have some questions for you.

Mr Lehmann: Thank you, Chair. MEA is a national industry association and a registered industrial organisation in Queensland. We support electrical contractors and their employees. MEA is broadly supportive of the energy transition agenda of the Queensland government and the Queensland Energy and Jobs Plan. We are especially excited about the impacts that CER, also known as distributed energy resources—consumer energy resources—practices and technologies could have on the more efficient use of energy, reduction in peak demand, load shifting, consumption close to the point of generation, EVs and their ability to provide both load and storage capacity, private generation and storage aggregation—so virtual power plants—and a shift to cost-reflective time-of-use tariffs, to incentivise changes to consumer energy behaviour. We are a bit concerned that the targets, especially for pumped hydro around storage, are overly optimistic, are expensive to the taxpayer and will be subject to skilled labour shortages.

MEA feel that, whilst the Queensland Energy and Jobs Plan includes consumer energy resources, it does not have the same status as the big picture, big infrastructure renewable energy zone projects that rely on large capital investment and give little control to the consumer over electricity usage and cost. The recent announcement of the extremely modest Battery Booster program bears this out.

Whilst MEA is supportive of the Job Security Fund with caveats outlined in our submission, MEA does not see the need for formation of the three new proposed Energy System Advisory Board, Energy Industry Council or Renewable Energy Jobs Advocate for the reasons that we have outlined. MEA look forward to continuing to be involved in productive consultation with the government on the Queensland Energy and Jobs Plan and the energy transition.

Mr WEIR: You are obviously representing electricians. There will be a lot of electricians needed. You have expressed concern about the labour shortage and delivering those workers to deliver these targets on time, particularly, we are hearing, electricians. I would like to hear your thoughts on the challenges.

Mr Lehmann: We are in the middle of a skills shortage. The reasons for that are complex and fairly engrained. We have put submissions in previously about how we might be able to relieve some of those skills shortages, especially around embedding vocational education and training in a more meaningful way in schools so that at the end of years 10, 11 and 12 we are streaming students into vocational training and giving vocational training outcomes the same status as ATAR, a university pathway. At the moment, the average age of a commencing apprentice is 24, so there is seven years of lost productivity—especially in the STEM trades, where the needs are so desperate. In general, these massive infrastructure projects that we have in the Queensland Energy and Jobs Plan are putting a strain on labour and resources, especially at a time when we need infrastructure capacity for the Olympics and other public works as well.

Mr WEIR: That goes to my next point. Given the constraints that are going to happen—and I think that is accepted—as these projects are being rolled out, do you think more focus should be put on storage as to constructing large-scale renewable generators? Until you can capture that energy, do we need to be ramping up the generation or should we be ramping up the storage?

Mr Lehmann: We should definitely be ramping up the storage. Without storage, renewables are not reliable. We believe that every solar panel that is going on a roof now is actually making the oversupply during the day worse. They used to call it the 'duck's back'; now it is the 'valley of death' as people are referring to it in the industry. It is so severe that AEMO has directed the DNSPs all around the country to be able to constrain generation during the day. A couple of years ago, any system that goes on a roof in Australia over 10 kilowatts has to have the ability that the DNSP can switch off export and generation to the network because it is causing such a problem. We do not have an energy generation problem in Queensland; we have a load problem and a storage problem.

Both my parents came off farms and I grew up regionally. I have friends with farms. For every roof space that you have you farm water off it and put it into a tank. Whether it is the milking shed, the saddlery shed or the machinery shed, you are farming those resources and you are storing them for later. I really think solar panels and batteries are the new water tank of the future. The most efficient way to utilise the energy that we can produce in our built environments—43 per cent of Queensland homes have rooftop PV—is to put that 'water tank' on the side, the battery, so the electrons go from

your roof to your kettle, to your pool pump, to your stove, and anything left over goes into your battery and you use that in the evening peak. We really think the lack of storage is a threat to the viability of the Queensland Energy and Jobs Plan.

Pumped hydro is a proven technology, but there are environmental impacts. I listened very carefully to Ms Falknau's concerns with pumped hydro, especially Pioneer-Burdekin. I am familiar with Eungella Dam. As an apprentice I used to drive up there and check the pumps and whatnot for the job I had at the time. It is a pristine environment, a habitat for platypus, gastric-brooding frogs and rock wallabies. I think there would be considerable pushback from not just the locals but people in metropolitan seats around the environmental impact in areas such as Eungella National Park.

For every battery that we put on the side of a house now, we start reducing that evening peak and flattening it off. It has always been the dream with renewable energy to be able to shift the daytime oversupply to the evening peak, and the only way to do that is storage. If we wait 10 years, we will have higher pricing in the evening peak and we will have more grid instability. For us, it is about storage and we need to start now. The most effective way to do that in an incremental way—though it will be more rapid than waiting for those big infrastructure projects—is to invest heavily in battery energy storage systems.

The pilots have been done all around Australia and all around the world. We know it works. Every person who takes themselves off the grid and can afford to put a battery on is feeling good about themselves and is also helping a neighbour, because the excess is being squirted back into the grid in their street. It does not have to be transmitted 1,000 kilometres from a battery in 'Outer Munducta West'; it is used in the local network and it reduces the strain on our networks. With respect to our distribution networks, it is a bit like driving your car at 6,000 revs or 2,000 revs: when we are up near the peak, it puts such a strain on transformers, insulators and connections on the network. I might get off my soapbox.

Mr WEIR: We have just seen energy consumption records broken in Queensland. The network was under enormous strain. I think everybody in the industry was crossing their fingers and hoping that it would all hold together. We are concentrating in this bill on the big end of more generation. We also have a situation at the other end where the network seems to be under severe strain. I assume that is why you are talking about putting more batteries on houses—to try to protect what we have.

Mr Lehmann: That is right. We designed the network for the peak load. If we can reduce that peak load, we can really protect our network and not need to spend as much money on upgrades for years to come.

ACTING CHAIR: Queensland has one of the biggest rooftop solar uptakes in the world and we are very proud of that. I know that there are a number of trials and pilots around the state on community solar batteries. I have a manufacturer of community batteries in my electorate. The Queensland Energy and Jobs Plan and this bill are probably more around that large-scale industry reliability for energy. Notwithstanding a lot of the work that is happening in residential, in terms of ensuring we have reliable, affordable and sustainable energy for big industry—and we did hear from the Townsville mayor and Townsville Enterprise earlier this morning about the need for future manufacturing here in North Queensland that is reliant on this massive amount of energy generation. Notwithstanding we have come up from Brisbane, up here in Townsville and North Queensland this is meant to be a game changer in terms of CopperString and the like. What is the flow-on effect for businesses and your members here in North Queensland for that future private industry that will come from a plan like this?

Mr Lehmann: There will be lots of positive effects with that type of investment. We are supportive of CopperString at Master Electricians. There will be some negative effects in that we are already in a labour crisis and our members find their workers are enticed away, as they would be, by bigger money on those construction jobs.

Of course we want reliable energy. We are not saying there is a silver bullet with home battery energy storage, with consumer energy storage. We are saying it has to be a big part of the answer because it actually helps reduce the environmental impact. We already have the built environment—we have already paved it; we already have the roofs up. There will be the least environmental impact to our state if we are doing it in the built environment. We think there is some good grid scale battery storage technology that is being looked at currently. We are supportive of the ion flow batteries that are being produced and deployed around Maryborough. We think they are 'and' solutions; they are not 'or' solutions. There is no silver bullet here.

Our message is that, rather than having a program that delivers 2,500 batteries with the Queensland Battery Booster program, we need 20, 30 or 100 times that number for it to be part of the solution and, importantly, to give consumers the buy-in—and I heard either one of the other witnesses or one of the committee members speaking about how people get their things on their phone and they look at it. I was an electrical contractor for 20 years. I am an electrician. I now work for Master Electricians. The fellows I worked with who installed solar all said that the minute they put the solar and the batteries on and they showed dad or mum how it all worked they were invested; they started becoming aware of their energy usage. By giving people solar and batteries and the home energy management systems that come with that now, you will see that change in behaviour. It will do those things that shift loads without us having to think about it. We just think there needs to be much more of an effort in that space.

If we are putting a lot more batteries on houses in Queensland and businesses—we have large natural, rare minerals provinces here in North Queensland—down the track that will increase the viability of a domestic battery manufacturing industry in Australia.

Mr WALKER: I am fascinated with your insight into the green side with the frogs and the platypus. It was very good to see an electrician talking in that space. It is getting exciting and you are invested in it, which is really impressive. You mentioned the Burdekin pumped hydro. I think you said it was being built in a national park?

Mr Lehmann: If it is the same place I am thinking of, Eungella Dam is right next to the Eungella National Park.

Mr WALKER: We inspected that yesterday, and from the information we were given there is no impact due to where this is being built directly on top of the national park. There is some tunnelling underneath. It is quite impressive. I heard you say that it is very expensive. I think you said it is a waste of money or it could be too expensive to build pumped hydro, in your opinion?

Mr Lehmann: There is \$62 billion in the Queensland Energy and Jobs Plan and it is about \$30 billion for pumped hydro. We have seen the blowouts that have happened with Snowy 2.0. You are a little bit pregnant once you start digging holes and doing these big civil jobs. You are not going to stop; the bill will go up. It is just a huge investment for the Queensland taxpayer. I am not saying let's not do it, but let's be thinking about could we replace that capacity—and the minister was talking about storage—with something else.

Mr WALKER: I asked that question because we visited Wivenhoe and it basically sat idle; it was not used much. It has only been in the last 10 years—this beautiful big asset had what was a lot of money back then invested in it. Now it is owned by the people of Queensland and it is generating very good results through CleanCo. You mentioned the batteries and ion flow—and now we have vanadium—and manufacturing. Here in Townsville we have vanadium electrolyte manufacturing in process, a trial plant, and they are going to go bigger. They have bought the land for the manufacturing process. Do you think there is a bright future for your industry with this battery manufacturing here in partnership with CopperString and that storage? How do you see your industry playing a bigger role as electricians and in terms of training?

Mr Lehmann: Most of our members are not at the large infrastructure level; they are at the household level and the B2B level but not in the infrastructure space. Grid storage batteries and whatnot are not really going to affect our members installing home-based batteries, home energy management systems and solar—that is what our members do. One of the biggest solar and battery installation businesses in the state is here in Townsville with Horan & Bird.

There is a lot of promise in Queensland. We do need to train more electricians. We are not saying this is a silver bullet, but we urge the Queensland government to get fair dinkum about supporting the consumer energy resources. Distributed energy resources actually make the grid more resilient. We saw what happened when Callide went offline, with eight per cent of our capacity in the state. If you have big solar farms, big batteries and mega projects and they go offline, you really feel it. If you have those resources distributed around the state it is less of an issue. It builds in that resilience.

Mr WALKER: What is being proposed here is doing that; it is spreading that across the state. Is that a good thing or a bad thing?

Mr Lehmann: In terms of energy battery storage on homes, consumer energy resources right across the state—my young bloke lives in Longreach. He is a teacher. You are probably all familiar with Longreach. On one side of the railway track there are the government buildings—what they call the government ghetto—and on the other side is the old town. The Queensland government is

probably the biggest landlord in the state, so all of that government housing sits there during the day. There are solar panels on some of them. Imagine if there were solar panels and batteries on them so that when everyone runs home from work and puts the aircon on you are not actually stressing the feeder that is coming in. You can reduce the size of the infrastructure feeding remote communities by having them more self-reliant and having, in effect, a microgrid.

Ms PEASE: Thanks very much for coming in and thanks for your representation of your members. You have mentioned some concerns and issues in your submission and your covering letter with regard to only private subcontractors or private sparkies being able to access the consumer but that only the government owned entities should maintain the network. Could you elaborate on that? That goes further to what you just talked about in terms of social housing, schools et cetera.

Mr Lehmann: Under the ring-fencing guidelines with AEMO, AER and whatnot, we are of the opinion that private resources and private installations should be done by private industry. There are some ring fenced businesses set up under Energy Queensland to deliver things because of scale, like Yurika with their charge network and whatnot. Wherever possible, we believe that type of work should be delivered by our members, private contractors.

We also believe that in the effort to get as many houses on smart meters, which then helps us to do consumer energy resources and control the network better, we should, as is done in other states such as New South Wales, allow electrical contractors to replace meters. It is not new homes that are the problem; it is the existing homes. If Mrs Kerfoops in Stafford has an old board out the back with a motorised meter and we go there to fix something, we will upgrade her circuit protection. It would be much easier and less costly if we could empower electrical contractors with the appropriate training—and there are courses that have been written—to swap over existing meters. It would make the energy transition that much quicker. Have I addressed your question?

Ms PEASE: Yes, that is great. I understand that side of things. I had a similar problem myself. I had an old Queenslander and I had to get the meter replaced because it burnt out and the fire brigade had to come. I am also wondering how that would impact remote communities, where private sparkies would be able to go out and do that work. Would that apply there and do they have the expertise to do that?

Mr Lehmann: Meters are not very complicated: there are three wires. There are installation rules written around them. There is the Queensland Electricity Connection Manual that Energy Queensland has for Energex and Ergon businesses and there is also the metering installation rules. Energy Queensland has just taken that sideways to a mob called CMIG, the Competitive Metering Industry Group. There are rules written and they are really easy to follow. As electricians, we work under about 110 standards. Electricians and contractors are well used to designing circuits, referring to standards and making sure things are compliant. We see that as being a very low risk. It really is just electrical work; it is only regulation.

Ms PEASE: There are currently works that subcontractors undertake on publicly owned assets like schools and hospitals—

Mr Lehmann: Absolutely.

Ms PEASE:—so you are not excluded from working on those.

Mr Lehmann: No, we are not saying that. It is more some of the ring-fencing businesses. In other states and in some of the revenue reset proposals DNSPs that we have seen there is thought about putting in standalone power supplies in some smaller communities. The way it is written in the ring-fencing guidelines, the DNSPs are the supplier of last resort; you should always go to the market first.

Ms PEASE: How does this relate to the renewable transition?

Mr Lehmann: In terms of putting in standalone power supplies, that will obviously be small, localised solar and battery set-ups. Rather than that being done by an Energy Queensland entity, we believe there are specialised businesses out there, private industry, that can deliver that.

Mr HEAD: In your submission you talk about the job security guarantee. It would be great if you could outline your key concerns about what that is lacking. In the electorate of Callide and the communities of Biloela and Chinchilla, a concern that has been noted is the fact that the job security guarantee refers to relocation packages. What is your view on what that might mean to those communities if we do not get this job security guarantee right?

Mr Lehmann: We are supportive of the job security guarantee. We think it should not just be with government owned corporations; it should also include anyone who is transitioning out where there is an industry affected around this. It should be expanded to include the transition of workers

from GOCs to privately-run businesses and also to support upskilling of all workers in affected communities in the energy transition.

Mr HEAD: For your members in small communities, if their jobs at coal generators were to end, do you think it would be prudent to try to keep them there and support those communities? I am referring to the relocation package aspect.

Mr Lehmann: Only if there is going to be a viable economy in those towns and we can find something to replace that. Coal-fired power stations are obviously very workforce heavy, and solar farms and battery farms are not. Once they are in, they are remarkably low on maintenance. So there will be people transitioning out of those types of communities, as well as the support services in those communities. It is outside the remit of Master Electricians to dictate policy, but we do think it should not just be confined to government owned corporation employees. Does that answer your question?

Mr HEAD: That is good, about the need to expand that. In your feedback you touch on public ownership as well. Could you elaborate on the concerns you have noted in your submission about not discouraging private investment because of those clauses in the bill?

Mr Lehmann: I suppose what we are talking about there is that there are industries, farms or businesses that might want to put in their own generation because they have the land there to be able to do it, so they should not be disadvantaged in any way. They should be free to do that and not be hindered. Is that the question you asked?

Mr HEAD: That is good. That was just adding a bit more to what you have written.

Mr WATTS: Are you saying that if they have the capacity to build their own generation—

Mr Lehmann: Solar generation.

Mr WATTS:—yes, they should be able to do that? Would that include networking it, or as isolated?

Mr Lehmann: We have a member in Mackay whose name escapes me at the moment who runs a manufacturing business and they are completely self-sufficient on solar. In fact, they make more power than they can use. They tried to enter into an arrangement with the network to export that power and they were rebuffed so they actually cut the wires at the front. They are completely disconnected from the grid.

The strength in the grid is the fact that we are all interconnected and we can move power around. I saw a CSIRO report a number of years ago on the scenarios with the advent of solar and storage and what would cause the most instability on the grid, and one of those risks was flight from the grid. If you have businesses or homes and whatnot that have the money to invest in their own generation and storage and they feel it is too hard or too costly for them to be involved in the network or the grid and they take that capacity away, if enough people do that, it then threatens the stability of the grid. I am not an expert. This network area is very complex. We are more concerned about our members installing solar and batteries and overall energy policy. As I say, I am not a network expert. I call it the alphabet soup: you have an AEMO, an AER, an AEMC and the ACCC. It is very confusing. I have had to put a ready reckoner on my desk at work to try to make sense of it.

ACTING CHAIR: Thank you for joining us here in Townsville and for your organisation's submission. That concludes this hearing. Thank you to everyone who has participated today. Thank you to our Hansard reporter. A transcript of these proceedings will be available on the committee's webpage in due course. I declare this public hearing closed.

The committee adjourned at 10.34 am.