

REPORT ON PROCEEDINGS BEFORE

**LEGISLATIVE ASSEMBLY COMMITTEE ON
ENVIRONMENT AND PLANNING**

SUSTAINABILITY OF ENERGY SUPPLY AND RESOURCES IN NSW

At Sydney on Wednesday 26 August 2020

The Committee met at 10:30.

PRESENT

Mr Alex Greenwich (Chair)

Mr Anoulack Chanthivong
Mr James Griffin

PRESENT VIA VIDEOCONFERENCE

Mr Nathaniel Smith
Ms Felicity Wilson (Deputy Chair)

The CHAIR: Welcome to the public hearing for the inquiry into sustainability of energy supply and resources in New South Wales. Before I start, I would like to acknowledge the Gadigal people, who are the traditional owners of this land, and pay my respects to Elders of the Eora nation, past, present and emerging, and extend that respect to other Aboriginal and Torres Strait Islander people who are present. Today is our final hearing for this week for the inquiry into the sustainability of energy supply and resources in New South Wales. We have witnesses taking part via videoconference and also attending in person at the Jubilee room in Parliament House. The hearing is being broadcast on the Parliament's website. I would like to thank everyone for appearing before us today. We appreciate the flexibility of everyone involved especially those attending via videoconference. We will now begin with our first witnesses.

PENNY HOWARD, National Research Officer, Maritime Union of Australia, affirmed and examined

WILL TRACEY, Deputy National Secretary, Maritime Union of Australia, before the Committee via videoconference, affirmed and examined

PETER COLLEY, National Research Director, Mining and Energy Division, Construction, Forestry, Maritime, Mining and Energy Union, Mining and Energy Division, before the Committee via videoconference, sworn and examined

CHLOE SMITH, Special Projects Officer, Australian Manufacturing Workers' Union, before the Committee via videoconference, affirmed and examined

The CHAIR: Good morning, everyone. Does anyone have any questions about his morning's proceedings? No. We welcome each of you to make any opening remarks. We will start with the Maritime Union of Australia. Ms Howard or Mr Tracey, would either of you like to make any opening remarks?

Mr TRACEY: I would like to begin by thanking the Committee for the opportunity to speak today. My union, a division of the same union that Mr Colley is from - the Maritime division - represents workers in coal-export ports in New South Wales and Queensland. We also industrially represent many members from New South Wales that work on oil and gas projects off the coast of Western Australia, the Northern Territory, and Victoria. I would like to start with the fact that we recognise the climate crisis, and the need to take action to limit global warming to one and a half degrees. Last summer, many of our members on ships played a critical role rescuing people stranded in Mallacoota and Eden due to the bushfire crisis that we saw over Christmas this year, while thousands more of our members worked outdoors through hazardous bushfire smoke. We are obviously deeply concerned by the climate crisis, but also by the lack of government planning to assist workers affected by the need to reduce emissions. Our view is this is critically important going forward.

We look forward to the role that maritime workers can play in building new infrastructure to reduce emissions, and state that, currently around the world, there is 29 gigawatt of offshore wind, which was installed by 2019. Construction is booming, even through the pandemic, while many other renewable projects have either been delayed or cancelled. It is significant to note that, in a new report by the International Energy Agency, they say that the value proposition of offshore wind, where we have directed most of our submission, is potentially comparable to that of base load technologies, such as nuclear power and coal-fired generators. We have a strong belief that there is significant potential for offshore wind in New South Wales, particularly from the Port of Newcastle. There is much stronger and more consistent wind offshore, allowing for a more consistent energy supply, and reducing the need for expensive energy storage, like batteries and hydro.

The New South Wales electricity grid is built around the Hunter coal-fired power stations. However, it is important to note that there is not enough land available in the area to build onshore renewable energy at a scale to re-use the existing transmission infrastructure. The proposed Renewable Energy Zones, where most of the onshore projects are being built, are around Armidale, Tamworth, Dubbo, Orange, and west of Wollongong. But these will also require significant investment in transmission lines to deliver power to users. Building offshore wind off Newcastle and the Central Coast would mean that electricity transmission infrastructure in the Newcastle and Hunter area could be re-powered, using offshore wind, as coal-fired power stations are shut; first, Liddell in 2022-23, and then Vales Point, Eraring, and Bayswater, between 2029 and 2035. The site being considered for Newcastle offshore wind is 20 to 25 kilometres offshore, with depths of 120 to 160 metres, interestingly, using floating turbines held in place with multiple anchors, or tensioned legs, with technology that is transferable from the oil and gas industry. This means that power would be generated 20 to 30 kilometres from existing large users, such as the Newcastle aluminium smelters, alumina refineries, and chemical plants.

There is space available now in the Port of Newcastle to be used for the construction phase, which involves very, very large turbines. We already have an experienced developer currently involved in putting together a Newcastle offshore wind project. They estimate there is capacity for 10 gigawatts of electricity, which would make some 800 12-megawatt turbines. The developer says that such a large-scale project could create the rationale for local manufacturing of turbine parts, which in turn would provide more jobs for the Hunter and Newcastle, and more transition opportunities. The New South Wales grid is projected to become more fragile with the closure of Liddell in 2022-23, so there is a strong rationale to ensure building is accelerated. However, the Newcastle offshore wind project is being held up by the delay in the offshore renewable legislation, because the developers need an exploration licence and wind data for two years, in order to get financial backing for the project. The project is also not included in Australian Energy Market Operator's [AEMO] new Integrated System Plan [ISP]. This is because only onshore wind was used to assess potential Renewable Energy Zones and the new transmission necessary to support them.

It is possible that significant savings in transmission infrastructure could be made if this project goes ahead. What we need is a Just transition authority, to ensure that workers have the support they need, and are able to secure good jobs in new industries, and the Commonwealth's Offshore Clean Energy Infrastructure Bill to be urgently brought to Parliament. It was promised in mid-2020, but we have more recently heard that it could be delayed to early 2021. There are thousands of associated jobs, and billions of dollars in investment now being held up as a result of these delays. We need a full assessment of the potential for offshore wind in New South Wales, especially the ways it could reduce the need for investment in transmission and storage. Finally, wind offshore should be used and included in the planning for Renewable Energy Zones in Australia.

The CHAIR: Mr Colley, would you like to make any opening remarks?

Mr COLLEY: You have the Construction, Forestry, Maritime, Mining and Energy Union [CFMMEU] submission, so I do not need to repeat it. The point I will make here is that we have a large coal mining industry in New South Wales. Between New South Wales and Queensland we have the largest export coal industry in the world, after Indonesia. We are the principal supplier of coking coal to steel mills on the international market. It is a very big part of the New South Wales export economy, and it is a major part of various regional economies. Then we have the coal power sector, which is substantially smaller than the coal mining industry, as such. The coal power industry is in decline in Australia. We have had 10 to 12 coal power stations close over the past decade. With the exception of very isolated examples, of almost what we would call maverick investors, investors are genuinely not interested in investing in coal power anymore. We recognise that there is a decline going on in coal power, and we urgently need to have a long-term plan to deal with that, particularly for the coal mining regions that underpinned all those coal power stations, and the coal mines that supplied them.

We have put forward a number of proposals over the years. My submission refers to the ACTU publication from 2016. The CFMEU published research commissioned from the University of New South Wales at the end of 2018. We have also examined that report, basically looking at overseas experiences, good and bad, around restructuring power industries to reduce emissions. The fundamental issue we have is that, to gain consensus on the need to reduce emissions, what must happen to restructure industries, to meet those requirements, you will create winners and losers, if you do not plan your way through this. The question is then not what your targets are, the question is how did you get to your targets. To quote an example in Germany, they have a plan to phase-out all the coal power by 2038. That was achieved on a consensus basis, over a period of only 10 months of negotiations. That involves no coal community or local worker being left behind. It does come with a price tag attached but, when you look at the price relative to cost involved in re-engineering and rebuilding our entire power sector, it is actually quite small.

When we see that is the price of consensus, it is actually a fairly cheap solution, in terms of the way forward, because if we do not have consensus, if you have polarisation in communities, then you have the climate wars, which we have seen plenty of in Australia. My message to the Committee would be that, yes, we face huge challenges in shifting to renewable energies, given that coal power is already in decline for commercial reasons, but we have to prove—politicians, the business communities, and unions—that we can transform the adversely affected communities in a way that brings people along, and does not turn them into disadvantaged, marginalised communities. The history of restructures just in Australia is that most of it has been done badly. We need to be better at it. If we get better at it, then everyone will be brought along, and we can actually look forward to achieving the targets we already have and, undoubtedly, the stronger targets we are going to have.

The CHAIR: Ms Smith, would you like to make would you like to make any opening remarks?

Ms SMITH: Thanks to the Committee for inviting us here today. The Australian Manufacturing Workers' Union represents over 16,000 manufacturing workers across New South Wales and the ACT. Of these, around 2,500 work in the Hunter region, with around 70 per cent employed in the coal power generation or

aluminium industries. Our union is acutely aware that the coal industry in this country is slowing down. Companies and investors are moving away from coal, and putting their money into emerging industries, including renewable energy. Our union understands that this is an economic fact, regardless of political media rhetoric on coal and climate change. Therefore, the imperative to look to alternative industries for employment and sources of energy supply is an economic and social one, as well as environmental. Like all Australians, our members want to build a safe and prosperous future for their kids, grandkids, and generations to come, but this transition must not come at the expense of workers and communities who rely on these industries for employment, predominantly regional communities.

The economic opportunities of renewable energy must be shared with the workers who have powered our state and built our economy. This means developing a real transition plan, creating a local transition authority with a responsible minister in charge of ensuring that there is general consultation, support, and investment in these communities. We need to invest in skills and training to develop the workforce, so that it is competitive for the jobs of the future, by fully resourcing our TAFE. We need government investment in local manufacturing and infrastructure as a critical part of economic diversification, including building our trains, buses, and ferries here in New South Wales. Our politics has been paralysed for years on this issue, with a focus on political pointscore over futureproofing, but we must not sacrifice another generation, or another community, to an unplanned industry decline that will see jobs, skills, and livelihoods lost. Workers and community members need to demand a place at the table. They deserve to have a say over what their futures look like. Thank you.

The CHAIR: Thank you very much, Ms Smith. If we could start within the Hunter region, and we will have an entire day of hearings dedicated to the Hunter region, but that is an area where there has been a lot of community and local government-led work on transition. The New South Wales government, through the regional development division, seems to be involved in that, potentially playing a facilitator role. Could I just ask for everybody's opinion or assessment on the role of the New South Wales government, in planning and working with and for the people of the Hunter, given, as Mr Colley so clearly put, that there is an undeniable decline in coal power jobs within New South Wales. Maybe we will run in the same order, so Mr Tracey may begin.

Mr TRACEY: I will throw the question to Ms Howard, our National Research and Policy Officer based out of New South Wales, who has a more detailed understanding of what is happening in the Newcastle area.

Ms HOWARD: I am aware that there are some New South Wales Government processes, but I certainly am not aware of anything that has reached out to, or involved, our union. I have not heard of any of those discussions happening with any other union, but I am sure my colleagues here can add to that. It is a worry, because all of our members who work in the Port of Newcastle do work in the export coal industry. The issues there are clearly longer term than the very immediate issues facing the coal-fired power station workforce.

The CHAIR: Mr Colley?

Mr COLLEY: In New South Wales, the Wallerawang Power Station has closed, the Munmorah Power Station has closed, which was significant. The next one that is due to close is Liddell, in 2022-2023. If you look at the AEMO forecast, all New South Wales coal power stations will be closed by about 2035-2036, with the exception of Mount Piper. We are looking at a decline, and we will be seeing further decline. It is the role of both federal and state governments to chart a way forward for the coal power industry, as part of our sustainable energy strategy. I note that the New South Wales government recently announced \$50 million for local governments, particularly in coal-affected local governments, to look at diversification. That is useful and interesting, but we are still only scratching the surface of what needs to be done.

Wallerawang and Munmorah closed without any long-term plan for those regions. At the moment we have a situation with Liddell, where AGL is doing the right thing, in the sense that it has actually promised that there will be no forced redundancies for the workforce at Liddell. That is something we would like to see as part of our transition strategy, and it is one way to reduce opposition to the changes, to say that we are not going to throw them out of work. But AGL cannot have a strategy for the New South Wales economy. It has got to scope in for its own power stations. So it would be good to see the New South Wales government doing more. The problem is, of course, it needs to be within a consistent national strategy, and we are sadly lacking a national strategy at the moment.

The CHAIR: Mr Colley, you made the point that in Germany, a fundamental principle was no coal worker or no coal community left behind. That commitment is still outstanding when it comes to New South Wales, would you say?

Mr COLLEY: We do not have any language like that in the government policy at the moment, anywhere in Australia, I do not think. Perhaps the Victorian government is trying in the Latrobe Valley. There is a quarter of a billion dollar program. They have created a more diverse economy with the Latrobe Valley, but they have

not succeeded in just transitions for the Hazelwood workers. There was an effort in starting to redeploy the Hazelwood workers to other power stations in the region, and a lot of them have taken forced redundancy. Many have no work, or they have much worse work. So we need to do better.

I should point out that it is not just any job, with any situation where there are good jobs made in the transition to renewable energy and sustainability supply. We have had a situation where, in various parts of the renewable energy sector, some of the jobs created have not been great jobs. They have been insecure, they have been casual, they have been poorly paid, sometimes they have even paid below award rates of pay—they have actually been illegal schemes, using backpackers. The renewable industry knows it has to lift its game, and I think it is in the process of slowly doing so. But there are obvious cons there. One job does not equal another job. We need good jobs going forward, otherwise we will only be leaving people behind. The New South Wales government does need to do better in this area. It has made some moves.

The CHAIR: Ms Smith, just in terms of the assessment of the New South Wales government's approach to the transition.

Ms SMITH: Our assessment is on par with what my colleague said, which is that the role of government, and government involvement in the space so far, at both the state and federal level has been lacking, to say the least. There is no targeted, focused jobs plan, particularly for regional communities, like the Hunter. There is no targeted energy plan to provide consistency, certainty, or security to the impacted industries, or to guarantee the future supply and affordability of our energy supply in New South Wales. We think that there are a lot of opportunities that the government is missing in this space, including procurement, which is in our view, a really important aspect of economic diversification.

Places like Newcastle and the Hunter are world-class centres of manufacturing. If you want to talk about providing alternative industries and employment for workers in industries that are closing down or slowing down, that has got to be a key one. So, not just manufacturing of renewable energy, but also manufacturing of our public transport needs, our shipping needs, infrastructure, nation building projects—all of that kind of thing. The other point I would make, in terms of the Government's role that is being missed, is of course about our TAFE and our vocational education and training [VET] sector.

There is a huge role for education, skills, and training, to make sure that workers who are impacted can be retrained, can be reskilled, can be upskilled, and that we are also producing workers that are going to be prepared and competitive for the jobs of the future, particularly in renewable energy as well, if we want to make Australia and New South Wales a world-class leader in this area, given that we have the natural resources to do that. But we do not, unfortunately, have the skills and training to do that, at this stage. So in short, there is a massive role that the government, at a state and federal level, could be playing here, but our assessment is that that opportunity is being missed at the moment.

The CHAIR: Mr Tracey, you had something to add?

Mr TRACEY: Yes, could I just take the opportunity to reinforce what Mr Colley and Ms Smith have said—but in particular Mr Colley—about the need for jobs that are of a like nature -in terms of their salary, in terms of the long-term nature of the jobs that are available - because of what we have seen in the renewable sector to date, and the opportunities that are afforded in that space by an offshore wind project, the size and scale that has been suggested, off Newcastle, because it is effectively only these larger scale projects that will provide the sort of jobs that will allow workers in coal communities to be able to come into jobs of a like nature, particularly when you have a look at the sort of salaries, conditions, and stability that is associated with the types of jobs that will be produced.

The CHAIR: Thank you.

Ms HOWARD: Could I add something as well? You had asked about the example in Germany. Some of the key aspects there that we have not seen in Australia are, first of all, the role of consultation. There was a whole commission that sat, and included unions and representatives from all sectors of the community, to make that plan. Second of all, one of the outcomes of that was a job guarantee for workers that were going to be affected, that they might need to shift jobs, but there would be guarantees around their level of income, and that there would be security around that as well, and also investments in the whole community. Because, of course, with that kind of structural change, you do need those broader investments in education and other kinds of projects.

The other aspect I would want to comment on is the approach, from both the Australian government and the New South Wales government, with renewable energy has been very much a kind of "provide perhaps a bit of encouragement and hope that the private sector will fill in those gaps". That approach is really what has resulted in some of those poor working conditions; small, fragmented projects; projects not being planned and integrated with the existing transmission grid; and the scale of the development not matching what we actually need. We

think that that could be addressed, and needs to be addressed, by actually significant investment in the electricity sector itself. Our electricity grid was built in the public sector, and if we are going to completely transform it, we will need to look at those scale of investments. By doing it that way, you can actually address a lot of the job and transition needs, because we can mandate that that is what will happen.

The CHAIR: You have all flagged in the opening remarks, in some way or another, the role politics has played in this debate. We are all aware of the climate wars, the climate versus coal political debate. At the heart of politics is voters, and voters in these communities are your members. What are your members saying about the future of their communities, about proper action on climate change? We might start with you, Ms Smith.

Ms SMITH: We have started an effort to reach out to our members and have conversations with them in their workplaces and in their communities about this issue, because we recognise that, if we are going to start planning, and start playing a role, we need to put our workers and their voices at the centre. What our members are saying about it, when we talk to them, is that they know something is up. They know that a change is coming, and that there is going to be widespread industry change, particularly in their communities, in places like the Hunter, but they are distrustful of politicians to provide solutions and to fix the problem.

They have not seen that yet, and I do not think there is a lot of trust in politics, given the division and fighting around this issue, and the lack of progress that we have seen over the past decade, or even longer. But they do want a place at the table, and they do want to have a say over their future; they just do not see any opportunity yet for that to exist. In terms of our members specifically, ones that work in coal industries and related industries, I think it is fair to say they are not wed to those industries, but they are very understandably protective of the hard-won pay and conditions, that union members have fought for and won in those industries, over generations. That is why so many of those jobs are well paid and secure—because they have been good union jobs.

The concern there is that, okay, if the industry is transitioning, or the industry is slowing down, then I have to look at another industry for employment. Am I going to be able to find a job at comparative pay and conditions to support me and my family? I think so far a lot of the discussion around new jobs in renewable energy have been pretty theoretical, and pretty pie-in-the-sky. Our members are concerned, and what they actually want is a job that they can see touch and feel; that they know this, they know they can do, they know it is going to be able to provide for them and their family, and enable them to use the skills that they trained in, and that they are very proud of. So in short, I do not think our members are sitting with their head in the sand about this. They know something is up, but they are wary of the lack of planning, the lack of consultation, the lack of investment, lack of commitment, from any government, on any side of politics.

Mr COLLEY: I suppose I will start off with the facts. We saw in the last federal election, and in the seat of Hunter particularly, there was a massive swing away from Labor to One Nation, and that seems no longer a safe Labor seat. That shows the degree of concern and hostility around policy on coal mining. I draw a distinction here that our members feel, between the export coal sector, and coal power generation. Our members in coal power know that they can see, on the AEMO web site or the Australian Energy Regulator web site, that it that it has closing dates for all of our power stations. They know closure is coming, and they do not see anyone rushing to invest in coal power. So there is an acceptance in our coal power members that change is already happening, and more change is going to happen.

For the coal export industry, the fact is, until this year it has been growing, and obviously this year, no one is really sure whether it is simply a COVID-19 hit, or a long-term decline. But sooner or later, we know, that customers for Australian thermal coal, in particular, will start to buy less. We have not seen it yet, except for the COVID-19 impact, but we are going to see it. Our members in that area, their experience of the industry is still growing. So there is hostility to the idea of being told that their jobs are going to be finished sometime towards the medium-term. What we need to do is to be prepared for a time when overseas buyers reduce their coal purchases—and it will come sooner or later—I think the New South Wales government report on future demand for Australian coal had coal demand plateauing and declining slightly. We need to be prepared for that. The way in which we prepare for it is to prove that you can transition communities to a different future that is still positive, prosperous, and long-term. Our argument is that you need to start in coal power - proving that we can do it - because the coal export industry is a much larger industry.

My final comment there is simply that we have had an issue with what we call "just transition", but because everyone who opposes a coal industry has simply said "Oh yes, we must have just transition" it is now regarded as a marketing label for the same old structural adjustment it had in the past. A lot of our members do not believe it. They regard it as a con-job, and that is the sort of comment we are now facing, that just transitioning coal communities has already got a bad name. So we have to give substance to it, or there is always going to be scepticism about it.

Mr TRACEY: Just a couple of points. I have experienced first-hand the social destruction of this, that comes with shutting mining communities. I grew up in a mining community. My parents lived there, but that mine shut, and it just shut completely, with no support for either the community or workers, other than redundancies at that mine site. I have also been up to Newcastle and met, over a number of the days, with members of our union at the coal terminal at Newcastle, which I might add is the world's largest coal terminal—they keep reminding me, every time I go up there. They cannot miss what is going on in the coal industry; they see it happening around them. They understand that power stations are shutting. They understand that, in relation to thermal coal, there is that investment occurring in that industry.

They look to what the future is going to mean in this transition. They see, as Mr Colley put earlier in his opening statement, if I could say, jobs that are, quite frankly, shithouse. They are low paid and casual, and are often done by backpackers at, as was said earlier, below-award rates. They see that as the future of this concept of just transition that we hear about. That is why there is a strong obligation on the unions that represent those workers and those communities, and importantly, on government, to make sure that is not the experience when we transition away from fossil fuels to a low-carbon economy; so that it is not these communities and these workers that bear the full brunt of that transition, by having their jobs taken away and their communities closed.

There is an obligation to plan properly for this transition. They see it coming. They know what they see when you talk about just transition. They want to have a future that involves the sort of stuff that we have seen in June, that has been talked about so far today—where there is a degree of planning, consultation, guarantees around jobs, guarantees around support to community that will allow us to transition, that involves these workers and their communities—and it does not look good.

Ms FELICITY WILSON: Thank you everyone for joining us today. You may or may not have been following the Committee's conversations in the past couple of days. The Committee has had quite significant and broad discussions about transition and skills in the industry, and today you are feeding into that jigsaw puzzle that seems to fit together quite well, so thank you, we appreciate your contribution. I have a couple of questions. Earlier you were talking about off-shore wind. In order to have jobs transition to an industry, transition to into the right locations, and, as you have already said, at the right scale, have you got other insights that you can share with the Committee, about the types of industries and entities that would be effective? How do we encourage those to be developed? I think one of you mentioned whether the private sector takes that on, or the government plays a role trying to assess electricity industries to develop. Does anyone have any comments they can share with the Committee on that?

Mr TRACEY: I will jump in, just quickly, because I would also like to have my comments backed up by Ms Howard. The sorts of what we need—if I can specifically talk about [inaudible] the ability to provide us with renewable energy. If you look at the scale of the Star of the South project, it is going to Australia's largest renewable energy project. The project that has been touted for Newcastle is going to be five times that size. It is significant, what has been touted, but the problems we have with what appears to be opposition, federally, to the sort of projects we are talking about, a [inaudible] regime that has not yet been fully developed and continues to move away, a two-step process in approvals because of the nature of these projects being in Commonwealth waters, where you have an application to effectively measure the resources of wind, distance, strength, consistency, with what is happening with fires and all those sorts of things, and then you need to have a separate application to fill, which we do not see in the oil and gas industry.

They seek to provide front-loaded bonds for pre-commissioning works, which does not reflect the nature of the way renewable projects operate. They are also the sorts of bonds that we do not see in the oil and gas industry. So you front-end the expenditure that is required, to attempt to make these projects even more unreliable, because there is a possibility to do that. It is a problem that we see, the way we see - particularly by the federal government - to these sorts of projects. We really need some significant change there, but the one thing we know about Victoria, with the Star of the South project, is the significant support it has received from the state government, and that is what has given it an ability, on the project, to continue to push on what is really the first stage; they are entering it now, and construction starts in 2023. It is significant, what we are seeing, in terms of state government support for the project. The advantage of that project, of what is being proposed in Newcastle, is that at 10 gig, we will see significant renewable manufacturing coming out of that project, because of the scale. Those sorts of things, for a region to transition, are significant.

Ms HOWARD: Our division of the union represents maritime workers, so clearly we have got a focus on the maritime sector. But you are absolutely right; there needs to be these kinds of developments across all sectors of our economy. So, clearly, energy—electricity generation is a key area. Mr Tracey has covered the role that offshore wind can play there. There have been a full number of plans that have been put out, particularly over the last six months. We have not, as a union, discussed and endorsed any particular one. Certainly the Beyond Zero Emissions Million Jobs Plan is one, but there are a number of other plans out there, that look across the

whole economy. There is a massive need to invest in buildings, to reduce the emissions from buildings, and also make them more liveable.

Transport is another major area, where we need investment to build new infrastructure and, of course, supporting industry itself—ensuring that our existing industries can be repowered with renewable energy or, if they use gas as a feed stock, to be able to develop mechanisms to use hydrogen, or any other way. So, there are a huge number of areas, and there is a huge amount of work that needs to be done. Fundamentally, I think that is the political approach that we need to take, to look forward to what are the new industries, and look forward to what are the jobs that can be created and, from our perspective, ensure that those are going to be good quality jobs, and that they can pull us out of this economic crisis that we are in right now, as well. That is the other challenge; there have been lots of cancellations of renewable energy projects, particularly in New South Wales. There are a lot of smaller, marginal projects already dealing with issues with transmission connection. So there is a lot of work to do.

The CHAIR: Mr Colley, you had your hand up earlier.

Mr COLLEY: Yes. You can, obviously, look at what the Victorian government is seeking to do in the Latrobe Valley, where they have incentives to improve the transport links to the area, and where they have been investing in the social infrastructure around public health services. They have also been seeking to attract other new industry to the area, including the light commercial vehicle—electric commercial vehicle manufacturing plant. When we think about long term and large scale, one of the things I think the Committee should be looking at is the Grattan *Start with steel* report. I am not sure whether that has come across your desks in this exercise, but that was a major exercise by the Grattan Institute in saying that we could actually develop an export steel industry based around green hydrogen.

There are a lot of permutations for that, because they actually said the sheer amount of green hydrogen is large, but it still does not employ that many people. Most of the jobs in renewables are actually in manufacturing and installation, not in operations. Offshore wind, as the MUA knows and has noted, does involve more ongoing jobs than onshore wind and onshore solar power. But the Grattan Institute talks about having a much larger export steel industry. They talk of having a steel industry that is 20 times the size of the existing Australian steel industry, and that it could be based in central Queensland and in the Hunter Valley of New South Wales.

Ms FELICITY WILSON: We would prefer the Hunter Valley.

Mr COLLEY: Yes. I see the South Coast Labour Council is also keen on the Port Kembla site, because BlueScope Steel at Port Kembla only uses part of its site now. There is an idea about basing more of the green steel industry there. But the issue about the Hunter Valley, of course, is that a green steel export industry that is much larger than the current steel industry in Australia would help soak up the workforce that currently exists in export thermal coal and export coking coal, for that matter. Coking coal is primarily for steel-making, but probably by 2035, or 2040, steel mills that produce green steel will start being built. Australia does have a fantastic renewable energy resource and is arguably, according to the Grattan Institute, a great place for a green steel industry.

It is actually much more cost effective to produce the hydrogen here, and use it to make steel here, than it is to ship the hydrogen overseas. It is actually an expensive product to transport. Those are very interesting ideas that I think the Committee should be looking at, but a green steel industry will not happen spontaneously. There is going to have to be a lot of legwork done, and a lot of facilitation done, to make it happen. There is, obviously, a role for government in facilitating, removing the barriers, and doing the pre-commercial stuff around getting new industries going. Thank you.

Ms SMITH: If I could just jump on the back of what Mr Colley said, we think that there are widespread opportunities for manufacturing—particularly in renewable energy, as he has touched on. As the union representing manufacturing workers, we are very keen to explore that. The other point I would make, in terms of alternate industries, is that regions like the Hunter and Newcastle, as I said earlier, have world-class manufacturing facilities already, which could be used not just to manufacture renewable energy, but also to manufacture other things. I recall that our Premier said—I think she was at a business dinner in London some time ago—that she wanted to make New South Wales the manufacturing capital of Australia. I think it is fair to say that, so far, that ambition has not been realised, because the government has missed a lot of opportunities in this area, to support Australian manufacturing and local manufacturing.

I think, particularly, the COVID crisis has really thrown into the spotlight just how important domestic manufacturing is going to be, and what we need to rebuild our economy post-COVID, but also to shore up our supply chains, and our capacity to manufacture and make goods here, for ourselves, that we need to use, rather than digging up the raw materials, shipping them overseas, where industries in other economies make them and

do the value-adding process, and then buying them back here. That makes no sense, when we have such abundant natural resources and such a world-class manufacturing sector. Also, quickly, in Newcastle and the Hunter we also have access to world-class research facilities, in the field of renewable energy and resources as well. So there is every opportunity there for us in manufacturing, not just in renewable energy but procurement as well, infrastructure projects—all of that sort of thing. It is just a case of actually having a targeted plan, and an investment, and the government playing a driving role in that, to give industries and workers and communities some certainty. That is all we are lacking.

Ms FELICITY WILSON: I want to ask a question on skill, but first I will flag that on the first day of our hearings we heard from some government agencies about some of the work that they said they had on the way. It might be just a yes or no answer from each of you, about whether your members have been involved in some of these. One was the Liddell Task force and the report, and the other was the coal-reliant communities transition work in the Upper Hunter we were advised was underway with another agency. Can you let me know to what extent you may or may not be involved with that?

Mr COLLEY: The union has not been involved in the Liddell Task Force at all. We did ask to be involved but we have not been. I understand the Liddell Task Force report has been completed but it just has not been released yet. The other thing you mentioned was—could you repeat that again?

Ms FELICITY WILSON: Coal-reliant communities transition.

Mr COLLEY: Is that the \$50 million fund that was announced by John Barilaro in the last few months?

Ms FELICITY WILSON: This was an example from the Department of Planning, Industry and Environment around work that they were looking at, not just for the Hunter Valley, but that would have specific suggestions and recommendations for the Upper Hunter as well as other coal-reliant communities. It is a piece of work they said they are currently undertaking within the agency.

Mr COLLEY: I am not immediately aware of whether my part of the CFMEU is actually involved in that. We have an office in Cessnock and it might well be that district office that is involved in that [inaudible].

Ms FELICITY WILSON: Are you happy to take it on notice and let us know? Equally, for Mr Tracey and Mr Colley, let us know afterwards if your organisation has been involved at all.

The CHAIR: If you can take that on notice. In the interests of time I will move to other members. Mr Chanthivong?

Ms FELICITY WILSON: Could someone ask a question about skills?

Mr ANOULACK CHANTHIVONG: Thank you very much for your time in attending today. The three submissions are quite consistent, that is, you understand that there is a trajectory away from thermal coal and that we need to have what is a fair transition, particularly for those affected communities. I would also say that whilst a lot of our commentary has been on the Hunter, we should also focus on our friends in the Illawarra as well, and try to track opportunities there. How do we get the value added supply and production chains established in the most affected communities, as part of achieving a fair outcome, a fair movement away from the industries that have been most affected?

Ms HOWARD: I could start on that. One of the issues is scale. Just - take renewable energy, as long as projects are at a small scale, then there is not sufficient incentive for local manufacturing to take place because, of course, those manufacturers need to know that they are going to have a market to sell to. That is the real difference we have seen between the offshore wind project in Victoria. They say that they may be able to procure the steel locally, but the other parts of the turbines they are likely to have to import, whereas, the proposal for Newcastle - because it is on such a large scale - they say that that creates the rationale to be able to actually set up manufacturing in Newcastle, which can then also feed into all the other industries as well, whether that is onshore, electric vehicles, all kinds of other things. Scale requires a plan, and that is one of the things that we are definitely lacking.

Mr COLLEY: The report that the union released at the end of 2018 was called *The Ruhr or Appalachia? Deciding the future of Australia's coal power workers and communities*. That has a number of policy measures in it. You can also look at what the German Coal Commissioner is doing in Germany, around specific strategies to rebuild or redevelop those communities, so they have a prosperous future. It is worth bearing in mind too, as well as a plan going forward in Germany, the Germans have the experience. They shut down their entire underground black coal industry, albeit over a period of three decades, but it is completely closed now. It used to employ hundreds of thousands of people. It still employed 160,000 at the beginning of the 1990s, and now only employs a thousand people on, basically, safety, monitoring, and rehabilitation.

They did that without a single forced redundancy. They found jobs for all those people, or those people worked to retirement. There is that experience, that other countries, and the New South Wales government, can look at and try to work out how to do it. You need to avoid what is going on in the United States. The Appalachia region has basically been in recession for generations, thirty to forty years, as a result of the decline of the domestic US coal industry, and without any major plan to rescue it. We want to avoid that scenario in New South Wales. Look to the German solution. The Dutch have also got good experience. If you want to look at what to avoid, look at the United States and Appalachia, which is a bit of a disaster area for communities and working people.

Ms SMITH: I agree with what Ms Howard and Mr Colley have said. One example I might bring up is Tomago Aluminium, a major employer, one of our major sites of membership in the Newcastle-Hunter region. I think it produces around 25 per cent of Australia's primary aluminium, yet 90 per cent of that is shipped offshore, mostly to the Asia-Pacific. The outlook for aluminium in Australia is actually good. We have abundant natural supplies. We have got good plants, and we have got good processes here. Yet, we produce it with very high domestic energy costs, then ship it overseas, rather than using it to value add and flow down the line of supply chains here in New South Wales. As Ms Howard, Mr Colley, or Mr Tracey, have mentioned earlier, using hydrogen to make green steel, that is just one simple way that we could help shore up the future of Tomago, and also contribute value adding to our supply chains.

As I said before, there are numerous opportunities here in New South Wales, to take our raw materials and our existing manufacturing and our existing research capabilities, and use them to diversify the local economies, but also have flow-on effects down the economy more broadly, because manufacturing is linked to supply chains in so many different parts of the economy, including energy, construction, agriculture, transportation and, of course, raw materials. There is a lot of opportunity there, but at the moment our vision, if you like, on this is pretty limited to: dig it up, ship it overseas, then buy cheaper manufacturing goods from overseas.

Ms HOWARD: I think it is also important for people to recognise that the Integrated System Plan for the new electricity system - it is great that there is that plan - but it is being done on a purely technical basis, there is no aspect of that that takes social issues and the issue of transition into consideration. That is, of course, before we even get into the fact that—that is the map of the wind resource, so the wind resources that we are using are only based on what is on shore.

Mr ANOULACK CHANTHIVONG: Thank you. I think it is important to look beyond digging it up and shipping it overseas. We have a skilled workforce here, and it is about trying to find the plant and the support to avoid the Appalachia outcomes that we have seen in America, and I would also say in parts of England, in Wales in the north-west where the coal communities have been highly impacted over generations. How much do you think it will cost to achieve a fair outcome for those communities that will be most impacted, when we transition, or transition too rapidly, without considering the consequences? Relating to the estimated costs, have we invested enough at this stage to meet the objective of achieving a fair outcome?

Mr COLLEY: In *The Ruhr or Appalachia?* report we did not publish costings but there were back-of-the-envelope ones. What you have to understand is that, the workforce measures, which are very immediate workforce measures, are actually relatively cheap. We estimated that, to provide no forced redundancies, and skills and training and transfers and so on, it would cost \$500 million, but over 20 years. That was the amount for Australia, not just New South Wales, in the coal-powered sector. But the costs of decommissioning existing power stations actually run into billions just by themselves, that is just the decommissioning and rehabilitation of those sites. That in itself is an industry stimulation measure, and can go on for one or two decades easily.

In Germany their package has €40 billion, again over the period to 2038, but that does not include the immediate workforce measures, because they are actually considered to be quite low cost. The main money cost is in industry policy, around diversifying industry, facilitating new industry. They are the big ticket items. Looking after the immediate workforce, which is where you get the most political resentment, and the most political infighting, is actually a relatively cheap exercise. I did make that point earlier, that it is a relatively cheap exercise, to look after the immediate workforce involved, and make it clear that no-one is going to be a big loser out of this.

Mr JAMES GRIFFIN: Thank you all for your contributions today. We have heard over the past two days a great deal of evidence that has, in large part, been light on detail in terms of what you are exactly talking about, which is the communities impacted by the shift to a low carbon economy. In saying that, the view and comments that Ms Smith made, around the economic opportunities of renewable energy must be shared by the workers who have powered our country for decades—I think that is a sentiment that has been shared by a lot of people who have made contributions. One of the themes that I think is the most practical way to achieve that focuses on the concept of the renewable manufacturing industry, and the concept of using hydrogen to power

industry to create the turbines, or batteries or whatever concepts and elements are required in the supply chain of renewables.

Where we have struggled, or a challenge for that, is actually understanding what is required to do what Mr Tracy was talking about, which is to transition fair, good and well-paying jobs. Is it a question of identifying transferable skills, complete retraining, or a blend of both, and are those sorts of discussions things that the Committee should recommend start planning for now as a part of the transition? Because, as I understand it, trying to find well-paying adjacent industries is one of the critical elements of solving how we care for and support the communities that are impacted by this.

Ms HOWARD: I can have an initial go. Absolutely, there needs to be planning - and it is not just planning, it is support, down to an individual level. We had people at our most recent national conference from the Netherlands who spoke about the transition plan there. That came about as a result of the government deciding that it would close its coal-fired power stations. Every worker at that coal-fired power station was given an income guarantee for, I believe it was three years, and also a budget that they could use, to access whatever training they wanted, and assistance moving into the next industry they were in. That is in the process of happening right now. Again, we need investment in all of those things, from planning right through to the assistance for each individual and, critically, the industries that they will be moving into, as well. It is a matter of putting together that whole package.

Mr COLLEY: On the skills and retraining issue, the Clean Energy Council recently released a report about what they saw as the requirements from renewable energy and the skills mix. They basically said there was not a strong correlation in the skills mix, between coal mining and coal power generation and renewables, and it would actually be quite difficult to transfer people. And that is aside from the issue of lower wages and conditions that would be applying in a lot of renewables. The Grattan steel plan is interesting, because they were looking very much at the skill sets of coal miners and coal power workers, and what was required in the steel industry. They said that there was much greater overlap of the skills required. There are quite a few exercises in looking at skill requirements and skills mix in industries of the future, as well as where workers are now. It will be a huge job but the Grattan steel report is an interesting example of looking at that skills mix and how you can try to be most efficient about transferring workers from one industry to another.

Mr TRACEY: If I have a look at the industry that we are strongly advocating—offshore wind—we see the oil and gas industry, where most of our members in the maritime sector work—on vessels, rig anchors and the like—there is a huge transferability of skills there. We are seeing vessels in the North Sea being repurposed for farming technology in terms of wind turbines—so anchor handling and this sort of stuff, where you partake in the old anchor handling vessels and repurpose them fit for the sort of work that they will be doing in and around farming technology for wind turbines. There obviously is some retraining but a lot of the skills around some of the maintenance workers in the area—the fitters, the riggers—all of those sorts of skills are transferable across this particular renewable industry, and certainly for our seafarers who work in the offshore oil and gas industry. In saying that, it is a sunset industry, there will be a lot of those skills that will transfer across to offshore wind and so I can really only speak from our knowledge and experience of this particular industry.

Ms SMITH: I will quickly say that from our perspective a lot of our members' manufacturing skills are pretty adaptable but I think a first step will be to conduct a skills audit that will assess what our skill levels are and identify opportunities for retraining or reskilling and capacity to adapt to different industries. I also think opportunities to access to retraining or reskilling should be made available to impacted workers prior to any retrenchments or redundancies—that they do have the opportunity to assess their future and whether they do want to retrain a move into a different industry [audio malfunction] otherwise. It will play a critical role in this. As I said before, investing in our TAFE and VET sector more broadly will be very important to that.

We know that for successive years there has been lack of adequate funding and lack of resourcing for a lot of our TAFE sectors, particularly in regional communities where they have shut down or they offer very limited courses and so it is sort of like we are planning for jobs of the future while at the same time cutting our own throats by not adequately training the workers to work those jobs for the future. The other thing I would mention on future projects, particularly government procurement projects, a great opportunity—or an idea to consider—would be to include apprentice quotas or targets and an opportunity to train the kids for local young people to have firsthand, on-the-job experience in some of whatever those future industries are, as well as to look at industry partnerships between TAFE and local industries.

The CHAIR: Thank you all very much for your time this morning and the amount of detail we were able to cover in this hour. We may send you further questions in writing. Your replies will then form part of your evidence and be made public. Would all of you be happy to receive questions and provide written replies to those?

Ms HOWARD: Yes, but I can say in response to that question, the answer is no.

The CHAIR: Okay. Ms Smith and Mr Colley, are you happy to receive written questions?

Mr COLLEY: Yes.

Ms SMITH: Yes.

The CHAIR: Thank you all again for your time this morning and your engagement with the Committee. The amount of time, thought, effort and commitment you put into this issue is greatly appreciated.

(The witnesses withdrew.)

(Short adjournment)

KRISTY WALTERS, Advocacy and Training Lead, Community Power Agency, affirmed and examined

AMANDA CAHILL, Chief Executive Officer, Next Economy, before the Committee via videoconference, affirmed and examined

The CHAIR: Do you want to make an opening statement?

Ms WALTERS: Yes, thanks a lot for inviting me along. The Community Power Agency is Australia's leading community energy organisation, driving a faster and fairer transition to clean energy. Community energy is where communities come together to develop, deliver, and benefit from renewable energy or energy efficiency projects. In the past 10 years, we have supported over 30 communities across the state to develop their own projects, and have worked closely with the New South Wales government to develop policies and programs that support community energy. There are many opportunities that arise from the clean energy transition. Diversifying the regional economy is an essential ingredient for a just transition.

We need to steer away from the mentality that a single large new industry will replace the old. Community energy offers a compelling model for capturing the immense benefits of renewable energy, including jobs and investment for regional communities in New South Wales. For every \$1.5 million invested in renewables, almost eight jobs are created, compared to only 2.6 jobs in old energy production like coal or gas. Community ownership models can provide better returns and bank investment. For example, does anybody here like 4 Pines or Young Henry beers?

Mr JAMES GRIFFIN: A 4 Pines man.

Ms WALTERS: Great. So Pingala, our Sydney-based community energy group, has partnered with both those breweries to make them powered by community solar. The way it works is that Pingala provides a platform for community investment of a solar system for the brewery, which then pays for the electricity consumed, with the proceeds being returned to the local community investors by a power purchase agreement, for a return of up to 8 per cent. That is just one of several models. The benefits of community energy are many. It helps to diversify our local economies, increase system security, improve people's energy literacy so they are more able to have lower power bills, and provide social licence for large-scale renewables. However, the sector faces several barriers. The New South Wales government has a critical role to address these barriers, and ensure that the transition to clean energy can truly benefit everyone, not just those who are shareholders of large energy companies.

The CHAIR: Dr Cahill, would you like to make any opening remarks?

Dr CAHILL: Before I begin, I would like to acknowledge the traditional owners of the land I am calling in from, the Jagera and Turrbals Nations, and acknowledge that the land that we are meeting on has never been ceded. The Next Economy has spent the past six years conducting a range of community forums, workshops, and meetings across regional Australia, including a number in communities across the Hunter and in New South Wales. Across the study we have had hundreds of representatives of different industries, local government, renewal environment groups, social service organisations, and general community members. The question that we have been exploring is: how can changes to the energy sector diversify and stimulate regional economies and create new jobs?

I would like to share some of the reflections that have come out of that work. In terms of the economic opportunities that applies specifically to energy, I think we get stuck on the idea that it is just construction jobs. Actually, there are a number of jobs engaged in the generation of renewable energy, storage, technology - both manufacturing them and rolling them out, upgrading transmission infrastructure, but also energy efficiency programs, and manufacturing of renewable energy, types and products. That is all potential for the manufacturing of green metals production, such as green fuel.

Also noted in the forums is the fact that it is not just renewable energy itself that creates the jobs, but it is the potential for having more affordable and locally available energy, to lower energy costs and boost productivity across all sectors, including agriculture, housing, transport, and tourism and other industries as well. We have found that there is really broad public support, and increasingly strong public support, and acceptance that the energy system is transitioning. We have been hearing increasingly loud and significant demand for the support for regional and government bodies, to plan the transition to renewable energy. Acknowledging that power stations will close, although people disagree on the time frame.

There was a lot of talk, more recently, also about renewable energy building long-term resilience in regions to external shocks, and increasing the liveability of regions. People highlighted the need for better and more coordinated training of workers in the energy sector, and the need for industry, government, and tertiary institutions to work together more closely, to develop the workforce of the future. Finally, there is a great deal of concern that the government has been sending mixed messages about the energy transition, and this has actually stifled investment, and fuelled greater social division across the country. Deeply surprising were the number of people representing industry that wanted clearer policies and appropriate regulation to support industry through change. On this note, I would like to commend the New South Wales government for holding this inquiry and opening up this conversation.

The CHAIR: Ms Walters, what is the scale of project that Community Power Agency would be involved in? Yesterday the Committee had a discussion about cooperatives. How are they similar or differ to cooperatives?

Ms WALTERS: Cooperatives are one type of a model that community energy can use as the ownership model. At Community Power Agency, we generally do not start our own community energy project; we support other communities on their journey to start them. However, I will say that we are working on one cooperative community energy project at the moment, which is building a solar garden, which is the way for locked-out energy users to access the benefits of solar energy. It works by building an off-site solar garden, like a solar farm, and then people become members of the cooperative which owns the solar garden, and the electricity generated from the solar garden is sold to the electricity grid, and the profits from that go on to the members' electricity bills. So it is like the same benefits you would get from a rooftop solar installation.

The CHAIR: What is the scale of the projects you deal with?

Ms WALTERS: Yes, that project is a 1 megawatt solar installation, but there can be, generally, community energy can be, anywhere from a 50 kilowatt system on a community building, say the local Rural Fire Service station, or up to 20 megawatts. It is kind of in that sort of range.

The CHAIR: Are all the projects similar to the first one you described, in that they are connected to existing transmission infrastructure, or are there ones linked to stand-alone power stations or other grid structures?

Ms WALTERS: Yes, the example I mentioned, the solar garden connects to the distribution line. So it is able to avoid a lot of the grid connection issues that larger renewable energy projects are currently facing. But, for instance, the Hepburn Community Wind Farm in Daylesford in Victoria is connected to the transmission line. That is a two megawatt wind farm. There are all different scales.

The CHAIR: Your submission, like many others, calls for the establishment of a just transition authority. Particularly in relation to some of the communities we have mentioned around the Hunter, but also other areas, what role do you see your organisation playing in that transition process?

Ms WALTERS: We find that when communities are transitioning -like in the Latrobe Valley - when there is a transition authority established, if there is not a vision for what communities want to see, and the future that they want to have, then they can often feel left behind in that transition process. We would see our role in some kind of transition authority as doing community engagement, and taking the local community on a journey of figuring out what it is they want to see in a sustainable low carbon future, and how we can help enable that, through our expertise and innovation.

The CHAIR: Dr Cahill, I will take you back to your introductory statements and the work you have done in the Hunter. I seek your assessment of the role the New South Wales government has played in preparing, planning for, and supporting the community through the transition that is occurring.

Dr CAHILL: I think people would like to see a lot more coordination. I think there has been some interesting work that is being led, at the moment, by inspired regional councils, trying to come together to work out what the issues are facing the area, and they are trying to work with state government, so it is coming from the ground up. People have really welcomed the announcements around the Renewable Energy Zones as a step in the right direction. The state government taking the lead, and thinking long-term about the transmission infrastructure, that is needed, and some planning around that. The Hunter, similar to the Latrobe Valley, has been

talking about transition for quite a few years, and it has been quite messy. There have been lots of different groups talking about transition, but they have not been pulled together.

You have community groups over here, and then you have some more government focused and industry groups over there talking about transitioning in a slightly different way, and then unions are having a different conversation again. There is more work to be done - this is what people are telling me - to bring all levels of government together, with all the different groups represented, to try and figure out the range of issues, because it is not just about energy; it is about diversifying the economy, and to invest in other industries, workforce planning, and development. Each region is different, too. There is a strong feeling that there needs to be regional zones, as well as a state coordination across different regions.

The CHAIR: To follow on from that, we had a good discussion with the unions about skills. They need for their members who, potentially, could be working in a coal powered industry, who lose their jobs, a job which has hard fought pay and conditions, and what role do they move into next? A lot of concern is about "just transition", which is a buzz term that will result in their members potentially losing their jobs. What role would you like to see, and what sort of investment and process would happen around skills retraining and that workforce planning that you flagged?

Dr CAHILL: There are a couple of different parts to that. One is the role around getting regulations right. The conditions in those coal plants are not an accident, people really fought for them. How do we make sure that we have regulations, and workplace health and safety regulations, pay, conditions; we have high expectations across the renewable energy sector. That is a starting point. The second point is around training needs. It is interesting, I was in Gladstone, Queensland, recently, and there is a really interesting discussion led by industry saying, we should not just be thinking about the specific skills around renewable energy - like an electrician doing his trade in a renewable energy project - we should be getting different industries to talk to each other, so that an apprentice can be learning their trade by working on that project, but also then going into the aluminium smelter, and being able to move across, so they have diversified skills.

Because often, the trade and the certificates are very specific. It is about thinking about the qualifications that are in place. To actually get more industry development - I am hearing from the universities and TAFE - go back to the old system, where industry was a lot more engaged in working with tertiary education institutions, to make sure that we are getting the right skills in the workers. The last point was also about investing in skills for the future. One of the issues is that we just do not have enough skilled people in emerging areas, such as some of the digital technology that we are going to need around energy demand, and some of those other areas. There is a lot more work to be done around skills development. The other irony in this, of course, in a lot of regions, there is actually a shortage of workers at the moment. We are talking about a loss of jobs, but we are also not talking about the fact that we are not doing the jobs that are actually coming up. We need more workers to be prepared.

Ms FELICITY WILSON: Thank you for joining us today. This conversation about transition and skills, and looking at the future needs of communities, one of the exceptions in the feedback from industry so far is that, while there is a strong desire for there to be a transition authority for certification - or more broadly, that some of the commentary received about the Latrobe Valley - without being critical, is that there are still question marks. There are a lot of things that have not yet been resolved, such as what type of industries, what type of jobs need retraining, and it seems that even with that authority, there seems to be a lot of question marks.

For us to take on the advice about looking at the transition authority as a model, could you give us some specific guidance around a model, and the implementation about how to make it more effective, to make sure that from upfront we have something designed that is going to meet the real needs that these communities have. Noting that we cannot define and structure everything in advance, but we want to make sure that as we have some of the time, as you mentioned, we want to get it right for these communities; could you let us know a bit more specifically about the model and implementation, how do we get it right, if we go down that traditional transition authority path?

Dr CAHILL: Can I comment on that? The first thing about the Latrobe Valley that we have to keep in mind is that it was not planned in advance, it was very much a reaction to the announcement of closure, and a closure with five months notice, or something crazy. A lot of that first period was really dealing with the crisis. It is a different situation to the conversation now. New South Wales has an opportunity to establish something in advance, and to take a much more holistic view, which is, you can look at the whole state, and look at the energy infrastructure and planning and the changes that are happening, and take a more holistic point of view on a statewide level, and do the analysis at a regional level, rather than just focus on one specific region and a crisis. It was a very different kind of approach, and they were playing catch up for a very long period of time.

And, to be forward thinking. Thinking longer term. Everyone quotes Germany - I am sure you have heard about Germany. The fact that they were talking decades ahead gave them leeway and time to have a different kind

of planning and thinking process, where you can engage people in a much more productive conversation about where the opportunities are, and look at the trends in other industries, not just the energy sector. Being able to coordinate across different sectors, and being able to plan for closure well in advance, so you can do things like offer early retirement to workers well before anything closes, so you can move younger workers in to fill those jobs. The whole process is very different. That is the advantage of doing it in advance, rather than in reaction to a closure.

The CHAIR: Ms Walters, did you want to add anything?

Ms WALTERS: I think Dr Cahill covered most of it. I would just say that there is a real opportunity to plan this out well, and to engage communities on what they want to see this authority look like. As I am sure you are aware, most of our coal-fired power stations are in the Hunter. That is obviously the logical place for it, and that is also the logical place to ask communities what they are looking for.

Ms FELICITY WILSON: I know you have spoken a little bit about skills as well. As the Chair said, we spoke with the unions about that too, and we have had quite a number of different people speaking about it with us. Knowing that we have got, hopefully, the longer term—but let us not wait too long—to look at some of this transition, do you have some examples of the best ways to look at shaping skills transitions? So part of it might be through TAFE, for example. Have you got any examples or evidence that you could share with us from existing industry or entities helping with that school transition, or even unions helping with their membership? What is your advice about the best way for us to look at structuring a skills transition over time?

Dr CAHILL: That is a big question. This might seem a bit tangential, but one of the issues that has been holding things up, particularly with the unions, is political uncertainty around it. In some places, where people are now saying, "Let's just get on with it," and there is more acceptance from unions and industry and workers, is where they are getting the idea that this is not just about someone taking away their jobs. This is about acceptance that there is going to be closure, and it is going to take a really long time for us to manage, as well. Talking to unions, it is not actually about this job or this job. That job is not going to exist. Being able to be really clear politically around the future, and having honest conversations with people on the ground—the stuff that we have been doing, face to face—takes the politics out of the equation. You can kind of go, "We don't know time frames necessarily, but we can plan against technical end of life." That is not a political opinion. That just is, so let us get on with that planning process.

From there, things can move really quickly. Industry, unions, tertiary education, and government can start together to work out what other skills are needed, where things are missing—taking a more holistic view—and look at a region to see where there are current skill shortages, and how we can encourage people into those other areas. But there is also the fact that we do not have a lot of really good examples in Australia, because our whole approach to this traditionally, with industries closing, has been to wait for them to close, and then throw a whole lot of money at them. We have an opportunity to do it differently, and to take people along on that journey. Wherever they are at in their work life cycle, they can be supported.

Ms WALTERS: I guess this is a little tangentially also, but I suggest you look into the recent Sustainability Victoria report that it did on the community power hubs trials. They created three regionally based community power hubs in Ballarat, Bendigo, and in the Latrobe Valley. Their recent findings have shown that the \$1.6 million that they put into that program created 15 energy projects, but it also delivered economic benefits worth \$25.6 million. There is a lot that can be gained from supporting community energy, and supporting these community power hubs that really enable local communities to take their ideas, and give them advice and support to run with it, and transition from what they might be working in to now, to something that they want to in the future.

Mr JAMES GRIFFIN: We have heard a lot over the last couple of days about the importance of powering our manufacturing industry in a renewable way. One of the key points that a lot of people have made, from the likes of Beyond Zero Emission, through to the unions that we spoke to earlier this morning, was the role that hydrogen would play in that. Generally speaking, the electrification of the heavy industry cannot be done to a point, unlike hydrogen. Do you have a view on hydrogen's role and mix in renewables?

Ms WALTERS: I believe there is a role. I am not completely familiar with how that is possible in manufacturing. I know that there are, for example, manufacturing plants in South Australia, that manufacture steel, that are moving to using renewable sources to do that. I am happy to take that on notice and give you some more information.

Dr CAHILL: There are some manufacturing processes that rely on fuels that hydrogen can play a role in. That is why Japan and South Korea and Germany are interested in potentially helping Australia develop our hydrogen industry, so we can export it to them, because there is actually a limit to how much renewable energy

they can produce. In Australia we should not be talking about 100 per cent renewable energy. We should be talking about 200, 500, 700 per cent renewable energy, because the electricity is there. My understanding is that there are some processes that are fuel-based, but most of it can be electrified. The role of hydrogen, and the conversation we need to have as a country - because there is so much excitement around hydrogen, and rightfully so - is: Are we developing it as primarily an export commodity? Is it a replacement for gas? Do we need it for our transport systems, for example? So, being really specific around what we are producing hydrogen for, but also, how we are producing it.

We are seeing this hand in hand with the development of renewable energy, and we are producing green hydrogen, which is interestingly what Germany and Japan have been very specific about—that they are willing to import green hydrogen. Some of the international trade talks are now looking at different sanctions and penalties for countries if they are not looking at how they are reducing their emissions across the entire supply chain, so that the trade groups, if we are not actually developing green hydrogen—we can miss out on a whole lot of export opportunities in the future.

Mr ANOULACK CHANTHIVONG: In terms of your assessment on what is required to achieve a fair outcome for the most affected communities in the change to renewables, what do you think is required, compared to what is currently happening at the moment? Can you give an opinion or assessment on that?

Dr CAHILL: So what is needed that is not happening at the moment?

Mr ANOULACK CHANTHIVONG: Yes. I suppose what I am asking is whether there is a gap.

Dr CAHILL: A few months ago I would have said that we actually need to accelerate investment into upgrading our transmission infrastructure, but it is great to see that New South Wales is doing that, and now Queensland too by the sound of it—hopefully. That has been a big block to just moving things forward. Industry has been telling us that. I guess what else is needed is to put in place some policy and regulation, and to send a really clear message to investment, that it is not risky to be investing in more renewable energy and industries around that, that that money can move, because it has been waiting for a really long time. The policy uncertainty and some of the differences between state and federal governments, around what they are saying they are going to invest in, has actually held up a lot of that investment and industry making those longer-term decisions. That is what we have been finding.

Government actually stepping in and playing a leadership role in coordinating this and trying to figure this out and working with industry and unions and other players to figure out, "Well, what is our long-term roadmap for transition?" will actually enable a lot more to move quite quickly and smoothly as well. We can make sure we are looking after communities as we move ahead. The other bit that probably has not been talked about very much is the impact on lower socio-economic groups, or people who have been excluded generally from the economic system, and how we can use this disruption in the energy system to make sure they are not left behind, but actually that they benefit from the changes moving forward. For example, we could give low income households a rebate on their energy bills, or we could look at how they could access renewable energy generation directly, which would change their bills long-term. How do we look at how Indigenous groups can benefit from having their own community renewable energy? There is a lot more to be done thinking about those social aspects as well.

Ms WALTERS: Echoing Dr Cahill, it is really encouraging to see the New South Wales government announcing, I think, up to three Renewable Energy Zones now. We could see from the first one, which was announced to be three gigawatts, that they put out the tender and got back nine times that amount of interest from the industry. We know that the industry is keen to invest in renewables. The key thing to enable this to go smoothly is to make sure that communities benefit from it, rather than having it done to them. There is a lot of opportunity to create reverse auctions with a community benefit component, that assesses those applications to ensure that large energy companies that are putting in these developments look at what this is going to do to the community, as well as how they can involve them, and take the community along with them. We have done quite a lot of work on this.

One of my colleagues was part of writing a benefits sharing scheme that was specifically for wind developers. We have got a similar one for community energy in general. I am happy to share further ideas about how that could work. Putting in how these renewable energy developments are accepted is one way. To enable more community energy projects to take part, you could establish a feed-in tariff for mid-scale community energy projects at a slight premium, to enable those projects to be financially viable. It is a lot harder for community groups that do not have experience managing the complex energy space. Community power hubs go a long way towards educating communities around how to engage with these developers, to make sure that they get the best outcome. There is a multitude of ways that community engagement can be done, so that community benefit can be shared from renewable energy projects.

We are finding that people who are involved in community energy projects are much more able to negotiate better terms with larger renewable energy developers, or even do projects themselves. There is a great example in New South Wales of the Sapphire Wind Farm, which was a developer-community partnership. It was the first one in the state, and has had lots of really great uptake. The other thing to back this up is, if community engagement is not done well—and the wind industry has experienced this—then there is a real threat that communities will just say no to this kind of investment. We do not want that to happen. It is really important that community engagement is done well in these projects.

Mr ANOULACK CHANTHIVONG: Structural adjustment is always very difficult to do. In the past the nation has not done as good a job as it should. Are there any things that we should avoid doing, that could result in a really poor outcome for some of the most affected communities? For example, we want to provide some support and training for communities and workers that are most impacted, but often that level of support is inadequate. We try to pay for structural adjustment too cheaply, and we do not invest enough. That is one example that comes to mind. Are there others that you are aware of, that we should avoid doing, to ensure that structural adjustment is fair, and produces longer lasting economic and social benefits?

Dr CAHILL: The first thing is to not wait until there is a closure. We need to be thinking five, 10, 15, or 20 years ahead, and we need to be open about that, and have that conversation broadly with the public, about the fact that we need to be thinking long-term about this. This is happening. We need to engage people around the pumping of that process. What is needed? Different regions are going to need different kinds of support. That is the first thing—grasping this, and taking a long-term approach, before any closures happen. That is probably the main thing to avoid—waiting. We also need to avoid this continuing to be a political issue, instead of a technical and economic one, which it is. Having that bipartisan support moving forward is really important.

Ms WALTERS: It would be important to ensure that everyone in those communities has some kind of access to whatever benefits schemes you are setting up. Not just the people who are directly impacted through losing jobs or coming out of the sector, but also the ancillary services, or the local shop that does not have all of those workers buying their lunch there every day. We need to think about what other community infrastructure will be impacted by jobs changing or industry moving or closing, or whatever it might be.

Dr CAHILL: I would agree with that. There needs to be a long-term approach to diversifying the regional economy, and building on existing strengths in other industries as well, not just trying to deal with that one impacted industry or group of workers.

Mr ANOULACK CHANTHIVONG: Have you done any analysis on how much public investment might be required to produce a fair outcome?

Dr CAHILL: There is a lot of analysis and there are a lot of different figures out there. It is about being specific about which element and region we are talking about. That is the challenging part of it, around the analysis. At the moment there are so many different scenarios, so there are so many different kinds of figures. There is probably some work that needs to be done around very specific scenario planning, which AEMO has done—the Australian Energy Market Operator. The Clean Energy Council is doing some work in that area as well. We need to be specific about what we are talking about.

Ms WALTERS: I would echo Dr Cahill's thoughts on this.

The CHAIR: Thank you both very much for appearing before us today and for your organisation's engagement with our committee processes. The detail and information provided is really helpful in our deliberations. We may have some additional questions that we will seek to ask you. Your responses to those questions will form part of your evidence. Would you be comfortable providing written replies to any additional questions the Committee may have?

Ms WALTERS: Yes, that is fine.

Dr CAHILL: Absolutely.

(The witnesses withdrew.)

(Luncheon adjournment)

PATRICK JOHN HARRIS, NSW Branch President, Public Health Association of Australia, affirmed and examined

PETER TAIT, Member, Core Group, Ecology and Environment Special Interest Group, Public Health Association of Australia, before the Committee via videoconference, affirmed and examined

BRADLEY JAMES WEBB, Chief Executive Officer, Samaritans, before the Committee via videoconference, sworn and examined

The CHAIR: I welcome our next session of guests. Would any of you like to begin with a brief opening statement?

Dr HARRIS: Okay. The Public Health Association of Australia [PHAA] is the leading national peak body for public-health representation and advocacy to drive better health outcomes through evidence-informed policy. I am the president of the New South Wales branch, and Dr Peter Tait is a member of the Core Group of the Ecology and Environment Special Interest Group. Peter is also a GP, and I am a senior research fellow and deputy director at the Centre for Health Equity Training Research and Evaluation at the University of New South Wales and South Western Sydney Local Health District. Together, our expertise is on the intersections between public policy and public health, including sustainable energy. We are delighted for the opportunity to have a meaningful and open discussion about energy and public health. One of the major issues facing a transition to sustainable energy is the need for a better informed public, and these types of forums are an opportunity to achieve public and political support for the shift to sustainable energy production.

It is worth stating our overall interest in sustainable energy. The evidence linking public health and energy, as articulated in our submission, is that a just transition to 100 per cent renewable energy sources is necessary as soon as possible, if not immediately. That transition is necessary for several reasons. Firstly, the aim must be to offset the likely calamity to health and wellbeing that will come with anything above a 1.5 degrees Celsius rise in temperature levels. The evidence of the health impacts from climate change induced by unsustainable and polluting energy is overwhelming, and cannot be debated. In addition to our submission, for an overview of this evidence I refer the Committee to *The Lancet Countdown on health and climate change* and the Intergovernmental Panel on Climate Change [IPCC]—the latter produced a 2014 report. Chapter 11 in the report has a focus on human health. The first recommendation gave very high confidence for a positive change, which reads as follows:

Reducing local emissions of health-damaging and climate-altering air pollutants from energy systems, through improved energy efficiency, and a shift to cleaner energy sources ...

However, evidence alone is not likely to be enough. The reality is creeping up on us. This year's bushfires were a terrifying glimpse into our future, and where we have failed to take the advice of the IPCC. We also have a responsibility to our children, and their children, for us to act. Yesterday I explained to my 12-year-old son what I was doing today, and asked whether he and his classmates are concerned about climate change. He responded that they are, and that their main concern is how their generation will take action to clean up the planet, as our generation is failing to do this—he is 12.

Secondly, as we made clear in our submission, the global market for unsustainable energy—largely from fossil fuels and extractive industry—is collapsing. I note that this point in our submission came directly from the Reserve Bank of Australia. I will leave others attending this inquiry, such as the Australia Institute, to lay out that economic-focused evidence, but I would like to emphasise the need for the New South Wales government to lead from the front, rather than catching up. The much-touted virtues of new gas projects for the local energy market are undermined from a public health perspective.

For instance, the PHAA's recent submission to the Independent Planning Commission for the Narrabri Gas Project, which I can also table, recommended that the project not be approved, on the evidence that such projects are inconsistent with international, national, and state climate change policy commitments and targets to reduce greenhouse gas emissions and halt global warming; they pose public health risks in the local communities, arising from the release of chemical substances, resulting in air and water pollution with adverse effects on human health; and have negative effects on social determinants of health in the region, due to the impacts on cost of living, housing affordability, employment, and connection to country, with disproportionate impacts on low-income households and First Nations people.

Finally, I would like the Committee to note the inadequacies of the current New South Wales environmental and planning assessment legislation in supporting a shift to sustainable energy. The legislation needs reform to be simpler, while at the same time enabling a full consideration of the public health impacts of future energy infrastructure, both renewable or polluting. The legislation requires an explicit public health objective, which is currently missing. The current requirement for environmental assessments of state-significant projects in the legislation precludes any assessment of cumulative or regional risks, or benefits to the health and wellbeing of populations. The words "in the locality", as well as the emphasis on individual projects, or even stages within projects, are particularly problematic. The result is more, not less, polluting industry.

A more comprehensive legislative basis for energy project planning and appraisal - including business case developments that fully account for cumulative risks - is necessary if we are to move from sustainable energy production that benefits rather than risks the health of current and future generations. A state environmental planning policy on the public health impacts of sustainable energy would be a positive step. Ultimately, legislative support and policy support at federal, state, and local levels for a strategic framework for climate, and health and wellbeing, or even an Australian equivalent of a Green New Deal, is necessary. I would also like to table the first policy direction of a national framework for climate health and wellbeing, produced by the Climate and Health Alliance in 2017. It has a first direction which concerns rapid transition to renewable energy sources, and is supported by six policy recommendations.

The CHAIR: Dr Tait, is there anything you would like to say in addition to that?

Dr TAIT: I just point out three things from our submission. One is that it is actually our choice as a society to decide to prioritise the health and wellbeing of people, and the environment, in our energy choices, or to not do that. It is really important to take the full life-cycle impacts and benefits of various energy choices into account when deciding which energy choices we are going to use. We need to bear in mind that the communities who are involved in things like coal mining need a very proactive, planned, and just transition as we move beyond fossil fuels.

The CHAIR: Thank you, Dr Tait. Mr Webb would you like to make an opening statement?

Mr WEBB: Thank you, Mr Greenwich. I would like to begin by acknowledging that I am joining you from the land of the Awabakal people, and pay my respects to their Elders, present and emerging. I would also like to acknowledge the Wonnarua people who occupy the lands that were the subject of our submission, regarding the Upper Hunter. I am in esteemed company today, and I note that our submission is not an academic treaty by any stretch of the imagination. It was born out of the general frustration of the direction of political discourse, particularly in the 2019 federal election, and the intention of it was really to raise the issue of the social impact of transition.

When we are talking about the sustainability of energy supply and resources, the discussion tends to focus on an economic transition, not on a just transition. We wanted to bring to the Committee's attention the impact that this has on communities - particularly longstanding communities that have been working in the fossil fuel or the energy industries - and ensure that the transition plan for the state considers the needs of a social transition. As an ongoing organisation operating services in the social sector for over 35 years, Samaritans is there to pick up the pieces and support communities that are suffering as a result of economic downturn. Our goal is to ensure that their voice is heard in this process, and that they are considered in the consideration of transition.

The CHAIR: Thank you very much. I will start with the Public Health Association. From public health and social outcomes perspectives, how do we make sure that the transition to renewables does not increase people's stress, anxiety and negative health outcomes from the disruption that comes with it?

Dr HARRIS: I do not think it is a uniform anxiety about moving away from or towards something. Some people in the community have anxiety about fossil fuel production in their communities, other people have anxiety about shifting away from fossil fuels for job purposes and other people have anxiety about not being able to fill the gap in terms of energy consumption. As you would all know from a policy perspective, and this is the technical focus on evidence—as my colleague said, being overly academic does not help—from a policy perspective, what I think needs to happen is, just like you did at the beginning, to lay out the truth to people, that there is a move away, which is driven by market forces just as much as climate change. People need to get on board with that, and they have to realise that their jobs are eventually unsustainable. I think the way to do that, as policymakers, is to put forward some cogent and clear options for people, to offer them some alternatives, and not just to come in at a very late state saying, "This is what is going to happen." However, having said that, there is a real urgency around this. From our perspective, we advocate for a just transition to happen sooner rather than later. Yes, that is as much as I would say at this stage.

The CHAIR: Dr Tait, did you want to add anything to that before I move to Mr Webb?

Dr TAIT: Yes, please. I think it is a question of government leadership. As Dr Harris and Mr Webb said, people know that a transition is occurring. The recent decades, with a lack of government leadership, has actually made their uncertainty worse, because they are not only worried about climate change happening, and they are worrying about their economic and social futures, but they also do not know that anyone is planning to help them out. One of the very important things here is strong state and federal government leadership, so that the communities know that people are worrying for them, and are going to work with them. The second point being that, it is absolutely essential that communities are involved in planning the changes that they are going to be

involved in. That is both a democratic right but, from a psychological perspective, it will also enable them to manage the change much more effectively.

The CHAIR: Before I move to Mr Webb, what do you see as the role of public health professionals in the transition process? What role do you play in this transition process? Maybe we will start with Dr Tait.

Dr TAIT: Our role is to advocate for people's wellbeing. Taking that broad perspective over what needs to be done, bringing our clinical knowledge, and our public health knowledge together, to help inform the sort of ways that governments might approach the transition.

Dr HARRIS: I am just thinking about me personally in this space, as well as the association; my role is to advocate, and to ensure that policymakers and those who are in positions of power take on public health as a concern in the decisions they are making. That includes engaging with communities. I will give you a terrifying example from when I did some work up in the Hunter Valley recently. People were requesting a health impact assessment to be done, or a health risk assessment to be done, in a community in the Hunter. The Health department's response to them was, "Sorry, you do not have enough people to be involved in this study." It was literally a matter of hundreds of people that meant there were not enough to make the study robust. That is not an appropriate way of approaching the community in this space. In my opinion, public health people do need to get better at managing risks to community, and at communicating risks. I think the other way of looking at the problem is that we have a tendency in public health, sometimes, to over quantify, or make things overly technical, in terms of the way we approach the problem.

There is another way of looking at it, and the association supports this, which is to say, "Let us work with the communities on problems that exist to them." As Dr Tait was saying, that is a way of alleviating their mental health and wellbeing, while also looking for some really concrete policy changes about what matters to them. The problem here is that, in the big picture, we are going one way on this, as you said at the beginning. That is what needs to be managed. The input into that is going one way. That is a challenge for people at multiple levels of the system, for people who are proponents of projects, down to local communities. They all need to be brought in line. That is the role of the government, both to cajole, but also to regulate.

The CHAIR: Mr Webb, from your standpoint, what would you say as part of the social transition?

Mr WEBB: I would just like to pick up on Dr Tait's point, where he talks about the importance of democratic involvement in the transition process, which I concur with. Our position is that, in drawing on the concept of othering, which we see in a lot of the political discourse, we end up pitching one group against another. We referenced in the Della Bosca and Gillespie 2018 paper, where they say:

Framings of energy justice are innately political, constructed, and contested, with many energy transition initiatives assigning blame in the process of identifying solutions.

Our concern is that any kind of discourse in the transition discussion, that continually divides communities, and pits one against another, is going to mean that some of the coal mining communities that sit in our catchment will not engage with the new industries arising from the economic transition. Then, as a result of that, they will not participate in that democratic process around the transition. We need to be conscious of longstanding coal mining and energy production communities, and how we bring them into the discussion, in a way that is engaging, as opposed to othering them.

The CHAIR: The CFMEU earlier today highlighted that even the term "Just transition authority" starts to be seen as a threat to people who are working in coal-related industries and in coal communities. How do we get the narrative right to be both accurate but also respectful?

Mr WEBB: That is the million-dollar question, but that starts from one perspective, with our political leadership, and ensuring that our political leaders can actually come to a consensus on this matter, too, and actually not perpetuate the discourse in the way that it often does get perpetuated. We saw that play out in election campaigns. It is also important, for the issue of social transition, that we actually acknowledge in our planning documents—there is an absence in the planning documents around transition, of the mention of the mention of social transition, and the work that we need to do as communities. There is a strong focus on economic transition, but having that conversation around social transition is of critical importance.

Mr NATHANIEL SMITH: Thank you for joining us today. In my community of Wollondilly, and in the Illawarra area, many coking coal mines do a huge amount for the community. Mainly to the Samaritans, but also to the other two witnesses, what sort of policies would you put up to alleviate those community organisations that rely on those contributions from, say, mining companies in my area, for instance?

Mr WEBB: We made the point in our submission, we referenced the NSW Minerals Council Expenditure Impact Survey 2017-18. Some \$7.3 million in community contributions were made in New South

Wales by the New South Wales mining sector. In our region, that is about \$3.5 million across 375 community organisations. Those community organisations range from us, the Samaritans, through to organisations like the Hunter Medical Research Institute. I think that will disappear for those organisations, because emerging organisations, particularly in the environmental space, new organisations, are not going to have the ability to deliver that type of philanthropy. I think it is really important that the government understands that that is going to create a massive gap in funding, and looks at what mechanisms it can use to provide that, or to shore up the opportunity for others to give in a philanthropic sense.

The CHAIR: Dr Harris or Dr Tait, would you like to add anything?

Dr TAIT: I think I would agree, this becomes part of the transitional planning that communities and community organisations need to be involved in. It becomes part of the discussion. I think we have covered that. That is good, thanks.

The CHAIR: Mr Smith, anything further?

Mr NATHANIEL SMITH: All good.

Mr ANOULACK CHANTHIVONG: Thank you very much for coming in today. I suppose the public health of communities and individuals is correlated to their economic wellbeing. What we do not want to see is what happens, or has happened, in parts of America, Northern England, and Wales, where former fossil fuel communities did not get the level of support in the transition to the new economy and are really suffering social disadvantage, intergenerational unemployment, and a number of social issues, in poverty and quality of life and so on. For our most affected communities, how do we ensure that those poor outcomes are not reached, as we increase the rate of movement towards the newer renewable energy mix?

Dr HARRIS: I can start with that one. It is a very complex question. These kinds of trade-offs are issues, and why you need leadership, from government in particular. I do not know enough about the context of the United States or even northern England, which happened at a time in the late 1980s, when neoliberalism kicked in, and all sorts of austerity things kicked in. I think it is a highly complex environment. One of the things that could happen is an offering of alternative employment opportunities, and alternative investment opportunities. If you are going to work into the Hunter Valley shifts its model to renewable energy, then let us try to match the jobs that are being lost, with the jobs that can be created. Again, that is up to government to work with industry, as well as communities, to make that happen.

Like you are saying, public health is highly correlated with socio-economic status. It is a major concern for us, that a tragedy around socio-economic status could be brought along with this. But a just transition is a just transition for everybody. That is the word for it, right—that is the meaning of it. It is up to government to lead the way forward and offer viable alternatives in terms of people's futures. Again, I am not an economic expert. I am sure the Australia Institute has discussed with you—or will do—about some of the actual facts around investment in communities, et cetera. But you tend to think that some of these figures are not as clear cut as they are made out to be. It would be nice to see a future where we start talking about, "Let's move towards a positive future for people," rather than just cutting their jobs and running away.

Mr ANOULACK CHANTHIVONG: It is very hard for a lot of these communities which are impacted by the rapid change to come back to their former status, and it has a flow-on effect to the community's identity, and to the wellbeing of future generations as well. Whilst the trajectory is to the new energy mix, we should not necessarily underestimate the negative impact that this can have on those communities. I am really interested in finding out from all the witnesses what the cost is to those communities, and how we ensure that they are not so severely disadvantaged in this movement that we all want to—

Dr HARRIS: If I could just make one quick comment. This is the role of why government exists, right. This is the role of why regulation exists, and things like planning departments et cetera, exist—it is to offset these things. There are tools and processes by which you can do that. Strategic planning is one of them, which should be happening in this space. If it is not, it is a disgrace. There are things like impact assessments, which can also offset the negative and unanticipated consequences of decisions before they happen—employ those. There are things called health impact assessments—you can do that—equity focused health impact assessments. All these things bring to light all the risks that you are talking about. The problem that seems to be happening is, often the risks get swept under the carpet, in this partisan nature we have to the problem. My response is that, basically, government do the job, and plan properly for these communities.

Mr ANOULACK CHANTHIVONG: Do you think that is happening at the moment, in your opinion?

Dr HARRIS: No, not sufficiently.

The CHAIR: Dr Tait, would you like to add anything to that?

Dr TAIT: Yes. If we are thinking about people's wellbeing, there are several components to wellbeing. Material prosperity, being able to afford to buy food and put a roof over your head, that is really important, but there is also the health. If you are living in a community where you are continually having to deal with dust on your washing, or rumblings of big trains, that is detrimental to people's health as well. Having some sense of control over your existence is also incredibly important to physical and mental wellbeing. Again, it comes back to people realising that we are there to help look after them, to maintain their prosperity, and help them with the changes that are going to come ahead.

But underneath all this, too, we need a well-functioning ecosystem, because none of that actually works if our ecosystem stops working to support us and provide us with the wherewithal of being alive on the planet. All of these things impact on wellbeing. I am not saying you are doing this, but if we were to start setting up an artificial dichotomy between the environment and the economy, and pretending that we could only have one, that actually does not help us have these conversations with people and communities, that they need, to understand what is happening and the role they get to play in it.

The CHAIR: Mr Webb, in response to Mr Chanthivong's question, perhaps you may also want to draw on the parts of your submission about the importance of honouring the identity of these coal mining communities and their association with the industry.

Mr WEBB: Yes, I will do that. I would also refer you to the work of Professor David Adamson. He is a colleague of mine who works for Compass Housing and did a deep place study on Tredegar in Wales, looking at the impact of the post-industrial economy on the people of Wales. I think we have lessons from Wales, from the United States, and from the Latrobe Valley - in our own country - to draw upon on what we need to do to take a planned approach to ensuring that this does not happen. To pick up on Dr Harris' comments, I think it is about the planning that you put in place up-front that will actually prevent the kind of experience that those overseas examples and Latrobe have had.

One of the issues that we picked up in our submission is titled 'honouring the past and sharing the future'. If our goal is to ensure that generational coal mining communities, energy production communities, are part of the conversation, it is looking at the ways in which you can explore how you honour the contribution of coal mining, acknowledge the historic contribution of coal mining to the economic and social fabric of the communities in which they operated, and in honouring that, making a move to the transition allows people to be respected in that process. I think that is an important consideration—it is not to promote coal mining in its own right; it is just to accept that it has had a role to play in our history.

Mr ANOULACK CHANTHIVONG: Thank you very much. I think that to try to avoid really adverse outcomes for those most affected communities is such an important part of how we do the euphemistic "just transition", which of course we all recognise already conjures up a lot of scepticism. On that, how do non-government agencies change their language to reduce the level of polarisation, and try to connect and convince - particularly those most affected communities - that the change that is happening can be an opportunity as well? Because I think our natural defences say, "Well, I'm pretty comfortable where I am. I've got a good paying job, and the job that you're offering me pays half as much and is not even located in my local area." I suppose the language and the communication methods that have been used have not worked. Do you have any ideas of what may work? How do you connect with people's willingness to be persuaded?

Mr WEBB: From an NGO perspective, I am not sure I understand the premise of the question, in regard to the role NGOs can play. I think what we compete against is—we have large employers in the mining sector, who spend a lot of time talking to their workforce and to their communities about the long-term future of their presence in that community, the importance that they assign to their role in that community, and that they will be there for a long time. Then we see from some of those employers a rapid reduction in workforce when there is an economic downturn. That is the type of—I think we have to start with the coal mining companies and the energy companies themselves, and assisting them to have an honest conversation with the communities in which they operate, about the fact that transition is happening, climate change is happening, and we are needing to be part of an active conversation. I think this is about all parties coming to the table and being honest about the future that we are facing.

Dr TAIT: I would also comment, if I may, that it is not a matter, necessarily, of NGOs or governments telling communities. I think the perspective here very much is going and having the conversation with communities, because communities, I think, know a lot, and they definitely know a lot about themselves. So it is letting them tell their stories that enables them to bring this forward, to then start to move on. Then this is going to require resourcing of the community groups that are doing this, but then helping them have the conversation about "What is this community going to look like in 10 years' time, and 20 years' time?". Then they can do the planning, at a local level, about how they get there so, again, they are feeling in control of their destiny.

Mr JAMES GRIFFIN: Thank you all for your contribution. It is very useful. We have heard over two days some really interesting evidence—I think this goes to the comment you are making, Mr Webb—that in those affected communities, perhaps, one story is being told very loudly and clearly, about the tenure and longevity of coal in some of these communities. We heard two undisputed facts from two very separate entities: One was that thermal coal is New South Wales' biggest export; and the other one, earlier today from the CFMEU, was that New South Wales and Queensland combined are the largest exporters in the world, behind Indonesia, of thermal coal.

There is that discussion and then, second to that, there is our discussion around the transition to a low-carbon economy, which is actually the use of coal to power our energy, which is separate and distinct from it being used as an export commodity. I am interested in your view on the extent to which that complicates things in the communities that you serve and, second to that, whether there are two parallel sets of strategic planning that are being done and that need to be done around communities that export and those that work in coal-fired power stations, which we have already said will be retired in the not too distant future.

Dr HARRIS: I have got a simple response to that. The challenge from a public health perspective is the evidence of thermal coal production, in any form, is negative. The reality is that what you are talking about is a market that is driven by—in our submission we said that the market is failing in terms of the exports, and I think that is quite clear to people. There is also a failing local market, in terms of the shutting down of coal as an energy source. From a public health perspective, for both of those things to shut down is actually, in the long term, quite positive. I think for the communities to understand that would be a start. There are direct and indirect effects from coal and thermal coal production that are negative for people's health. That is all I really can say about that, because that is what our evidence suggests: just that it needs to close. The industry needs to shut.

The CHAIR: Dr Tait?

Dr TAIT: I have nothing to add on this. Thank you.

The CHAIR: Mr Webb?

Mr WEBB: I do not really have anything of meaning to add that is within the scope of our submission. For us, in the Upper Hunter, we are dealing with communities that are involved in both the thermal coal production, and in the production of energy using coal, so there is a very direct and clear impact—a looming threat—for those communities. We are very concerned about the impact on the social cohesion and the social fabric of those communities, but also their ability to have safe, fulfilling lives, in an economic and social sense.

Dr HARRIS: Sorry, one more thing, just to reiterate what has been said today by both my colleagues: It is the leadership question that, I think, is the one that is hanging over this. If we take the line—and it seems to me that you are doing this in this inquiry—that there is a realisation that, something is coming, which is going to dramatically impact on those who are currently working in that sector, there is a leadership gap in policy-making in Australia around this at the moment, and a reality check needs to be placed on that leadership. You cannot just put the onus on NGOs. You cannot just put the onus on industry. This is a political decision, ultimately, and politics is this trade-off between trying to respond to your communities, but also providing leadership for those communities. What I do not see at the moment is that leadership for those communities, to offset the harms of what is likely to come. That is the reality of it.

The CHAIR: Just to follow on from your statement there, as you can tell a lot of the conversation today has really prioritised concerns for those communities that are being directly and immediately impacted by a transition happening. I reassure you this Committee is taking a totally multi-partisan approach and, with the concern of those communities and everyone in mind, trying to cut through a lot of that political noise that can often distract us from outcomes. We will be spending an entire day of hearings with the Hunter community, in particular, to really communicate with them. If I can switch to the broader public health outcomes, today Greenpeace has released a report that says some 800 Australians die each year as a result of thermal coal and the air pollution impacts. Could you speak to those broader health concerns that come from production?

Dr HARRIS: A lot of that information is in our submission, and also the submission that I gave, with the Narrabri gas example, is quite similar. What I am holding up in front of me is Figure 1 from our submission. You can see quite clearly that there is a complex connection between the production of energy and various health outcomes, including what we call the determinants of health, which are these intermediate moves towards—energy production meets determinants of health meets health outcomes, basically, is the causal pathway. All I can say is I agree with Greenpeace. This is what the evidence is showing. The pathway is happening and it is largely negative.

It is not debatable. As I was saying before, in my introductory statement, the Intergovernmental Panel on Climate Change [IPCC] and the Lancet Countdown—all these things are clearly explaining the direct and indirect health impacts from thermal energy production. It is interesting; as I said at the beginning, I think it is really great

that this inquiry is happening. I think it is great that there is a move to a policy environment which is bipartisan and shifting towards actually doing something about this problem. It is happening because these outcomes are real, and the evidence is absolutely overwhelming, as well. There is no point me going into detail about what is here—the air quality, whatever.

The CHAIR: In terms of industry or government monitoring of those negative health outcomes, is that sufficient?

Dr HARRIS: Government is pretty good at monitoring things like air quality and those kinds of things. I think we do that pretty well in Australia, and we have got pretty good standards for that. Some of the broader issues around socio-economic impacts are not done so well. In answer to the question, the reality is that the monitoring is done pretty well. These things are showing up in the system, so why is there no policy response?

Dr TAIT: I was just going to say, we could be monitoring a lot better. There are insufficient stations, and to be monitoring for more things. While we are doing okay, we could do better on the monitoring. The other interesting thing that people in Sydney might be aware of, the Environmental Justice Australia report *The health burden of fine particle pollution from electricity generation in NSW*, that Ben Ewald did at the end of 2018, actually shows that a lot of the air pollution in Sydney comes from the Hunter Valley power stations. We are not just talking about adverse health consequences for people in the Hunter Valley from Hunter Valley power stations and coal mining, we are actually talking about people down the whole east coast.

The Greenpeace article that you referenced at the beginning of your question, their little video graphic shows very startlingly where the pollution from our power stations goes. It gets spread around, it is shared widely. I would just like to make the point, in having this conversation, we need to come back to remembering that we are making the choices about which communities are affected by these decisions, and by how we choose to energise our economy and our society, and that there are always going to be winners and losers. It does become a political as well as a social decision. If people were more involved in making these decisions, not just parliamentarians, the community will come to a position, and it would then be for parliamentarians to take action.

The CHAIR: Thank you, Dr Tait. Mr Webb, did you want to add anything?

Mr WEBB: I might just briefly wade into that. Whilst referencing the report, I just had a quick look at the reports of the report online. It uses figures like 800 people dying each year, 850 babies underweight, 14,000 asthma deaths. Then immediately, the Australian Energy Council comes out and rejects the report. We have got this increasing polarisation where, one group swings hard one way, the other group will swing back the other way. Why are they doing that? Because they are increasingly trying to sway public opinion, to fill the void that is arising from the lack of political leadership and policymaking in this space.

Coming back to Dr Harris's point, I think what we are needing to see is political leadership. The science is clear, the public health impacts are clear, we can pull data and interpret it in whichever frame we wish to. In the meantime, communities are suffering, we are not having the conversations we need to have, and time is ticking away. I feel that we have wasted years in having these polarised debates, and not actually getting to the nub of the problem and starting to address that. That comes down to us all playing a role in that, but it starts with political leadership.

Dr HARRIS: I would just like to support that statement, thank you.

The CHAIR: Thank you all very much for appearing before the Committee today, and the time taken with your submissions and engagement with us. We may send some further questions to you in writing. Your replies will form part of your evidence and be made public. Would you all be happy to provide written replies to any further questions we may seek to ask?

Dr HARRIS: Yes.

Mr WEBB: Yes.

Dr TAIT: Yes.

(The witnesses withdrew.)

SUZANNE TOUMBOUROU, Executive Director, Australian Sustainable Built Environment Council, before the Committee via videoconference, affirmed and examined

MICHAEL LI, Senior Project Manager, Cities and Policy, ClimateWorks Australia, before the Committee via videoconference, affirmed and examined

The CHAIR: Do either of you have any questions about the hearing process?

Mr LI: No questions from me, thanks.

Ms TOUMBOUROU: No questions from me, thank you.

The CHAIR: Would one of you like to make any opening remarks on behalf of your organisation?

Ms TOUMBOUROU: Yes, thank you. To repeat, I am Suzanne Toumbourou, Executive Director of the Australian Sustainable Built Environment Council. We are an umbrella body of peak groups in the built environment. Our members are professional and industry associations in the built environment, ranging from the Property Council, through to architects and engineers, designers, heating ventilation and air conditioning mechanics [HVAC], you name it. We have reach to over 300,000 professionals through our network. We are also really pleased to include, as observer members, the NSW Department of Planning, Industry and Environment. We consider ourselves a collaborative policy development network. The work that we have shared with you in our submission is a product of our members' efforts, and the research and analysis that we have partnered with ClimateWorks to deliver. Would you mind if I handed to Michael just for a moment to explain who ClimateWorks are?

The CHAIR: Sure thing.

Mr LI: I am the Senior Project Manager within ClimateWorks Australia. We are a not-for-profit organisation that was co-founded by the Myer Foundation and Monash University back in 2009. We work within the Monash Sustainable Development Institute. ClimateWorks reduces the gap between research and action, to achieve systems level transitions required to achieve net zero emissions in Australia, south-east Asia, and the Pacific. We specialise in the development and implementation of zero emissions pathways, and we act as trusted advisors for government and business, including as a recent partner with groups such as the Australian Sustainable Built Environment Council [ASBEC].

Ms TOUMBOUROU: The thing that really interested us about this inquiry—and by the way, thank you so much for asking us to present. We found that, in dialogues relating to energy supply, or the energy market more broadly, that there probably could be a better balance in considering what demand means, in the context of supply, and how demand can be managed, so that supply can be better managed as well. We really welcome the focus on the sustainability of energy supply and resources in New South Wales, noting that the built environment can make a really big contribution to the sustainability of the grid, and of our energy supply.

For us, ASBEC's members are very much dedicated to helping to achieve the goals of the Paris Agreement and for us sustainability in a big way means that and means meeting the New South Wales 2050 climate target and the 2030 Net Zero Plan. Noting that buildings are responsible for more than half of Australia's electricity consumption and around a quarter of our total greenhouse gas emissions just through their operation, we understand that there is a big opportunity to achieve good impact in our energy supply and demand balance through the built environment. ClimateWorks has also done some work through their decarbonisation pathways. I will hand over to Mr Li to discuss highlighting the importance of the built environment in that context.

Mr LI: We at ClimateWorks published some research earlier this year called "Decarbonisation Futures". It showed that buildings can contribute to or play a role in the transition and its emissions, using technology that is either mature, or has been demonstrated at scale. We modelled a range of net zero scenarios with the CSIRO, and those scenarios showed that this producer requires both an increased uptake in renewable energy and dramatic improvements in energy efficiency of buildings. As an example, we have some scenarios where the power grid is 79 per cent renewable energy by 2030, but even in those scenarios, the energy performance of housing would need to improve almost 50 per cent by 2030, compared to today, and the performance of commercial buildings would need to improve by around a quarter, compared to today. That suggests that we cannot just look at the supply side of the energy system to hit climate targets, we also need to look at the demand side as well.

Ms TOUMBOUROU: The other big part of, I guess, the built environment is how it relates to resilience. Part of the national dialogue relating to energy has been about affordability, security, and also the resilience of our energy markets, and of the grid. Our homes and our built environment is where a lot of our energy is used, and we depend quite critically on that energy. A better built environment means that we draw down less on the grid. In a free running mode, in an event where we cannot power our homes, they can still be comfortable and survivable in the event of extreme weather. And so resilience plays a really big part in what the built environment can deliver, and how that interacts with our energy supply.

The CHAIR: Do you have recommendations for the national construction code to be improved, to further facilitate energy efficiency and make the most of the benefits of increases in renewable energy into the supply?

Ms TOUMBOUROU: If you are familiar with our submission, that outlines a big pathway towards net zero buildings that would have a big impact on what we are able to deliver; energy wise, a lot of those levers are probably going to be a little harder to pull or affect: Plans for net zero buildings, reforming the energy market, data and information, but one of the levers that exists right now - and we can pull it right now, and we have the mechanics around the country to put that into effect - is the code. The best thing about the code is that it exists, and within it are energy efficiency standards that can be ratcheted up. It is really great to see that some of our work has helped to inform the Council of Australian Governments' Energy Council's decision to improve the minimum standards in the national construction code, and thankfully, the Building Ministers' Forum has agreed to do that, and work is underway. I will ask Mr Li to take us through the modelling and analysis that we have done, and the impacts and benefits to the grid that that can deliver.

Mr LI: We modelled a range of typical building archetypes, ranging from residential to commercial buildings, to understand what the cost-effective opportunities are to improve the energy performance of those buildings above current minimum standards. What we showed, in partnership with our research partners—the CSIRO, the University of Wollongong Sustainable Buildings Research Centre—was that the energy performance of buildings, with the improved energy performance in the code, reduced household energy bills between \$2,300 and \$1,300 per annum, resulting in a roundabout \$7 billion in total reduced energy bills across residential buildings in New South Wales between now and 2050, which would also reduce carbon emissions by 20 billion tonnes over that time. Not to mention the impact on the electricity grid and the potential to reduce and defer network investments by around \$12.6 billion across the whole country between now and 2050.

Mr NATHANIEL SMITH: In my region in Macquarie Fields, in the south-west, there is going to be a boom in construction over the next 10 to 20 years. I was out there this morning at Appin and the MacArthur region. Have you had much luck talking to councils where you can see future growth happening, and obviously dealing with the building code, and pushing towards solar, double insulated doors and windows, which we saw on the flight path for the Sydney Airport. The government came in and did double insulated windows for soundproofing. What sort of discussions have you had with government about making sure the design of some of these developments will get the best bang with solar and things like that?

Ms TOUMBOUROU: One of the challenges that we face is the big gap between the minimum standards - as stipulated in the National Construction Code - and better and best practice, as you might see articulated through designs like Passive House and Green Star Future Homes. When we address the Code, the Code, for example, does not stipulate things like smart design. We are looking at the lowest common denominator factors. So, for example, taking your cookie-cutter model home, and working a bunch of stuff on it to make it least worst. Mr Li might correct me on the technical detail. That is my take on it. What you are describing is probably arriving at better and best practice.

There are some challenges at a local government level, where some of their aspirations might butt up against state planning requirements, and the boundary between what local governments are able to direct and what state governments will allow them to. We have not engaged directly with the localities that you have outlined. However, we have dialogues with local governments in New South Wales, and around the country, and one of the challenges is how they are able to better incentivise, and sometimes direct, their planning outcomes. Right now there are really big inhibitors to them doing that, by virtue of the Local Government Act, and by virtue of the planning acts. However, we do have a really good opportunity to improve the minimum standards in the Code, so that we do not get those very worst outcomes.

The other thing that is really important, where there is capacity at a local level, is the gap between what is stipulated in the Code and what is actually delivered; actual compliance with the Code, and compliance with minimum standards. We can raise the standards all we like, we can say currently across the country there is a requirement for what we call a 6-star Nationwide House Energy Rating Scheme [NatHERS] in design. We can raise that to eight or 10 star, but whether or not people are getting what they pay for when they are erect a home is a different question.

There is also an issue of how local governments intervene to make sure that there is compliance with the Code. One opportunity is for local governments, at the planning level, to better interrogate the design applications, and to make sure that they are actually meeting the requirements of the Code, and to help build the literacy in their constituents of what a more efficient, comfortable home looks like. They have great opportunities to engage with their public in that area. It is something we are encouraging them to do. Mr Li, do you wish to add to that?

Mr LI: Yes. The only thing I would add is, touching on the way that design is treated in the Code, and the way that we treat it in the analysis that we have done on opportunities for the Code. As Ms Toumbourou alluded to, we took a conservative approach to the potential improvements to the energy efficiency and energy performance of new buildings and new housing, using that sort of cookie-cutter design approach. Even then, we found that there could be significant improvements in energy performance, taking a conservative approach, in a way that the long-term benefits tend to reduce energy bills, reduce the need to purchase air-conditioning equipment, and also savings to the emergency network would outweighed up-front capital costs. That suggests that, if those smarter design considerations are incorporated, those benefits will be realised at even lower costs than what we hoped.

Mr JAMES GRIFFIN: Over the past few days we have heard a lot of evidence. Primarily, as you pointed out at the beginning with your remarks, it has generally been around demand and, even then, a big focus on solar, generally speaking, as a renewable energy. It is wonderful to hear the impact that the building and the built environment can make in solving part of this challenge. I think a key and critical element of that is probably communicating that more effectively and broadly to communities, because I think the reporting on the issue of a transition to a low-carbon economy has focused too much on some forms of renewables.

With that in mind, you mentioned before the Net Zero Plan 2030. My recollection was—and I just had a quick look then—it did have a small component on buildings, and spoke about the state government's view to lead the discussion in expanding the construction code. Thinking in terms of the Committee, there does seem to have been a bit of work done there that mirrors some of the comments that you have made. Do you see that as a really good starting point that we can continue to push ahead with?

Ms TOUMBOUROU: Definitely. As I mentioned earlier, having the NSW Department of Planning, Industry and Environment within ASBEC's network as an observer member has meant that we have been able to cross-fertilise ideas. Over a long period of time, they have been able to interrogate our policy platforms, and some of the reasoning and analysis behind it, and pick from it. We are really pleased to see some of our priorities reflected in the Net Zero Plan. The support for improving the Code is something that we feel very strongly about and we very much welcome. The thing to keep in mind is that New South Wales is a little alone in terms of how it advances sustainability in the Code. They adopt something called the Building Sustainability Index [BASIX], whereas the rest of the country follows a methodology called NatHERS.

I would describe BASIX as probably a more holistic way of approaching home sustainability, and NatHERS looks mostly at thermal performance, although people would argue about exactly what that means and exactly what that is. Having said that, it would be good to see better alignment between New South Wales and the rest of the country, so that across jurisdictions, we are better able to understand the advances we are making and inform the policy that we are taking on. I understand that we are moving in that direction anyway, and I welcome Minister Stokes's interest in a harmonised approach, as well. The underpinning energy target in BASIX, to date at least, has been informed by the minimum standard that is applied nationally. So there is some consistency, but we are quite happy with where New South Wales has gone. I would be happier if they adopted all of our policies, holus-bolus, but it has been good to see the direction they are heading in, both from a design and a sustainability built form perspective.

Mr ANOULACK CHANTHIVONG: Ms Toumbourou, you mentioned the difference between BASIX and NatHERS. Can you be more specific in what some of those differences are between the two standards?

Ms TOUMBOUROU: I will hand over to Mr Li to answer that first.

Mr LI: Probably the biggest difference between NatHERS and BASIX is that NatHERS rates a building's thermal energy performance—essentially the amount of energy that is needed to heat and cool the home to be comfortable. BASIX includes thermal performance, which is what NatHERS covers, but adds on to that more of a whole-of-building energy and environmental performance lens. So it includes things like appliances in the building, and also water performance. It essentially takes a more whole-of-building view, compared to NatHERS.

Ms TOUMBOUROU: One of the things we were really interested in ensuring was that you cannot trade-off that minimum building fabric performance with things like plug-in appliances. There is a risk that that might be done in a whole-of-building approach. Not to say that whole-of-building sustainability is not the way to go; it is a really good approach. But our perspective—and the agreed perspective of the members, and the work that we have done—is that there must be a minimum energy efficiency benchmark that you have to meet that you cannot trade-off, and then you can look at the more holistic approach from there. Does that make sense?

Mr ANOULACK CHANTHIVONG: Yes. What is the minimum benchmark?

Ms TOUMBOUROU: At the moment, as I understand it, BASIX from 2017 updated their energy target to meet the same benchmark as NatHERS. As I understand it, they are aiming for six star. What I am not confident of—and what I probably could not put my hand to heart and swear—is that you cannot trade-off some of that performance through the whole-of-house method.

Mr ANOULACK CHANTHIVONG: By mandating certain minimum standards, what would be the impact on the pricing of buildings? What sort of premium will we be expected to pay to have these minimum standards?

Ms TOUMBOUROU: I will let Mr Li take us through what the modelling found. Before I do, one of the things we should consider is what the learning curves have traditionally looked like, in terms of adapting to, and adopting new standards. Back when we went from four- to five-star NatHERS a decade ago, the CSIRO undertook some research to look at what the cost premium ultimately was. They found that, over a five-year period, that premium pretty much came down to—and Mr Li will correct me if I am wrong—zero. So the market adapted very fast to accommodate those new methods. The work that we have done, as Mr Li mentioned, is very conservative, and so does not take into account those learning curves in the same way. I will hand over to him to describe our knowledge there.

Mr LI: If we take housing as an example of a building type that we modelled, the increase in up-front construction costs, associated with the energy improvements that we found to be cost effective, was equivalent to around about 3 per cent of the total construction costs for a detached house—that is construction costs, not the total land price, or total value of the home. It is 3 per cent, approximately, of the construction cost. As Ms Toumbourou mentioned, that is the conservative assumption, and does not take into account those learning curves we have observed, when standards have been strengthened through [inaudible].

Ms TOUMBOUROU: If you use those figures just, I guess, as a full disclosure approach, so that we might not inspire the ire of more conservative institutions that tend to, I would argue, overestimate those additional costs. But when you look at exemplars around the country—and Western Australia's Josh Byrne has delivered 10-star NatHERS homes at no cost premium, compared to the average home. It really depends. Mr Li previously described that smart design can deliver these outcomes for nothing, but that is not what we are looking at, in terms of minimum standards. Mr Smith also talked about [inaudible]

Mr ANOULACK CHANTHIVONG: If it is at the higher end of your estimation, say 3 per cent, what do you see is the pay-off period before you can recuperate that premium? Are you talking a year, two years, five years, six months in terms of your savings? I know the bell is ringing in the background. Did you hear the question?

The CHAIR: Will you repeat it?

Mr ANOULACK CHANTHIVONG: With your estimated upfront premium on the construction costs alone, what is the expected pay-off period nowadays, given the benefits you may obtain from having more energy efficient buildings? How long are we talking before you recuperate those costs, for example, in your energy expenditure, so to speak?

Mr LI: In the cost-benefit analysis register approach that [inaudible] took, it took the approach of considering the costs and benefits over the lifetime of the building. Having said that, it is actually a four-year period and, having said that, with the assumptions around discount rates, and the assumptions around the construction costs premiums' particular savings, we did look at taking a conservative approach to those payback periods.

The CHAIR: Do you know how many years?

Ms TOUMBOUROU: I think the challenge there is, quite frankly - it depends on the style of your mortgage, and the pay-off period of your mortgage. Rather than count it against what might be perceived as an average or not-so-average mortgage, what we did was instead calculate the energy bill savings per year, per household, which might be how to avoid the debate about the methodology of how you calculate that pay-back period. As Michael mentioned, the energy bill savings per year that we had determined, actually Michael remind me, the difference is per state, is it not?

Mr LI: Yes, different per state. Essentially it is between \$300 and \$1,300 per year in energy bill savings in New South Wales.

Mr ANOULACK CHANTHIVONG: Are your building codes mainly focussed on design or materials or both?

Mr LI: By "materials" do you mean—

Mr ANOULACK CHANTHIVONG: I mean to say, are we using different types? Are you trying to, may be, encourage the use of different types of building materials that actually lead to greater energy efficiency? Or are you just redesigning the way houses are built, or building are designed, so that they heat easier, it cools down? Which part of it is physical and which one is more design?

Ms TOUMBOUROU: We did try to avoid kind of fundamental design approaches, because that would be something that the Code could not cover. So it was more processes, materials, and approaches to built form. For example, some of the examples that we provided in the Built ToPerform report, when it came to how you might achieve better energy-efficiency outcomes for homes, included things like better air tightness—just sealing properly, types of glazing—so double glazed or high performance windows, increased insulation, adjustable outdoor shading and, of course, energy-efficiency improvements in air conditioning equipment, lighting, domestic hot water, all of which are covered, as I understand it, within the Code. Those things would not be what I would describe as design. They are delivered in the built form.

The CHAIR: Thank you for your engagement with our Committee process and your submission. We may seek to ask you some further questions in writing, the replies to which will form part of the evidence and be made public. Are you happy to provide a written a reply to any further questions we may ask?

Ms TOUMBOUROU: Absolutely.

Mr LI: Yes.

(The witnesses withdrew.)

CLOVER MOORE, Lord Mayor, City of Sydney Council, affirmed and examined

CHRIS DERKSEMA, Sustainability Director, City of Sydney Council, affirmed and examined

DARREN O'CONNELL, Energy Management Coordinator, Shoalhaven Water, Shoalhaven City Council, via videoconference, affirmed and examined

JASON LINNANE, General Manager, Singleton Council, via videoconference, sworn and examined

The CHAIR: Our next witnesses are local government representatives. Would anyone like to make an opening statement?

Ms MOORE: Thank you. I am very pleased to be here to speak to your inquiry into the sustainability of energy supply and resources. I am here with our Sustainability Director from the City of Sydney, Chris Derksema. First of all, I would like to acknowledge the Gadigal people of the Eora nation, and pay my respects to Elders both past and present, and acknowledge the Aboriginal and Torres Strait Islander people who live in our city, and also the people of very many nations who live in our city. I would like to start off by saying that there is no more timely issue for Australians than addressing accelerating global warming, made even more urgent by the devastating drought, followed by the bushfires, and now by COVID. We must seize the opportunity the pandemic has forced on us to rethink our cities, our towns, and our use of resources, to promote a new, greener, and more sustainable economy and way of life. Our declaration as a city last year of climate emergency was a response to the urgency of the situation, and to the demands of our community—businesses as well as residents—for a new approach. Research for our Sustainable Sydney 2030 strategy in 2008 showed that 97 per cent of people wanted action on climate change. We responded by developing stringent tactics for emissions reduction and renewable energy.

Community concern is still growing. Since July we have been using 100 per cent renewable electricity for all our operations, and we expect to make significant savings of \$500,000 annually, over the next 10 years, for this new contract. At the same time, we are reducing emissions by 20,000 tonnes a year and we are creating jobs in Shoalhaven, Wagga Wagga, and Glen Innes. Businesses across Sydney are doing the same, as renewables are now the cheapest form of new power generation. This reflects what is happening around the world. The International Energy Agency predicts an 8 per cent decline in coal consumption this year, and a 20 per cent decline in Europe. The writing is on the wall for New South Wales and Australia. The need to diversify revenue streams away from coal royalties has never been more important. What is needed now is for the state and federal governments to show leadership, by working together on establishing a Just transition authority that will ensure Australians working in the fossil fuel industries are given real opportunities for alternative employment.

The Hunter Renewal Road Map shows that there is majority community support for a properly and fairly planned transition. These communities know only too well the costs of air quality, health, and environmental

pollution that mining has brought. Both governments should also underwrite the investment necessary to fast-track new transmission infrastructure to Renewable Energy Zones. The New South Wales government, and the Energy Minister, Matt Kean, have made a good start, but more needs to be done to send clear policy signals for investors in large-scale renewable energy generation, and that is why this inquiry is very timely and very important.

The CHAIR: Thank you, Lord Mayor. Mr O'Connell, would you like to make any opening remarks?

Mr O'CONNELL: Yes. It is fair to say that the Shoalhaven region in New South Wales has had a tough year. The Black Summer Currowan fire impacted over 80 per cent of the Shoalhaven Local Government Area [LGA]. Villages such as Lake Conjola and Sussex Inlet then suffered substantial flooding only a month later. Major flooding returned to the region recently to add to the misery and trauma. COVID-19 has now given the region an uppercut. For some businesses in tourism and hospitality, it was unfortunately a knockout blow. For the Shoalhaven region to recover, there will need to be support from all levels of government, community resilience, and transformation towards a cleaner, sustainable energy supply to mitigate climate change. Shoalhaven is well placed in the broader Illawarra region to tap into a manufacturing renaissance, in the form of a renewable energy hub. Clean energy jobs in our region offer a new way forward to economic prosperity and environmental stability. Solar farms, community batteries, and microgrids to power our remote villages have merit for reliable electricity supply to edge-of-grid customers and for emergency evacuation centres.

Shoalhaven Council spends around \$7 million every year on its 35 gigawatt hours of consumed grid electricity. Despite our efforts to install thousands of solar panels on council assets, we will still have to purchase large amounts of offsite renewable energy to achieve our adopted net zero emissions and renewable energy targets. As a large energy customer, we can stimulate the construction of utility-scale solar and wind farms in New South Wales by entering into long-term renewable power purchase agreements. The cost to secure this long-term renewable energy can be achieved at no greater cost and with no greater risk than purchasing regular grid power. With three fully electric vehicles already in our current fleet, the Council is also looking at opportunities to expand the availability of electric vehicle charging stations at tourist hotspots, to help attract visitors back to the beautiful Shoalhaven once it is safe to do so. Shoalhaven Council is striving for resilient, reliable, and renewable energy to move forward in today's challenging world. We look forward to the positive findings from this inquiry in support of this vision.

The CHAIR: Mr Linnane, would you like to make any opening remarks?

Mr LINNANE: I will be relatively brief. Singleton Council appreciates the opportunity to make a submission, and also to debate in this hearing. I think it is obvious to everybody that energy, and the production of coal and coal mining activities is a very important part of our economy and a very important part of the social fabric of the Hunter Valley. We, as a council, along with our neighbours, are heavily involved in a range of activities to plan for the future of our region, and we look forward to seeing the outcomes of this inquiry.

The CHAIR: Lord Mayor, I may begin with questions to you and Mr Derksema. We have heard a lot today and yesterday about the jobs that the renewable sector can create. With the council switching to 100 per cent renewable, you have worked to create those jobs outside of the LGA. Could you take us through the number and types of jobs and where those jobs are located?

Ms MOORE: Certainly. So, our 100 per cent renewable electricity switch in July, that we are very excited, about is creating jobs across regional New South Wales. It is an example of city and country working very constructively together, in the interest of our country's future. Flow Power estimates that the Sapphire Wind Farm in Glen Innes has created 200 jobs during construction, and will provide 150 ongoing jobs. The Bomen Solar Farm in Wagga Wagga has created 250 jobs during construction, and will create 150 ongoing jobs. Ninety of those workers in Wagga Wagga had previously been unemployed, including 38 Aboriginal workers and 18 women. We are really pleased with that outcome. AEMO says that, even under a "do nothing" scenario, the National Electricity Market in Australia, apart from Western Australia, will have achieved 74 per cent renewable electricity by 2040. If Sydney can become the green finance and innovation capital that we believe it can be, that will drive the growth of low carbon industries in the regions.

There is relatively little data available on the green economy, but a survey in our local government area last year found that 16,000 workers were employed directly in supporting roles in the green economy, which added \$2.4 million in gross value. Sydney's green economy is tightly connected to a broader regional, state and national green economy. For example, waste streams from our LGA create about 500 processing jobs elsewhere. The survey also noted that employment in the green economy, in our local government area in the city, increased twice as fast as overall jobs growth, though we still lag behind our international peers. We need more leadership from state and federal governments to further boost this growth. I acknowledge the New South Wales government's aim to establish Sydney as a world-leading carbon service hub by 2030, as part of the New South

Wales Net Zero Plan Stage 1, is important. Bringing this action forward could be especially timely, as one way to rebuild the city's economy post-COVID.

The CHAIR: Could you take us through the journey to 100 per cent renewable? Who did the City of Sydney learn from, and what learnings can be shared with other cities or local government areas?

Ms MOORE: I might just talk about the challenges that local government has, and then I might get Mr Derksema to talk about the learnings. Local governments have a low tolerance for risk. This is perhaps one of the biggest barriers, because this is new, in terms of the history of local government, and makes it more difficult for them in signing renewable power purchase agreements. Recently, some retailers have started making the process of signing these agreements more transparent, and that has meant they are more aligned with councils' traditional procurement processes, which councils have to follow. That has increased uptake.

The City of Adelaide, for example, has also signed a power purchase agreement for 100 per cent renewable electricity. The City of Melbourne has joined several businesses to sign a similar agreement, which is now equivalent to 5 per cent of total power consumption in their local government area. The ACT went 100 per cent renewable for their entire jurisdiction on 1 January this year, making Canberra the world's eighth major city—and the first outside Europe—to make the switch.

With all of these agreements, including the City of Sydney's, having a certain scale has helped. Smaller councils have overcome the scale issue by joining together when procuring an electricity contract. For example, 18 New South Wales councils joined through the Southern Sydney Regional Organisation of Councils to procure a power purchase agreement that started in July last year, although that was only for 35 per cent renewables. Other smaller local governments have also now entered power purchase agreements on their own. The City of Newcastle switched to 100 per cent renewable electricity in January this year, as did steel recycler Molycop—a major business in the Hunter region.

The New South Wales government could help councils switch to renewables and save ratepayers money. This would have the additional benefit of helping to meet the government's zero emissions target. If the government works with councils, it is going to make it easier not only for councils to do the work but also for the government to reach its target. The two ways it could explore doing this are by helping to coordinate purchases to achieve scale, and sharing contract negotiations best practice. Some councils need that assistance. As a major user of energy, the government has substantial buying power.

Simply setting a minimum percentage of renewables—say 50, or 100 per cent—within the government's own energy contract could be the first logical step. As well as sending a clear message to renewable project developers and investors, this would likely save the government money, and would really boost the green economy. Allowing councils to join the contract would lead to greater economies of scale, lower prices, and faster uptake of renewable energy. There are really clear ways of doing this. The City of Sydney is very happy to share what we have learned, both with the government, and with other councils. I will hand over to Mr Derksema to talk about how we reached 100 per cent electricity from renewables.

Mr DERKSEMA: The understanding that we have gained through the process is that we are trying to share as much as possible. We have given dozens of presentations already to other councils. We were one of the first councils to do this. Yes, we could call on a direction that we were seeing with our C40 partners around the world. Sydney is a C40 city.

Ms MOORE: You need to say what C40 is.

Mr DERKSEMA: C40 is a group of 100 cities—close to 100 cities, 90 cities, from around the world, all committed to climate change action. It is a network that we as a capital city use to draw on information and leadership. That was one of the driving forces for us. In a local context, we knew that we were not experts in energy trading, so we employed a small consultancy firm, to provide specialist advice to us about how to go through the process. That allowed us to procure 100 per cent renewable energy from 1 July. We have tried to take that information and provide it to other councils, to help them do the same. The other great resource that is now out there is the Business Renewables Centre Australia—BRC-A. It is not only for councils, but it also helps businesses to really understand the landscape, and how to enter into power purchase agreements. Those two things are particularly important. In terms of a bit of history, the City of Sydney was the first carbon neutral government entity in Australia.

Ms MOORE: In 2007.

Mr DERKSEMA: That is right. And then certified—

Ms MOORE: In 2011.

Mr DERKSEMA: That is right. At the time, we were purchasing green power, which was quite expensive for us, but we knew that was something our stakeholders wanted us to do. We made the decision to stop doing that, because of the expense. We used that funding to invest in energy efficiency in our own property portfolio, and put renewables in our own buildings. We have done that for a number of years. Since that time, the market has changed. What we have seen, and as we have already heard, is renewables are now the cheapest form of new energy that organisations can buy. That is why we have gone this way. We are now purchasing 100 per cent renewable energy, not just because it makes good sense from a social and sustainability perspective, but because it makes good economic sense for us as an organisation. You have probably heard that businesses like Atlassian and others are saying that, unless you can achieve a 10 to 50 per cent saving on your energy costs, through renewables, you are not doing it properly. The time is right now for organisations and councils to go this way.

The CHAIR: The City of Sydney has also been producing energy from food scraps—waste. How has that process been working?

Mr DERKSEMA: It is fair to say that it is difficult to find sustainable waste disposal options in Sydney. A lot of waste still goes to landfill. About one-third of the red bin that usually goes to landfill is organic waste. We have been running a trial where we offered the residents in the apartment buildings the option to divert their organic waste into a little Kitchen Caddy bin. We then collected that organic waste separately. That was an opt-in program. It has been hugely oversubscribed. Actually, lots of people outside the City of Sydney have tried to sign up, but of course we cannot service them. That waste is taken to a facility called EarthPower in Sydney. The organic waste is digested. It produces a renewable gas, that is then converted into renewable electricity. The remainder then produces a fertiliser, that is used in agriculture and other applications. It is a successful program. We are running phase two now. We have gone from 320 to about 1,000 households in phase two. We are continuing to run the program, with a view to hopefully rolling it out as a permanent service that we provide in the future.

Ms MOORE: We cannot provide that service to all of the people that want it at the moment, can we?

Mr DERKSEMA: That is right. There is more demand.

Ms MOORE: There has been a huge response.

Mr DERKSEMA: That is right.

The CHAIR: That is fantastic. Mr Linnane, we have been speaking a lot about transition. We know that obviously has direct impacts on your area. The New South Wales government's Statement On Coal talks about the importance of supporting diversification in communities such as yours. Could you go through with us how your consultation process on this has worked, and the risks to Singleton if there is not a proper plan for transition?

Mr LINNANE: Thank you for the opportunity to appear before the Committee. In terms of the consultation process, and how it has worked, the first thing I would say is that it is ongoing, and has a long way to go. As an organisation, as a community—I started in this role 4½ years ago, and one of the things that became apparent to me very quickly was the desire for our community to start talking about how we can build resilience and redundancy into our economy, and how we can build the social fabric of our community. We have done a lot of work over the last few years, and we will continue to work on that into the future. I am not only here for our own local government area.

From a regional perspective, it is our view that the need to diversify is not a need just from Singleton Council and our local government area. That need is facing our whole region, and potentially the whole state and country. The impact that coal mining has on the economy in Singleton—our latest figures suggest that it represents around 64 per cent of our gross regional product. We know that there are thousands of jobs that are taken up by local Singletonians. We also know that the value chain for mining, and for energy, is not just restricted to the upper Hunter. It goes down the valley to Newcastle and beyond.

We have been doing a lot of work with our joint organisation. There are some really good conversations happening within the Hunter Joint Organisation around how we do planning for the future, how we create diversification, and how we build resiliency and redundancy, not only within each local government area [LGA] but across the region. We are really proud of some of the work that is going on at the moment from a joint organisation perspective. In Singleton we plan to put in front of council our socio-economic development strategy in October, which will give us our road map to guide our efforts in engaging with the community, the industry, as well as engaging outside our local government area, to try to take that picture of what a more diverse Singleton would look like; to make sure that we put in place the things that we can and need to do for that journey. We are very mindful as a council that we cannot solve that problem on our own.

I go back to my comments before about the sheer size of the coal mining and energy production industry here in the upper Hunter. It goes right across into the lower Hunter. It is an issue that is much bigger by a scale and capacity far greater than what we have. We know we have a role to play, and we want to make sure that we play that role really well. We are committed to that, and we will continue to advocate to both sides of politics, state and federal, of the need to support our region in that long-term socio-economic planning. Along with colleagues from Upper Hunter Council, Muswellbrook Council, CFMEU, and other industry partners, I had the opportunity to visit Latrobe Valley in Victoria, and hear first-hand how their transition was planned, and how it was playing out. I think there are some really good lessons for our region. We need to make sure that we do not fail our future generations by not heeding those lessons in putting in place really good plans to help our communities prosper into the future.

The CHAIR: One of the lessons that we have heard from the Latrobe Valley transition plan is that it started a bit too late. Are you feeling supported enough by the New South Wales government, and do you feel that the process is appropriately underway? What else would you like to see?

Mr LINNANE: I think you are right. I was going to talk about risk—I missed that. I think the biggest risk we have is that we do not get serious now. A key learning I got out of my trip to Latrobe was that it started too late, and as a result of that, all of the stakeholders did not have an opportunity to come together and clearly articulate what "good" looked like. As a result of that, they are all heading in different directions, or they are thinking they are doing the right thing, but not aiming at that common goal—that common objective of what they needed their future to look like. I think it is incredibly important that we seize the opportunity now. We are very heartened by the hearing, that we are hearing, with the beginning from the state, but we need to continue to advocate that and push that. We are also very heartened, and get a lot of confidence from the fact that, the Joint Organisation has come together. As a region, we are saying that this is a major issue for our region, and we need to work together to solve it, because when we do come together as a region, we have the scale and capacity to actually enact meaningful change and lead the conversation, as opposed to having it placed upon us.

The CHAIR: Mr O'Connell, in your opening statement and in your submission you spoke about the keenness of the community to be installing solar panels. There are obviously barriers for lower-income earners to do that. You talk about the Special Charge Scheme. What are the barriers in place that you would like to see removed and how would the Special Charge Scheme work?

Mr O'CONNELL: That was in relation to Darebin City Council in Victoria that was able to put in the Solar Savers Program. We looked at that and thought that would be a good idea. It basically allowed residents to get rooftop solar on their homes, and pay for it through their rates over a long period - 10-years - interest-free. The council was basically facilitating that, by finding suppliers, and making sure that they are supplying quality components—panels and inverters—and then it would sit on the property, and council could repay it through that. We came up against a legal hurdle on that, in that under the New South Wales Local Government Act we were not able to charge a special charge. The mayor came up with a suggestion to write to the Premier, to suggest that maybe there could be some legal reforms to help with that.

There are certainly some incentives for residences to get solar. The biggest one is the renewable energy certificates through the federal government—the small technologies certificate—and that can be up to about one-third of the cost of a rooftop solar system, at the moment. That scheme basically fades away come 2030—it is on a sliding scale. We have got some issues moving forward, in regard to financial incentives for that. The other one is obviously the locked-out residents—people who rent, where the landlords are not prepared to put solar on. They are having to pay high prices for their electricity, without any solar component. If that is the case, then they cannot generate their behind-the-meter savings in that sense. There are a few incentives.

As part of our sustainable energy policy we have a community target, to try and get 33 per cent of our dwellings by 2025 to have rooftop solar—that is, residents and businesses in the Shoalhaven local government area. We are keen to see that. At the moment I think it sits only around about 20 per cent, so we have got a fair way to go. We need another 10 per cent in the next few years to achieve that target. I think it is something that all levels of government can participate in. At the moment the local government—apart from offering education and support to encourage people to put solar on their roofs, and bring in the supplies to show them that it is a good thing—is a little bit hamstrung in that sense. Maybe we have got to look at sharing that across all three levels of government.

Mr NATHANIEL SMITH: Mr Linnane, I am the member for Wollondilly, which has a lot of commonalities with Singleton like tourism, equine and mining—coking coal is the main mining in my electorate and yours is thermal. The mining companies in my area do a magnificent job in helping community organisations and sponsoring teams. They do a lot for the community. If things were to shut down in your area what sort of

effects would that have on the community in the Singleton area, community groups, charitable organisations and things like that?

Mr LINNANE: I cannot put my hands on an exact number. What I can say, is that it would be significant. The mining industry is active in our community in many ways. Their support for community organisations is ongoing. It varies from organisation to organisation. They all have formal programs, which come under different sorts of names and titles. They are present in our community, and are active supporters of a range of sporting organisations, neighbourhood centres and the like. We also receive, and rightfully so, voluntary planning agreements [VPA], where those organisations are looking to have approvals for their sites.

We have taken an approach as an organisation to move away from spending those VPAs for the here and now. In the past, most of those VPAs were used to create new infrastructure here in Singleton today. We are saying no, we need to be more mindful of the fact that our future generation is going to have different sets of challenges, and we need to make sure there is money being put aside, so that people in my role, and in the role of councillors 10 years to 15 years down the track, have a reserve to call upon to do up what will need to be done socioeconomically. We have set up a community and economic development fund, where we are directing the majority of the VPA money into, so that there is a reserve set up for the future generations. When mining companies and their supported communities are not around anymore, we have got something else to fall on.

Mr NATHANIEL SMITH: One of the big things in my area is jobs that come from South32 and SIMEC. We have heard from a lot of witnesses over the last three days that we have got to transition right now, but no-one has had any real clear answers on how to keep those people employed. How many people, roughly, in your Singleton area work in the mining sector?

Mr LINNANE: Direct mining is somewhere between 2,500 and 3,000. There are about 7,000 to 8,000 people a day who drive in to work in the mines, but then you have got all of the flow-on like the support services. The most recent data that I have seen from our Regional Economic Modelling and Planning System [REMPAN] shows that 64 per cent of our regional domestic product is coal mining related. It would be seismic if something were to happen to coal mining overnight in terms of its impact.

Mr NATHANIEL SMITH: That is one thing that we really have got to consider in this inquiry. A lot of people are saying that we have got to just switch it off now. Well, no. This has to be a transition. We have seen in other countries that it has taken years.

The CHAIR: Do you have any further questions?

Mr NATHANIEL SMITH: No.

Mr JAMES GRIFFIN: Mr Linnane, we heard from some witnesses earlier, and one of the comments made was, "The economic opportunities of renewable energy must be shared with the workers who have powered our country for decades." That comment was made in the context of the community of the Upper Hunter. As the member for Wollondilly has just pointed out, there is no debate that a transition to a low-carbon economy will happen. The challenge that we are presented with is how to identify and effectively plan for the thousands of jobs that you have pointed out and the 64 per cent or thereabouts of GDP attributed to mining. In your submission and in your work done to date, has there been any thinking around the role of skills training and support that the State Government could provide to assist with that transition? Or is that two steps too far ahead at this point? Were there any learnings that you took from the Latrobe Valley experience that you could comment on?

Mr LINNANE: This is probably not the area of my expertise. Having been to Latrobe, and having had conversations locally, how we create pathways and help people develop the new skills to allow them to transition into new economies—either now, during or post-transition—has to be at the forefront of our thinking. It certainly became apparent to me in Latrobe that there is still a struggle going on with the staff who work in the power industries not being able to adapt, either from an acceptance or skill point of view. That is certainly something that we need to make sure that we do not allow in the Hunter region and across the rest of our country. There is work happening already in our region. AGL have supported some work transitioning their staff, with the imminent closure of Liddell. I think that they are doing a terrific job with that. I know that the Joint Organisation, through the conversations that we are having, and the mechanisms that we are looking to put into place, certainly has—we need to focus on how we create pathways, support the people who are currently working in energy production or coal mining, and transition staff into new industries, so that they do have a bright and prosperous future here in the Hunter Valley, because why would you want to leave?

Mr JAMES GRIFFIN: Is there an acceptance within your community that change is not too far off? How would you describe the willingness to think about what the future looks like?

Mr LINNANE: I think that it depends on who you talk to. I think that, like most communities, there is a divergence of views around whether the transition is going to happen and, if it is, how long before it needs to or will happen. I do not think that there is one answer for that. I do know—and I said this earlier in answer to a previous question—that one of the things that is continually brought to my attention, in nearly every conversation I have when I am out in the community, concerns what we are doing around transition, creating diversity in our economy, and creating resiliency and redundancy. There is certainly a strong flavour of that but it varies depending on who you talk to.

Mr ANOULACK CHANTHIVONG: Ms Moore, I am interested in something about which I asked some of the departmental staff earlier but I then got shipped from one department to another—diversifying revenue streams as royalties from coalmines have diminished over time. Do you have any idea where that diversification of revenue, or royalties, might come from?

Ms MOORE: I might pass to Mr Derksema for that question.

Mr DERKSEMA: Some of the statistics that I have seen from the International Energy Agency, and others, show that the number of jobs per megawatt hour of generation from renewables tends to be higher than more traditional fossil fuel streams. That is information provided at a high-level context. What we are talking about here is a specific example in the Hunter region. I am not the expert to talk about that. We need to be honest about where the global trends are going, and we therefore need to look to diversify all of the traditional approaches. I think that the others would be better to comment on this, but tourism and renewable energy jobs, as well equine and the other things that have already been talked about, need to be diversified. There is an opportunity, but unless—as you have already touched on—you start to address that now and start to think of and incubate those ideas and put resources behind them, it probably will not happen by itself. The natural human tendency is to keep doing the same thing, unless you are really forced to change. There needs to be a concerted effort to make that transition.

Mr ANOULACK CHANTHIVONG: The fiscal gap, with the royalties diminishing over time, is quite substantial. Electrification and fossil fuel excise and all that sort of stuff is a factor. You might have electric cars, but you are still going to use the roads. The roads still need to be funded at all levels of government. I am really interested in your thoughts and ideas as to how that financial gap can be closed. That is why I was really interested in your point.

Mr DERKSEMA: I would like to make a point about two things that I have seen in the industry. Projects, like the one that is connecting the Northern Territory up to Singapore, and exporting renewable energy, have an opportunity for generation of royalties for government as well that could replace existing revenue streams. Secondly, there is the hydrogen economy. Again, this is not the expertise of the City of Sydney Council, but we see the opportunity for Australia to generate and export huge levels of hydrogen, obviously generating revenues through the exporting of that resource as well.

Mr ANOULACK CHANTHIVONG: You made the point that you are now purchasing 100 per cent of energy which are renewables.

Ms MOORE: Electricity, not all energy.

Mr ANOULACK CHANTHIVONG: In terms of the cost of that compared to your traditional much broader mix, was there a premium cost difference in switching to 100 per cent renewables for electricity?

Ms MOORE: The interesting thing is that in doing that we are saving our ratepayers \$500,000 a year over a 10-year period. It is benefiting us financially and benefiting our ratepayers, as well as providing jobs in regional areas. That is one of the reasons why we are so excited about that. It is improving the economies of scale for us and for our ratepayers.

Mr ANOULACK CHANTHIVONG: In moving towards 100 per cent renewables for electricity, is there a financial saving for the ratepayer compared to the base case?

Ms MOORE: That is right. We have assessed that we are saving \$500,000 a year over 10 years.

Mr ANOULACK CHANTHIVONG: So that is \$5 million?

The CHAIR: Is \$5 million correct?

Mr DERKSEMA: Approximately, yes.

Ms MOORE: Yes, half a million—\$500,000.

Mr ANOULACK CHANTHIVONG: Compared to the base case, you are making a saving of \$500,000 per year for the next 10 years?

Ms MOORE: Yes. Since 2008 our target has been to reduce our emissions by 70 per cent by 2030. Because of this move in July to go to 100 per cent renewable electricity, we are going to reach our goal of reducing our emissions within the City of Sydney's operations by 70 per cent by 2024—six years early. It is about setting targets and developing master plans to see what work you need to do to achieve those targets. That is what really worries me about the federal government—they do not have a plan and they are not setting targets.

Mr ANOULACK CHANTHIVONG: It worries me too, Ms Moore.

Ms MOORE: They are not talking about a just transition. They have got to be doing all of those things for Australia to start doing what it needs to do. If the federal government does not start doing that, it is going to be failing those people in Singleton and the Hunter Valley. Change will come but we will not be ready for it.

Mr ANOULACK CHANTHIVONG: I suppose with the resources of the City of Sydney—in all fairness, you are not short of a dollar—

Ms MOORE: That is because we are well managed. I can assure you, the city was going bankrupt in the early 1990s, but we have a strong financial position now which now enables us to do what we need to do to address COVID, for example.

Mr ANOULACK CHANTHIVONG: I suppose it is easier for the City of Sydney with the financial muscle that it has to adjust and transition very rapidly. I also think your electoral base is very supportive—

Ms MOORE: It has been a major commitment since 2008, and 97 per cent of people told us that, businesses and residents, so they very strongly support what we are doing. We work very closely with business in the city. We work very closely with owners of over 50 per cent of the commercial properties in the city. They have been partnering with us since 2011. It is called the Better Buildings Partnership and they made the same commitment that we made to a 70 per cent reduction in emissions by 2030. They are already at a 56 per cent reduction in their emissions. They are doing so well. They just see it as really good business. They were very pleased to join up with us in 2011. The federal government is being left behind. Governments are being left behind. Business is getting on with it and residents want us to do it.

Mr ANOULACK CHANTHIVONG: With the City of Sydney it is much easier, but what about for our smaller councils? How do you think the City of Sydney can provide expertise, advice or knowledge to help our smaller councils?

Ms MOORE: We are very keen to do that. One of the things we have done is we became one of the Rockefeller's 100 Resilient Cities. To do that we had to make a commitment to work with all the other councils in the metropolitan area to develop a resilience policy. That work has been going on for the last year. We have a very good connection now with all those councils in the metropolitan area. That enables us to share our knowledge and our findings, which we are very keen to do and which we do.

Mr DERKSEMA: Resilient Sydney is one opportunity for metro councils. We have also heard about the Regional Organisations of Councils [ROCs] that are around. They play a really important role in sharing that information. With Resilient Sydney, we have had a strong tradition of using data and evidence to make good decisions for the city by investing in energy efficiency. Investing externally, the returns are not very good at this point in time. It is much better to spend our own money on efficiency in our own buildings. That will save us more money in the long term than just about any other thing we can invest in. We have been doing that for a number of years. That reduces our energy costs and our energy needs, which also allows us to then invest in renewable energy as well, which further reduces that cost. I think it is really important. Resilient Sydney and ROCs are vital.

Ms MOORE: By those other smaller councils working together to be able to get scale in terms of negotiation can really help. That is where the Government can also help those councils, and loosening the regulations that prevent councils from being more entrepreneurial and progressive.

Mr ANOULACK CHANTHIVONG: Just on that point, what are the stumbling blocks at the moment that you are talking about that has not allowed local governments in all of New South Wales to become more entrepreneurial?

Mr DERKSEMA: Procurement is always a difficult one for councils. It does create an overhead that can slow things down. Maybe one of the ways to get over that is through collective purchasing. There is a reason that procurement has certain rules. The need for transparency, being a public entity and being able to have that information available about how we procure everything is important. Maybe the aggregation of demand. The State could provide that service to aggregate councils' demand and go to the market on behalf of councils to provide a contract that they could opt into around renewables. That might be one opportunity as well. That would absolutely reduce the burden of procurement.

Mr ANOULACK CHANTHIVONG: In the last few days we have spoken a lot about supply of renewables. Today has been about demand, which is good. In terms of the role of councils in the building, planning and public spaces arena, what changes do you think the State Government could actually do to improve that for councils, both in the city and I might also throw that to our regional friends?

Mr DERKSEMA: On the demand side, as has been said before, we provide information services and engagement to make it easy for people to get renewables on their own buildings and also to procure renewable energy from the market from beyond the city. One of the opportunities we are exploring, and I am happy to talk to the department further on this, is that new build happens all the time in the city—the building of new buildings and new infrastructure. If there was a requirement that new buildings or new assets procure 100 per cent renewables, that would essentially negate the greenhouse impact of growth in the city at least. The way that you could do that is that the energy legislation that is controlled by the New South Wales government could require retailers to provide a 100 per cent renewable energy tariff that would be available for new buildings.

That is one idea that we are exploring and we were going to come to the department with some of these ideas. That would provide certainty for the retailers and the renewable energy generators, because we know the development pipeline of the built environment fairly well. That can provide certainty. Then, aggregating that demand across the state with new builds can then provide the magnitude or the scale that is needed to provide that at a cheap cost as well. As a local government providing a planning service, that is one of the ideas that we would like to explore further with the state.

Mr O'CONNELL: I just wanted to touch on the questions that you mentioned with the City of Sydney council. As a regional council, we certainly look up to the likes of the City of Sydney, because they are pioneers. They have taken the plunge. They have done a lot of work. These purchase agreements can take many years to get underway, and if they did a second round, they would probably take six months. A lot of that effort is something that other councils look at and go, "We have more confidence now, because someone has done that. Someone we respect, the largest council in New South Wales, the City of Sydney council, so it must not be such a bad thing." We are certainly following suit. In fact, today, we have two webinars on power purchase agreements with various organisations. We are very keen. In our submission that is something that we are looking at. The way of purchasing electricity in the future is changing and that is really important. Just in terms of the question about planning, to get a lot of these renewable energy projects up, so the likes of large solar farms, it comes down to the infrastructure SEPP. That has had a few amendments along the way.

I think where it starts to get quite tricky is most of the renewable energy projects in solar energy that we do as a regional council will always be below 100 kilowatts. That means that it requires small technology certificates, not the large generation certificates. We know we can get much quicker approval with projects under 30 kilowatts for rooftop because Endeavour Energy, our distribution supplier, will pretty much give automatic approval for anything less than 30 kilowatts. It takes a little bit longer between 30 and 100 kilowatts. Certainly from our point of view, we are never going to be able to generate enough rooftop solar for our needs. We are going to have to purchase it.

Realistically, big, utility scale solar farms are probably more critical or more effective in western New South Wales where there is far more sunshine, flat ground and where it is less expensive to put those sort of things near grid connections. That is something that we would probably realistically be looking at supporting, so some sort of state government planning framework could facilitate that for the likes of us other councils in trying to support wind and solar, because they are going to be supplying our electricity needs of the future. That is just one of the other comments I thought of.

Mr LINNANE: We are not seeing any significant impediments bending in the road from a state government perspective at all. I suppose the biggest challenge for us, is our ability to resource what needs to be done, being a smaller regional council. We do not have the resources available that some of our larger neighbours have. But, having said that, we made a commitment to certainly allocate more resources in this space moving forward. In recent times we have made some changes to our organisational structure so we have someone who is sitting and looking at how we can drive our investments into improving the energy efficiency of all our assets.

I think the lord mayor mentioned the Southern Sydney Regional Organisation of Councils and the work that they do. We were involved in the rollout of the LEDs through Ausgrid or EnergyAustralia, which is happening for us right now. That provides terrific outcomes for our community. We are also an interested purchaser of green energy. We are proud to be lending our efforts to that. We are also aware of the work Local Government Procurement is doing and some of the panels they have set up in relation to providers to help us and to help make it easier for us to reach out and get in contact with suppliers who can, I suppose, clear the way for us in terms of being able to retrofit a lot of our facilities and put in more energy efficient power supplies. They are all the things that are available to us.

We would always call on government for more support from a grant perspective to help us get these things across the line because sometimes when the facilities are not as big as others the payback periods can be longer and that can be a challenge. More broadly speaking from a Singleton local government perspective is that we have endorsed in recent times our sustainability strategy. It talks about a range of things we want to do in that space. Obviously an advantage we have in this neck of the woods is that the grid is available here in our heart, being the Hunter AGL for many, many years. We think that positions our region well for being involved in and leading the transition to a different power supply for our State and country.

Mr ANOULACK CHANTHIVONG: Mr Linnane, were you involved in the Liddell Taskforce or were you invited to be involved in the Liddell Taskforce?

Mr LINNANE: We have a very good working relationship with AGL. I am not sure if the task force I am referring to is the same as yours but we are certainly involved in their community consultation working group. They have kept us abreast of progress all the way along. We are really keen to continue that working relationship and work with them on how we can paint a different picture for how that site is used moving forward.

Mr ANOULACK CHANTHIVONG: Yes. If I am not mistaken the Government just handed down its report on the Liddell Taskforce so I am keen to understand how involved major stakeholders up in the Hunter were as a part of the task force, to get a firsthand idea of how these issues are affecting the communities up there.

Mr NATHANIEL SMITH: I want to follow up on one of the questions of the member for Macquarie Fields. The lord mayor was saying that the savings for that half a million per year over 10 years with all the work that they have done in the City of Sydney. I guess obviously that work started quite a while ago—you were saying 2008. What was the total cost to switch to 100 per cent renewable, just for the benefit of other councils?

Ms MOORE: I might go to Mr Derksema.

Mr DERKSEMA: The total cost—like any major service contractor that council has we have to invest staff time to renew those contracts, to investigate the marketplace and to find appropriate organisations who can respond to our expressions of interest and our requests for tenders and those types of things, so there is staff time involved—that exact figure I would not know. But it is not anything different to any other major service contract the council might have that it needs to renew on a regular basis, like waste service contracts and the like.

Mr NATHANIEL SMITH: I would just be interested to know, that is all. You can take it on notice. It would be interesting to know for other councils if they wanted to go down the same path.

Ms MOORE: I just wanted to add that savings only relates to electricity. We have made other savings in terms of this work that we have done and we did start in 2008. We did attend a C40 conference in 2007, I think, and we heard from Los Angeles. It was the first city in the United States to install LED lights in their city. We were really impressed with that presentation because there were great savings that they made because they switched to LED as well as reducing their emissions. We came back and we talked to Ausgrid because in the City of Sydney we own about nearly half the lights—

Mr DERKSEMA: Forty per cent.

Ms MOORE: Forty per cent. And Ausgrid own the rest. So we asked Ausgrid to join us in a trial, because it had been so successful in Los Angeles, and they refused. So we went ahead with the trial ourselves. We trialled those lights in Martin Place and George Street and we assessed the trial as being successful. We then went ahead and installed LED lights in all our streets and parks in those lights that we owned. This was in 2008. That has been saving us \$800,000 a year, that installation of those LED lights, as well as bringing down our emissions dramatically. It has been so effective in terms of reducing our emissions we have actually said to Ausgrid, "Will you also change your lights over to LED?" And they have agreed but they are not going to pay for it. We are actually paying Ausgrid to change their lights to LED because we know the savings in emissions is going to be so important to the city in doing that—and they are even slow to let us pay to make that change. But we are determined. We will get there with it and it will be a tremendous savings when we have paid for that conversion. What will it be?

Mr DERKSEMA: Absolutely. It is in the order of halving the energy use from our streetlights when we convert to LED, even less. It is a great project. Some utilities have been more forward thinking than maybe the local one we have here, which is great. But I think just get that across the board and roll that out. It is really just bread and butter stuff now to use LED lights and so making sure that is across the whole state is a really important action, I think.

Ms MOORE: But we were the first city in Australia to do it and we did it on having seen the success in Los Angeles. Now other cities across Australia are doing it and it is benefiting them financially and it is benefiting the planet in terms of getting our emissions down. We know that 70 per cent to 80 per cent of emissions are in our

cities so if the cities can really make those big changes in reducing emissions it is a tremendous contribution to the nation being able to meet its Paris targets.

The CHAIR: Thank you, Lord Mayor, and thank you to all of our witnesses for joining us this afternoon. It is great to have the geographical diversity of local government representatives with us here today, and the sharing of ideas, concerns and frustrations. I thank all witnesses who appeared before us today. I thank my committee members for staying with us for three days' straight of back to back hearings, which is a record, I understand, for Legislative Assembly committees, so well done.

Mr ANOULACK CHANTHIVONG: We are record breakers.

The CHAIR: We are record breakers.

Ms MOORE: That is terrific.

The CHAIR: I thank the Hansard staff for looking after us so well during these three days, the staff of the Department of Parliamentary Services for their work and of course our awesome committee staff for their assistance, particularly through the technological challenges which we have faced.

(The witnesses withdrew.)

The Committee adjourned at 16:03.