T R A N S C R I P T

LEGISLATIVE COUNCIL ENVIRONMENT AND PLANNING COMMITTEE

Inquiry into Renewable Energy in Victoria

Melbourne—Wednesday, 16 March 2022

MEMBERS

Ms Sonja Terpstra—Chair
Mr Clifford Hayes—Deputy Chair
Dr Matthew Bach
Ms Melina Bath
Dr Catherine Cumming
Mr Stuart Grimley
Mr Andy Meddick
Mr Cesar Melhem
Dr Samantha Ratnam
Ms Nina Taylor

PARTICIPATING MEMBERS

Ms Cathrine Burnett-Wake
Ms Georgie Crozier
Mr David Davis
Dr Tien Kieu
Mrs Beverley McArthur
Mr Tim Quilty
Mr Gordon Rich-Phillips

WITNESSES *(via videoconference)*

Mr Andrew McConville, Chief Executive Officer, and

Mr Ashley Wells, Director, Government Relations, Australian Petroleum Production & Exploration Association.

The CHAIR: I declare open the Legislative Council Environment and Planning Committee's public hearing for the Inquiry into Renewable Energy in Victoria. Please ensure that mobile phones have been switched to silent and that background noise is minimised.

I would like to begin this hearing by respectfully acknowledging the Aboriginal peoples, the traditional custodians of the various lands we are gathered on today, and pay my respects to their ancestors, elders and families. I particularly welcome any elders or community members who are here today to impart their knowledge of this issue to the committee or who are watching the broadcast of these proceedings. I would also like to welcome any members of the public who may be watching these proceedings via the live broadcast as well.

At this juncture I will take the opportunity to introduce the committee members to you. My name is Sonja Terpstra. I am the Chair of the Environment and Planning Committee. Also joining us via Zoom are Mr Clifford Hayes, Dr Samantha Ratnam and Mr Stuart Grimley, and Ms Taylor will be back momentarily. Also we have with us Mrs Bev McArthur.

All evidence that it is taken today is protected by parliamentary privilege as provided by the *Constitution Act 1975* and further subject to the provisions of the Legislative Council standing orders. Therefore the information you provide during the hearing is protected by law. You are protected against any action for what you say during this hearing, but if you go elsewhere and repeat the same things, those comments may not be protected by this privilege. Any deliberately false evidence or misleading of the committee may be considered a contempt of Parliament.

All evidence is being recorded, and you will be provided with a proof version of the transcript following the hearing. Transcripts will ultimately be made public and posted on the committee's website.

If I could just ask each of you in turn now for the Hansard record to please state your name and any organisation you are appearing on behalf of—and perhaps, Andrew, we will start with you.

Mr McCONVILLE: Thank you, Chair. Andrew McConville. I am the Chief Executive Officer of the Australian Petroleum Production & Exploration Association.

Mr WELLS: Ashley Wells. I am the Director of Government Relations at the Australian Petroleum Production & Exploration Association.

The CHAIR: Great. Thanks very much for that. With that, I will get you to commence your opening remarks. If you could please keep them to about 10–15 minutes maximum, that way it will allow plenty of opportunity for committee members to ask questions of you. With that, I will hand over to you. Thanks.

Mr McCONVILLE: Thank you very much, Chair. May I also start by paying my respects to traditional owners past, present and emerging.

Ladies and gentlemen of the committee, the Australian Petroleum Production & Exploration Association—or APPEA, as it is known—is the peak national body representing the upstream oil and gas explorers and producers who are active in Australia. Our member companies account for more than about 95 per cent of Australia's oil and gas production. In the context of Victoria, oil and gas production has taken place since the mid-60s, with the establishment of offshore drilling in the Bass Strait. It was that development that enabled the large-scale industrialisation of Victoria after the conclusion of World War II, and that has had a material impact on the living standards of Victorians and indeed Australians more generally. Today Victoria relies on natural gas to power its homes and its industry, and approximately 86 per cent—or more than 2 million—of all Victorian homes have a natural gas connection for heating, hot water and cooking. This is the highest rate of usage of gas in homes in Australia.

As the world moves to decarbonise and meet national net zero emissions by 2050, there is understandably a strong focus on the role of renewable energy and how we can decarbonise. The Victorian government has clearly outlined its support for the uptake of renewable energy and has embarked on a very detailed works program aimed at substituting natural gas across the Victorian economy. In doing so, however, I think it is very critical to not lose sight of the fact that reliable, secure and competitively priced energy is absolutely crucial to everyday lives in Australia and that this will continue to be the case for the foreseeable future. It is also important because, if the events of even the last few weeks tell us anything, it is a very significant policy challenge facing policymakers around the world. Energy transition must be an evolution, not a revolution, and there needs to be a really careful balance struck to ensure the reliability of the system while appropriately transitioning to alternative energy sources. As I mentioned, today there are more than 2 million residential gas customers in Victoria, nearly 65 000 commercial gas customers and more than 600 large industrial users of natural gas in Victoria, and there is very strong seasonal variability in the consumption of natural gas in this state. As the Australian Energy Market Operator identified in its *Victorian Gas Planning Report*, consumption of gas in household, commercial and government settings peaks in winter, obviously largely due to the demand for heating. Industrial customer demand tends to be relatively stable throughout the year.

It is important when we consider natural gas in Victoria that we also consider the national picture. Natural gas in Australia accounts for more than one-quarter of our entire energy consumption, oil accounts for about 37 per cent of energy consumed in Australia and renewables account for about 7 per cent of energy consumed in Australia each year. While over time there will be greater uptake of renewable energy, and we are seeing that, we must not lose focus on the stability of the energy sources in Australia or the utility of natural gas beyond electricity generation. On a national level today, natural gas is used in electricity generation, around 35 per cent; mining, around 24 per cent; manufacturing, around 24 per cent; residential use, about 11 per cent; and also in commercial services, transport and construction sectors.

Natural gas is an essential raw material for the manufacturing of everyday products that we take for granted, like glass; ceramics; bricks; cement; plastic packaging for food and beverages; fertiliser; antifreeze; metals, like aluminium, copper, zinc and tin; and in processes for food preparation, fermentation and brewing. Crucially natural gas accounts for 42 per cent of all energy currently consumed in the manufacturing sector, and in most cases there is no readily available substitute for gas. In Victoria industrial processing accounts for around 30 per of all gas consumption, while gas as an industrial feedstock for light industry accounts for about 1 per cent of total gas consumption in Australia.

While it might appear somewhat counterintuitive, using more natural gas in Australia's power generation resource processing could significantly enhance Australia's ability to meet increasing energy needs and reduce emissions while keeping energy costs affordable. These outcomes are possible because available natural gas power generation technologies can reduce greenhouse gas emissions compared to the average across the national electricity market and by even more compared to traditional power generation technologies. In addition, intermittent renewable energy requires on-call electricity generation to manage falls in renewable output or peaks in demand—in other words, to provide very crucial system stability. Gas-fired generation can deliver that flexible response, and as more renewable energy is integrated into the grid, this balancing role of natural gas becomes more important. As a lower emissions fuel, natural gas has a very important role in helping Victoria reach its emissions reduction targets. We know this from energy transitions around the world. In a recent report, *Scientific American* magazine noted that:

> In the United States and Europe, natural gas is replacing coal in electricity generation. Coal consumption in both regions dropped at least 10 percent in 2019. Coal use in the U.S. is down by half from 15 years ago; 500 coal power plants have closed or are scheduled to. Most of the lost U.S. coal capacity was replaced by natural gas, with additional contributions from renewables and energy efficiency …

improvements.

> In the United Kingdom … coal-fired electricity has almost disappeared and now supplies only 5 percent of power. In both countries, the replacement of coal by natural gas and renewables is reducing both CO_2 emissions and air pollution from particulates, mercury, sulphur and lead—saving lives as a result.

So continuing to use natural gas for residential heating in Victoria will deliver lower emissions by enabling renewables compared to the alternative of phasing out natural gas in preference to electrification. That will have to be underpinned for the foreseeable future by brown coal electricity generation. To put this into some form of perspective, Victoria generated 21 per cent of its 2018–19 electricity from renewable generation, or an

equivalent of just 4 per cent of its energy consumption, including transport and gas energy. Power generation still includes brown coal, resulting in the highest electricity emission intensity in Australia. And while Victoria has legislated a 50 per cent renewable energy target by 2030, the definition in the Act indicates that it only applies to electricity generation. If gas and transport energy consumption remain at current levels, the 50 per cent renewable energy target in Victoria will cover just 10 per cent of Victoria's total energy use.

Given the size and seasonal nature of the sector, it would appear unrealistic to electrify, as massive investments would be required to build new electricity infrastructure and meet seasonal demand. Former chief scientist Alan Finkel recently noted in an address to the press club:

> … we cannot abruptly cease our use of energy.
>
> An energy supply is the most essential pillar of our civilisation.
>
> …
>
> … the only way to meet the energy needs of the future without sacrificing standards of living, or undermining the economy, is by planning for an orderly transition that embraces science and technology as the stepping stones to the future …
>
> …
>
> … imagine a highway exclusively devoted to delivering the world's energy.
>
> Each lane is restricted to trucks that carry one of the world's seven large-scale sources of primary energy: coal, oil, natural gas, nuclear, hydro, solar and wind.
>
> …
>
> We can't just put up roadblocks overnight to stop these trucks; they are carrying the overwhelming majority of the world's energy supply.
>
> But, what if we expand clean electricity production carried by the trucks in the solar and wind lanes—three or four times over—into an economically efficient clean energy future.
>
> …
>
> A technology-driven orderly transition.
>
> Problems wrought by technology, solved by technology.

In support of this endeavour the Australian gas industry has developed *Gas Vision 2050*, a pathway document to help navigate the gas industry to 2050 and beyond and to assess what role the industry can play in the Australian economy. It demonstrates how gas will continue to provide Australians with a reliable and affordable energy supply beyond 2030. The report outlines a road map to decarbonising the natural gas sector to help meet Australia's emission reduction commitments over the coming decade and documents the innovative research and strong progress being made in advancing transformational technologies.

To support *Gas Vision 2050* Frontier Economics completed a study to investigate and evaluate options and the roles of gas and gas infrastructure to achieve net zero by 2050. The study focused on the ongoing capital and operating costs in 2050, assuming a transition to a decarbonised economy was made by then. The annual costs of different decarbonisation scenarios were modelled. These scenarios were compared to a base case where the electricity sector reached net zero emissions in 2050 while unabated gas use continued to supply heat and feed stock to industry. These scenarios achieved net zero emissions from gas use and included blue hydrogen, green hydrogen and electrification. The modelling finds, importantly, that there is value in continuing to make use of Australia's natural gas resources to deliver gaseous fuels to end-use customers. It also finds that making continued use of existing assets to deliver energy, such as the existing gas transmission and distribution network, can help avoid the material costs of investing in new assets to deliver energy. I would be very happy to make a copy of the Frontier Economics report available to the committee. With that, Chair, I would be very happy to answer any questions that you or the committee may have.

The CHAIR: Great. Thanks so much for that, Andrew. Thanks for your presentation. All right. We will go to questions, so perhaps Ms Taylor.

Ms TAYLOR: I am sorry I missed the first part; I had a fire drill. I hope I got the central tenets of what you were talking about. You were talking about electrical infrastructure. Where do you see a marriage, so to speak, or collaboration, between the feds and states on such an issue? I think for some of these issues, where you are looking at electricity and reducing emissions et cetera, there has to be a national component to it. What do you see as a potential role in that? I do not want to deviate too much from the state responsibility, because I get that these are state hearings, but what do you see there?

Mr McCONVILLE: Well, when we talk about emissions reduction targets, ultimately Australia as a sovereign nation is a signatory to the Paris agreement, and those commitments are made by the federal government. So we certainly are very keen to see coordination between the states and the federal government in terms of pathways to emissions reductions, keeping in mind that a lot of our industry is also a very export-focused industry as well. I think it is important also to remember that the electricity market is a national electricity market, so it does not recognise borders. So again there is an element of coordination in that, and that is certainly what we are seeing. It is very important to take a systems-wide approach.

What I would say, Nina, is that there is, I believe, a reasonably high level of collaboration between the states and the federal government. What we do find is it is at times duplicative, if you like, in terms of requirements of states—their pathways to emissions reduction net zero—versus the federal government, when ultimately the federal government has final responsibility internationally. So it does move at different paces, but from our perspective and our members' perspectives we have taken individual action down that pathway anyway. So we as an industry and as an industry association have a set of climate change policy principles which provide a very clear commitment to net zero by 2050, and a number of our members have net zero commitments actually well in advance of that—by 2040. So we are sort of taking action, if you like, despite or in addition to—because we have to. Ultimately these challenges will be solved by technology, and that technology requires investment. So what we like to do is work with the states and the feds to create that investment environment to allow that to happen. But I think the coordination mechanisms that come from the national electricity market—whether they have historically existed through, for example, the COAG process—are very, very important, and what we do see is that actually despite the noise there is a fairly high degree of collaboration between the states and the federal government when looking to say, 'Okay, how can we solve the overall energy mix as we go forward?'.

The CHAIR: Thanks for that. Mr Grimley.

Mr GRIMLEY: Thank you, Chair. Thank you, Andrew, actually for your submission this afternoon. I have just got a question in relation to the electrification of industrial and domestic gas, and I would just be interested to hear: with all the calls I suppose for those to be electrified for cooking and heating, what would be the downsides of this approach in your eyes?

Mr McCONVILLE: I think the first one, Stuart, is cost. There is a significant infrastructure that exists, whether it be in large-scale industrial processes or within the home. As I mentioned, 86 per cent of Victorian homes have a gas connection—so, needing to replace that with electric stoves, hot water systems and other systems in the house or similarly at industrial processes. And I will come back to industrial processes, because there is another complication there.

But on the cost of replacing that infrastructure, and keeping in mind the overall energy generation mix, a large component of that for a considerable period of time will still come from power generation. So there is a risk under that scenario of electrification that your power generation from coal actually increases to meet that increase in electricity demand in the short to medium term. So it is one of cost. If you are moving to, for example, electric heat pumps, they can be more costly, and that has a significant impact, particularly on lower income households, to change out that infrastructure.

In relation to larger scale manufacturing processes the efficiency if you like of gas as that energy source on a per joule basis is very, very high, so it is not a case of simply switching out a joule of energy from gas to a joule of energy from electricity. You at times actually have to use more electricity to generate the same heat or the same energy impact, and so you are actually drawing more electricity out of the system. And if that system is not yet able to produce enough renewable energy, again you run the risk of actually increasing your coal use whilst the intent might be to electrify the system.

The third point I would make is in some industrial processes it is the case at the moment that it is not as simple an exercise as simply taking gas out and putting electricity in, because a lot of the actual physical infrastructure is built around the use of gas, not the use of electricity. I know it is not the case in Victoria, but, for example, if we look at the electrification of LNG plants on Curtis Island in Queensland, there is a suggestion there that they could be electrified. It is actually quite a complex re-engineering process—an enormous cost involved to replace gas-fired generation in those plants to electricity. So it is an infrastructure cost, it is the impact on households and it is an actual efficiency cost, where you may see an actual spike in electricity consumption

which comes from coal not from alternative uses as you go through that transition. That is not to say it cannot happen in the longer term, but it is not as simple as just turning one off and turning the other on.

Mr WELLS: Another element to that as well, just to support what Andrew is saying, relates to the heat that is generated through natural gas. It cannot easily be replicated through electricity, and that materially matters when it comes to glassmaking, aluminium production and so on. So at the heavy end of the industrial spectrum, for want of a better expression, there is no readily available substitute for natural gas at this point at the cost point that we are talking about here as well.

Mr GRIMLEY: Thanks, Chair.

The CHAIR: Great. Thank you. Just a very quick question from me, if I can: could gas-fired power be made carbon neutral with, say, carbon capture and storage, for example?

Mr McCONVILLE: The short answer is yes. Carbon capture and storage is probably one of the most positive options available for large-scale decarbonisation of gas use, whether it be in gas-fired power generation or the use of gas in industrial processes. I think it is very important to understand that carbon capture and storage is not a new technology or technique. It has been done in Australia for more than 40 years. It has been done around the world for more than 60 years. There are currently about 110 carbon capture and storage programs operating or in construction around the world, which will account for about 135 million tonnes of carbon captured every year. Here in Australia we do have the world's largest carbon capture program in Western Australia at Gorgon. Santos, another APPEA member, has just announced a commitment to build the world's largest carbon capture facility in the Cooper Basin. So, yes, it is. It is really a question of geology, actually; it is not technology. It is finding the basins that are geographically proximate, if you like, in order to secure the carbon. The actual science behind it, the process of carbon capture, is very, very straightforward, and it will provide probably the single greatest decarbonisation pathway for natural gas use as we go forward.

The CHAIR: Thank you. Dr Ratnam, question?

Dr RATNAM: Thank you, Chair. Thank you, Andrew and Ashley, for presenting here today. Just thinking about the transition that we are now in—and there are a number of us who would like the transition to accelerate given the climate crisis and the challenge before us to decarbonise our economy—I was wondering, given your membership, obviously you all have an interest in maintaining the use of oil and gas for your members, but given the transition is occurring and consumers, people, will accelerate their transition whether industry likes it or not, what work are you doing with your members to help them plan for that transition away from the use of their product? Because essentially the world is moving away from using the product that your members have an interest in and profit from. What work and responsibility do you all have to work with your members to help them transition now as part of the economy transitioning to hopefully a fossil fuel free future?

Mr McCONVILLE: I think the first question that needs to be asked is, 'What's the end goal?'. The end goal is net zero, and there is no doubt or question about that. Our industry is committed to net zero. Our members are committed to net zero. As Alan Finkel said, there are a range of pathways to that, and I think we need to exercise considerable caution in choosing particular winners as pathways to net zero. If the outcome is net zero, which it is, and that is what our members are committed to, then that is the pathway we are on. I do push back against the suggestion that gas will not be part of the energy mix going forward. The International Energy Agency itself forecasts that natural gas demands in Asia will increase by 52 per cent between now and 2050 as economies industrialise and as economies move away from the consumption of coal and shift into natural gas, which has half the emissions of electricity, and then the role of gas in firming up renewables.

So I think what we have to do is focus on the end goal. And if all of our members—which they are—are committed to net zero, and if net zero is the end goal, then we should all be pushing as hard as we can on that pathway. And that is the commitment that we as an industry have, and that is what we are committed to doing, using all of the technologies available—for example, in the production of hydrogen, in decarbonising gas production—to ensure that we hit that goal of the net zero by 2050. That will involve a range of energy sources, and a number of our members are already providers of renewable energy—whether it be wind, whether it be solar and so on—whether here in Australia or around the world. So that is the focus we have, and that is the pathway we are on.

Dr RATNAM: I think another contextual factor in terms of the end goal is also our use of fossil fuels. So, for example, the IPCC in their latest climate report argued that we have to end fossil fuel dependence by 2030 at the latest if we are going to have a chance of avoiding the most catastrophic impacts of climate change. Climate change has arrived, but we do have a chance to mitigate or prevent the worst impacts of it. So there is another contextual factor there, which is a goal of ending our reliance on fossil fuels, which is why we are undertaking the inquiry to look at how Victoria can move towards 100 per cent renewable energy usage within the decade. So I wanted to understand your response to that goal, which is now an international goal, with a number of the climate agreements that have been reached.

Mr McCONVILLE: I would challenge you that it is an international goal. The international goal is net zero. The international goal is not to end the use of fossil fuels, and the International Energy Agency itself has stated, even under its sustainable development scenario, that gas will continue to have a role in producing energy for the world.

The other point I would make, in terms of the suggestion of reaching a 100 per cent renewable target by 2030, is currently 4 per cent of Victoria's energy is provided by renewables. So there has to be a transition, there has to be a transition pathway, and it has to be one that ensures the stability, the affordability, the reliability of energy supply. And in that sense natural gas is going to continue to have a role, and that is what the International Energy Agency has highlighted in all of its development scenarios, including the sustainable development scenario, which keeps climate change below 1.5 degrees.

So I think our focus, and what we can focus on, is net zero, and that is where we are going. You know, the Paris agreement does not require ending the use of fossil fuels. The International Energy Agency does not require ending the use of fossil fuels. It is about the end goal, which is minimising the impacts of climate change and getting as close as we can to that 1.5-degree target, and decarbonising natural gas and having it support, actually, a faster and more rapid uptake of renewables can be a significant contributor to helping meet those goals.

Mr WELLS: Can I just also add to that that CCS, which we were talking about before, has been internationally accepted within that framework—within the UNFCCC as well as the IPCC—as a mitigation solution capable of delivering environmentally safe mitigation outcomes. And to that point, it has been an eligible project-level activity in the Kyoto Protocol's clean development mechanism since 2011, and institutional arrangements to operationalise it as an international offset have been in place since 2012.

It is just going to reinforce that point that there are a number of initiatives underway, the focus obviously being on net zero but also acknowledging that while there is a transition in train that is going to take some time to achieve, particularly as technology catches up. That is where the market will start to work, and there will be more investment in renewables over time, and you will see that investment will move elsewhere to other things. So I just thought it was some useful context.

Dr RATNAM: Thank you. I appreciate that. I might come back then, in response to what you have asserted if there is time.

The CHAIR: All right. Mrs McArthur.

Mrs McARTHUR: Thank you, Chair, and thank you, gentlemen. I am very pleased you have been able to demonstrate why gas is actually vital for the industrial sector. It is particularly vital in value-added agricultural production, whether it be in the dairy industry or the timber industry—or the meat processing industry, as well. You know, the advocates who do away with gas would do away with some of the most important agricultural industries in Australia if we were to go down that path. But can you please tell us exactly why the anti-gas proponents see gas as evil and why they are wrong?

Mr McCONVILLE: I am not sure, Beverley, that I can. At the end of the day—

Mrs McARTHUR: I agree it might be difficult, logically.

Mr McCONVILLE: I think again what I would point to is we are very much in the midst of an energy transition, and that transition pathway is to net zero. That is not in any dispute. I think we can argue over the speed with which that transition might occur, but I think everyone is on that bus, and we are well and truly

heading down that pathway. But what I might say, as a partial response, given your obvious strong understanding of agriculture, is we have seen similar opposition at different times to technology in agriculture and the role that it has played in terms of ensuring sustainability and food security—so over recent times we have seen a pivot from concerns about the use of coal to the use of gas. But all I can do and all I can point to is the importance of gas in supporting and firming the uptake of renewables, the importance of gas as an industrial feedstock and then the focus on decarbonising that gas to achieve that end goal of net zero.

I think our job as an industry association is just to continue to engage with stakeholders to perhaps help understand the complexity of the task. What we are seeing in other parts of the world is the challenge of energy transition. It is complex, it is costly and it is technologically challenging, and gas will continue to have a role. So our job is to help people understand that and make sure that we undertake the energy transition while maintaining stability of the energy system, maintaining the reliability of the energy system and maintaining the affordability of the energy system. So that is really all we can do. I understand your frustration, but it is what it is in that sense.

Mrs McARTHUR: In my electorate I do have the carbon capture and storage facility at Port Campbell while also having the gas exploration facilities offshore, and hopefully to be onshore very soon. Also we have the hydrogen project at Warrnambool through Deakin University, let alone innumerable—probably the vast amount of—renewable energy that is being created. The real issue for people in rural and regional Victoria, though, has come to be the transmission and distribution of energy, and while that is not particularly in your bailiwick, that is an impediment, basically, to the transition away from coal-fired power stations et cetera. Do you look at that as well?

Mr McCONVILLE: No, Beverley, we do not. We are very much in the exploration and production of oil and gas. What I would say, however, is the importance of coexisting with rural and regional communities and farming communities. The experience, for example, of the gas industry in Queensland has been a very good one, where acceptance 10 years ago was not high and acceptance now is, so the gas industry and farming industries have been able to coexist, significantly. That is not the case everywhere, and I think it is very important that we recognise and understand and work with rural communities to make sure that everyone is able to share in the benefits that can come from having these resources at your disposal. Again, I think the industry has learned a lot over its period of existence in onshore Australia, and we continue to do that in the same way as working to coexist with fishers in the offshore space. We should not be so naive as to think that we cannot go about our business and not bring the community with us. That is very important. But I do think that the industry has a track record, and I point to Queensland, the Bass Strait and to Gippsland, where the industry has demonstrated that it can coexist with rural and regional communities so that everyone can benefit from it. The same would apply to your question in relation to the transmission and transportation of energy as well. It is no different, might I say, to the importance of coexistence where there are large-scale solar farms or wind farms. You know, some of the coexistence issues that we have seen in the oil and gas industry are also emerging in the coexistence of solar farms and wind farms, and there is a lot that can be learned from our sector to help those sectors coexist in the community as well.

Mrs McARTHUR: Could I just go to the issue of petroleum. I just wonder if you could give us your view on whether it is fair and equitable for the people that currently have petroleum-based vehicles to be paying an excise which goes to the contribution for road infrastructure and electric vehicles of course not to be paying any excise whatsoever. We have got situations with local councils—and I do not know whether the state government is into this—where there are free charging stations, so the taxpayers pick up the bill for powering electric vehicles, whereas certainly nobody picks up the bill for somebody to use a non-electric vehicle. Is that fair and equitable?

Mr McCONVILLE: Look, I am going to dodge the question by saying that as an industry association we represent exploration and production. That is a question way above my pay grade and expertise to comment on, unfortunately.

The CHAIR: All right. Thank you. We will go to another question now. Mr Hayes, anything from you?

Mr HAYES: Thank you very much, Andrew and Ashley, for coming and talking to us today. I just wanted to follow on. You talk about an orderly transition, and I have to say most of the submissions that have come before us seem to be pointing to moving towards net zero, as you say, but sourcing more and more of our

energy from renewable sources. So I was just wondering, without bringing the forces of good and evil into the discussion, whether you are possibly looking to the future in developing more niche markets sort of into the agricultural areas, say, like livestock feed, fertiliser—things like that—specialist oils, durable plastics or at least fully recyclable plastics and always having the capacity for emergency generation of power from gas resources too.

Mr McCONVILLE: Clifford, not so much in our space. As I say, we are very much upstream production and exploration. What we saw is that the refiners of our products, for example, pivoted during the COVID pandemic to produce hand sanitiser. What I would say in relation to our members, again focused on production of petroleum—petroleum in its broader sense—is the opportunities relating to hydrogen and hydrogen production are absolutely a very, very strong area of focus for our industry, and the most economic pathway to hydrogen at the moment would be hydrogen from natural gas using carbon capture and storage. So that is very much a pathway that is being explored. A lot of my customers—so my members' customers—are coming to our members to say, 'What can you do in terms of helping us with available supplies of hydrogen?'. That is going to be quite a journey. It is going to take time, and it is going to be quite costly. But for our industry what we do is find, move and store gas, so hydrogen is a very natural fit, and we have significant expertise in that.

Related, as Ashley my colleague has said, is that carbon capture and storage is also very much an area where there is a lot of expertise that our industry brings to bear. So they are probably the two key focus areas. Some of our members are broadening their base to be sort of more integrated energy providers. Some of the European companies, for example, are also looking at provision of renewable energy. So it is more in that space than, let us call it, the 'produced outcomes' that my members are involved in, but the diversification, if you like, of energy sources is something that does play quite strongly into our industry. We do see that Australia will have a significant opportunity to be a major hydrogen producer, and the most economic and efficient means of producing hydrogen at least for the foreseeable future will be hydrogen from natural gas.

The CHAIR: All right. We have got a little bit more time, so we will go around for a second round of questions. Dr Ratnam, we will start with you. Do you have any questions? No. Ms Taylor, any questions? No. Mr Grimley?

Mr GRIMLEY: No, thanks, Chair.

The CHAIR: Mrs McArthur?

Mrs McARTHUR: No.

The CHAIR: Dr Bach, you are okay? All right. Mr Hayes?

Mr HAYES: No, thanks, Chair. That is all from me.

The CHAIR: All right. Well, it looks like you have given such thorough and detailed evidence there that we have got no further questions for you, so I would just like to thank you both for coming and thank you for providing submissions to the committee and of course for your evidence today.

Witnesses withdrew.