T R A N S C R I P T

LEGISLATIVE ASSEMBLY ENVIRONMENT AND PLANNING COMMITTEE

Inquiry into Tackling Climate Change in Victorian Communities

Mildura—Thursday, 12 March 2020

MEMBERS

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Mr David Morris—Deputy Chair
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WITNESS

Ms Rebecca Wells, Chief Executive, Mallee Regional Innovation Centre.

The CHAIR: Welcome, Rebecca. My colleague is going to read something for you.

Mr HAMER: Welcome to the public hearing. I will just run through some important formalities before we begin. All evidence taken today will be recorded by Hansard and is protected by parliamentary privilege. This means that you can speak freely without fear of legal action in relation to the evidence that you give. However, it is important to remember that parliamentary privilege does not apply to comments made outside the hearing, even if you are restating what you said during the hearing. You will receive a draft transcript of your evidence in the next week or so for you to check and approve. Corrected transcripts are published on the Committee's website and may be quoted from in our final report. Thank you for making the time to meet with the Committee today. Could you please state your full name and title before beginning your presentation?

Ms WELLS: My name is Rebecca Wells. I am the Chief Executive at the Mallee Regional Innovation Centre.

The CHAIR: Thanks, Rebecca. Over to you.

Ms WELLS: Good afternoon. Thank you for providing the Mallee Regional Innovation Centre with an opportunity to address the Inquiry into Tackling Climate Change in Victorian Communities. I will start with a brief background of the Mallee Regional Innovation Centre, as I know the centre is new and you may not know about it.

The centre is led by Professor Michael Stewardson from the University of Melbourne and co-directors Professor Ashley Franks from La Trobe University and David Harris from SuniTAFE. The Mallee Regional Innovation Centre pairs in-depth knowledge from the Mallee region with the world-leading research capabilities of the University of Melbourne and La Trobe University and, through SuniTAFE, the capabilities of applied research and delivery of training to address the emerging skill requirements. The Mallee Regional Innovation Centre has staffed offices in Mildura, opened on 6 May 2019 and concentrates on the four focal areas of horticulture, water, energy and the environment in irrigated production and natural resource management. The centre's footprint encompasses the Swan Hill Rural City Council local government area and the Mildura Rural City Council local government area and extends along the Murray through to the South Australian border.

The centre coordinates research and development projects and delivers contracts on a fee-for-service basis. The purpose of the centre is to drive collaboration to promote innovation in practical research and development and adoption to address the key challenges in the Mildura and Swan Hill regions in horticulture and natural resource management. To ensure a successful and sustainable Mallee region through innovation and collaboration, we are focused on prioritising and fast-tracking research and development projects which strategically address the key challenges of the region in our four focal areas, seeking opportunities to foster new areas of development, facilitating the commercialisation of research and development outcomes and seeking outcomes that are practical, implementable and can add value to the region. To do this we have to have strong collaborative partnerships, source funding to support projects, complement established activities, bring in new capabilities where required, build capability and encourage the adoption of the research and development outcomes.

The centre is not focused on a single industry or sector, as with the four focal areas of the centre there are many crossovers between them all. Industries can face similar, if not the same, issues. Examples include challenges regarding climate change, water and energy. These modern-day convergences mean that there needs to be avenues which allow for cross-sector research and development work. Information about the centre's governance structure can be found in some of the documentation supplied today.

So climate adaptation and preparation is a necessity for irrigated production and resource management, as is the need to understand and possibly transition into new techniques as they face increased variability and volatility and with frequent, and the potential of increased, longer heatwaves and increased severity of weather events and the prediction of increased temperatures. The CSIRO has released the *Mallee Climate Projections 2019* and they state that:

> By the 2050s, the climate of Mildura could be more like the current climate of Menindee, NSW, and Swan Hill more like Balranald, NSW.
>
> By the 2030s, increases in daily maximum temperature of 0.8 to 1.6°C (since 1990s) are expected.
>
> Rainfall will continue to be very variable over time, but over the long term it is expected to continue to decline in winter and spring (medium to high confidence) and autumn (low to medium confidence) but with some chance of little change.
>
> Maximum and minimum daily temperatures will continue to increase over this century (very high confidence).

The landscape that our communities live, work and play in is undergoing change. I would just like to mention some of the projects that we are involved in that link into climate change. Since opening the centre we have begun to engage in projects with organisations that work in the areas of climate change. This includes the Department of Environment, Land, Water and Planning's ADAPT Loddon Mallee initiative and the Central Victorian Greenhouse Alliance through contributions into the Loddon Mallee Renewable Energy Roadmap.

The Mallee Regional Innovation Centre has also joined the One Basin partnership in support of the One Basin CRC bid. The One Basin CRC can provide enormous value in leveraging not only financially for the projects but also through access to wide and varied research skills. The CRC model also enables key partners of research, industry, government and not-for-profit sectors to come together and work towards, recognise and agree on projects for the economic, social, health and wellbeing, and environmental impacts. This CRC will connect community, industry and researchers to manage climate and water risks in the Murray-Darling Basin.

The Mallee Regional Innovation Centre is advocating for a regional hub in the Mallee. The regional hubs are where the research and development programs of the One Basin CRC will take place. Other regional hubs are slated for the southern basin in South Australia, Goulburn and Central Murray in Victoria, Murrumbidgee and Lachlan in New South Wales and in the northern basin in Queensland. The CRC is strengthened by the collaboration of core partners from across the basin. These are the founding partners of the University of Melbourne and the University of Southern Queensland, the Goyder Institute for Water Research, the Australian National University and Charles Sturt University.

Overall, the One Basin CRC aims to strengthen the resilience of the basin community economy and environment through drought, water and market-led transitions by informing strategic decisions in the face of risks and opportunities associated with climate, water and external risks; supporting regional communities in planning their sustainable future; strengthening risk-based planning by local, State and Commonwealth governments; growing the basin economically by increasing productivity, reduced input costs and increased agricultural exports and profitability; supporting continued technology innovation in agriculture and developing new water sources; growing the capability of the region in communities to innovate and adapt to changing circumstances by establishing the trusted adviser role for regional communities and by building on the nation's best capabilities in water-related research and development; providing partners with access to customised education and training for a highly skilled and capable workforce; and enabling partners to network with other businesses, government and community groups. If the Murray-Darling Basin is to be able to support irrigation, production and natural resource management and the continued stewardship of the land and environment, stakeholders would be required to innovate in a cost-effective manner that enables long-term transformation. Underlying this will be a platform of research and development.

I would also like to tell you about green hydrogen, which is something else the centre is getting involved in. The centre is actively pursuing the concept of a green hydrogen hub in the Mallee. Energy is an integral component of climate change adaption and, as climate change is in the region, all businesses will have to consider what will impact their ability to service their customers. Energy is core to their ability to service the communities in the regions, and biomass is an important part of that equation.

Biomass as a fuel source has a role to play for the potential production of hydrogen in the Mallee. It was reported in Sustainability Victoria's 2017 ABBA fact sheet for Loddon Mallee that based on the model data, an estimated 2 207 695 tonnes of organic waste were generated in the Loddon Mallee region in 2014 to 2015, representing 22 per cent of the state's total. Further research is required to accurately gauge the potential of biomass in regard to its use in hydrogen. There has been a significant increase in production in the region, and this will increase the volume of biomass as a resource available within the region. The use of biomass as a value-add is an example of a waste product becoming a contributor in a circular economy with zero emissions. The Victorian State Government has legislated that statutory authorities like water corporations proactively

work towards 42 per cent reduction in emissions by 2050. For these targets to be achieved there needs to be innovation, new technologies and access to new energies across the state.

I would also like to mention heavy-duty vehicles in relation to hydrogen. As a tri-state inland hub that is a connector for Australia's main freight corridors, the Mildura region is an ideal location for a hydrogen hub. This could include a single hydrogen fuel refuelling station for heavy-duty trucks in the Mildura region, operating with the excess solar capacity and with sufficient hydrogen storage. This is an attractive option for an emerging decarbonisation of the transport sector. It is expected that heavy-duty vehicles will be one of the first industries where we will see the first uptake of hydrogen—in particular the heavy-duty vehicles and in addition forklifts, which could be powered by hydrogen fuel cells. Through our engagements with local industries, a shift to a green hydrogen economy would be impactful because there are substantial businesses and services which are linked to the transport sector. This includes four retail outlets for trucks and 31 trucking companies within the region. As a 'through city', many other trucking companies use trucking services in the region and have depots and drivers based here even if their offices are outside the region. There is the potential for a hub to become a significant refuelling point, as Mildura is the core location and crossroads between Sydney, Brisbane, Adelaide, Perth and Melbourne.

The region also has major processing plants and wineries, which all deliver fresh produce for processing. These industries all use forklifts in their operations. They can also be found in packing sheds, on farms, cool sheds, processing plants, wineries, factories and transport and logistics organisations. Further research is required in the region to accurately gauge the potential of industry that could use hydrogen or support a hydrogen industry in the region. We now know through preliminary investigations that the centre has undertaken with the Melbourne Energy Institute that the Mallee region has all the essential components of a hydrogen hub: a rich solar resource for renewable energy and hydrogen production and seasonal storage; a concentrated agriculture and industrial infrastructure, which could benefit from heavy-duty hydrogen-powered transport as well as backup generation; a large biomass resource, which can complement hydrogen use for power generation; and access to transport infrastructure for a hydrogen export market. A study needs to be undertaken to assess and evaluate the heavy-duty-vehicle industries in the region and the benefits of changing to a new green fuel.

In summary, the centre believes there are a number of opportunities for which research and development can play a role in conjunction with communities and industries to provide practical, implementable outcomes that will assist them to better adapt to climate change. Thank you.

The CHAIR: Thank you for your presentation and indeed the array of documents that you have provided. I am not sure if you were in the audience a little bit earlier when we were hearing from the local council, but we had a detailed conversation with them about the solar opportunities obviously in the Sunraysia region and the limitations with respect to the grid in terms of exporting that electricity more broadly to the Victorian, South Australian and New South Wales markets but also around the opportunities of using solar as the energy source around producing hydrogen.

Anyone who has followed the global car industry, which I am sure you have, would be aware that the Japanese market at this stage seems to be moving towards hydrogen as the energy solution rather than electric, and it certainly does occur to me that there is a huge export opportunity for Australia, if we chose to go down that path, to be the manufacturer of the hydrogen fuel. And it occurs to me that within an Australian and Victorian context there are huge opportunities, potentially here. If hydrogen is going to be a fuel of the future, we want to see it generated via renewable energy as opposed to coal, so I am pleased to hear that you are thinking about that. What work has been done with the local government, with the national network provider and with others to really, in a detailed way, put together a potential business case in terms of what can be done and what blockages might exist at the moment to achieve this region as a potential future hydrogen manufacturing region?

Ms WELLS: We are at the point where we believe we need a pre-scoping study done for feasibility of a hydrogen hub in the region. We have been updating various key stakeholders in the region, including councils, about our activities and what we have been undertaking. We have recently spoken to Lower Murray Water and Mildura Regional Development in terms of putting a potential energy group here together in the region so that we can look at an approach across the region. And in terms of that we are looking to speak to AEMO and we have already spoken to ARENA. We have spoken to DELWP just to get that awareness of who could be

feeding into that group or who could actually be coming and feeding information and presenting to it and possible projects as well.

Mr FOWLES: How important is biomass to the hydrogen story? I have seen hydrogen as a liquid sunshine play, but is there real opportunity in that?

Ms WELLS: I think when they are looking at somewhere to have hydrogen, they are wanting to see two sources of fuel. So in terms of our region, that is what we would propose would be the second source of fuel. So at the moment there are examples in the region where biomass has been used to create energy. An example of that is Select Harvests, where they use their almond husks to fuel their plant.

Mr FOWLES: So the almond husks are burnt, presumably in an efficient environment and, what, actually get water turned into steam to run a generator?

Ms WELLS: Yes, they power the plant, which is down near Wemen, I think.

Mr FOWLES: Right, okay. So it would be using dry biomass. There is not some chemical process—it is just using it to create heat ultimately, which then creates electricity?

Ms WELLS: Yes, at this stage.

Mr FOWLES: And biomass as compared to solar, it is just because they have this requirement for the second fuel source that that is there? It is not realistically a great commercial outcome?

Ms WELLS: We have been engaged in many discussions with people like Ross Garnaut at the Melbourne Energy Institute and other players in that field. They all talk about having two sources, so that is what we have defined at this stage would be that second source required.

Mr HAMER: Just a question on the hydrogen, and then I have got a more general question. So the source would be the water from the river?

Ms WELLS: No. We understand that water is a precious resource in the region, and it is something that would take investigations and that would also need to be assessed in terms of groundwater possible availability and also there could be some desal required in that. So we are not looking to take water out of the river; we are looking to see what other opportunities there are in the region. I could, on notice, provide you with some information about the amount of water required in the production of hydrogen. I think it is probably not as much as people expect.

The CHAIR: Yes, so generally any information that you have got available would be handy to provide to the secretariat.

Mr HAMER: I suppose this would apply to hydrogen as well as some of the other initiatives that you have, and it is really about the barriers that you currently find. I assume that with lot of the work that you do the intention is that it would all be commercialised at the end of the day, and certainly as discussed there would appear to be a ready or close-to-ready market for that product anyway. Are there particular barriers for hydrogen, or are there other initiatives that you need where further government support is required? I see you have partnered with the universities and the TAFEs, and often they will, I guess, invest themselves so that they retain the IP of future commercial developments, but are there financial or regulatory barriers or others?

Ms WELLS: Sure, so I think there is probably a range of things in terms of that. Part of it is even just the education in the community about hydrogen and how it works and the potential of it and what it can do. So that is part of what we are trying to do now: get out into wider audiences and talk about hydrogen. I think financially, just as a starting point and something for people to look at investing in or supporting some research in, ARENA does have some programs, but they are quite specific and they are not looking at feasibility studies. So the avenues that are open to us to source some money for a pre-scoping feasibility is something that we are working through at the moment.

The CHAIR: Can I just ask, in terms of just picking up that little point, we have had some evidence from some of our other hearings that having a green energy bank—you know, a Victorian construct of ARENA—might be a useful thing to help with the transition. What are your thoughts around that? I mean, it may well be

that perhaps we get ARENA to administer it on our behalf, I do not know, but what is your thought about having some form of a potential green bank for this type of work?

Ms WELLS: Can I take that on notice? I would just like to think through a little bit more before I respond to that.

The CHAIR: Sure. Yes, absolutely. Sorry, Paul, I interrupted you.

Mr HAMER: Do you have any, I guess, other things that you would be recommending? I think you were talking about the education and the financial, but particularly if there are regulatory or legislative barriers that might assist in actually developing some of the research.

Ms WELLS: I think that has come up in some of the previous conversations or even seminars that I have been to in relation to hydrogen. There could be issues, again, if you are looking at water extraction or things like that. So part of it I think with hydrogen at the moment is that it is still such a new, emerging industry. They are starting to work through things and in some cases seem to be finding out challenges as they go along and progress to a certain stage. So I do not think I can fully answer that with specific examples at the moment; there seem to be things that get added to the conversation as we are hearing other projects progress.

Mr HAMER: Sorry, I assume that through the feasibility studies that is going to identify some of the barriers to develop a fully commercial venture. But I guess at that early stage are there things—whether it is hydrogen, whether it is one of your other initiatives—in that sort of pre-feasibility stage or feasibility stage, where there are other barriers, or is it basically just a decision between funding parties about what is going to come next in terms of, 'We've got a certain amount of resources and ability to do a certain amount of work,' and it is not sort of hindered by State Government policy, for example?

Ms WELLS: Probably not that we can see at this stage. So we have been speaking to DELWP—we did put a submission into DELWP recently in terms of their request for information on green hydrogen—so we have been engaging and talking to those areas of State Government where appropriate and where we can and feeding into that. So we have not had anything come up specifically for our region yet, but I think it is all so very new. We only started talking about this in August last year, so we have still got a little bit of work to do—especially in terms of that feasibility study. I think, as you have said, that will be when some of those things come out.

You know, we have a gas line that comes in from South Australia here. Is there potential for something with that? That could be looked at and used in the future. So there are lots of potential options out there with how it could be established as an industry, but we just need to probably work through them all. I could probably answer that better after our pre-scoping study.

Mr FOWLES: So what do you think is the best mechanism to kind of make that investment happen? Is it, you know, these kinds of informal collaborations? Do you need a lead entity? Does Vic Gov have to say that we want this to happen and then, you know, other people sort of come into the space? What is the best method, do you think? And then what role is there for Government in actually really driving this?

Ms WELLS: Sure. I think one thing I have found is trying to access information and access the right people to speak to. It is lot of work in terms of working through that because we are so new to the conversation. We have been lucky that through the Melbourne Energy Institute they have been able to flag some people for us, but also as we continue to turn up and go to seminars and forums we are finding new people. I think it is not always obvious who the players are that we should be speaking to and who is working on the projects that could have potential and have an interest in the region.

An example of that is last Friday I was in Melbourne at a session and there were people there that are looking at building refuelling stations. But it was just by chance that I came across someone that is looking at that. We should be speaking to them to find out what they are doing and what areas they could potentially be interested in—so I think sometimes that connecting early on. There has been a lot of talk about incentives to get players interested in investing in these projects, because it is such a new industry and it is some way off before it will be actively up and running, but for our region we see it as a potential fantastic opportunity and we just want to make sure that we are a part of the conversation.

The CHAIR: It just sort of occurs to me in terms of some of the conversation around all of this that we kind of think of it as some way off—and some way off is probably less than a decade—and that in order to get critical mass around solar there are a lot of issues with the grid that need to be resolved. The current regulatory arrangements around investing in the grid seem to take a long time, so if we do not start working in these spaces in a clever and thoughtful way now, we are going to miss the opportunity that comes in probably less than a decade. So I am quite pleased that you actually started that journey, because I think it potentially is a very, very exciting journey. You have got obviously lots of different partners. I can see just at the top of your list now. It seems to me that getting that business case, I think, is probably an important next step.

Ms WELLS: Yes, that is part of what is on the list for next. We are actually talking about that now.

Mr HAMER: I guess just one final question, moving away from the hydrogen discussion and more about the horticulture and agricultural industries. We just heard from the previous speakers about the challenges they are facing in educating the community, which may have had some longstanding practices. What sort of engagement do you have, particularly with the agricultural and horticultural community, in terms of disseminating some of the research that you have done?

Ms WELLS: I think, too, because we are 10 months in now, we are in the process of starting projects with local industry. We have had a peak body approach us and talk about a project which we are now working on together. Through that we have had sessions with growers, with the organisation itself and their staff, so I think that we are finding that when there are opportunities to link into local industry, we are doing that.

We are talking to some other peak bodies and we are also talking to a number of them in relation to the One Basin CRC. We just see there are potential opportunities in the region to leverage off something like that, so we want to make sure that everyone is aware of that opportunity.

The CHAIR: Well, I think I have explored that, as have my colleagues. Thank you and good luck. It sounds like an exciting journey.

Ms WELLS: Thank you.

Committee adjourned.