

# **T R A N S C R I P T**

## **LEGISLATIVE COUNCIL ENVIRONMENT AND PLANNING COMMITTEE**

### **Inquiry into Renewable Energy in Victoria**

Melbourne—Thursday, 17 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

**WITNESS** (*via videoconference*)

Ms Erin Coldham, Chief Development Officer, Star of the South.

**The CHAIR:** I declare open the Legislative Council Environment and Planning Committee's 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 on which we are gathered today, and pay my respects to their ancestors, elders and family. 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.

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

All of the evidence that is given today is protected by parliamentary privilege as provided by the *Constitution Act 1975* and further subject to the provisions of the Legislative Council's 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 thing, 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.

Erin, if I could please just get you, for the Hansard record, to state your name and the organisation you are appearing on behalf of.

**Ms COLDHAM:** My name is Erin Coldham, and I am from the Star of the South.

**The CHAIR:** Great. Thanks very much for that. And with that we will invite you to make your opening remarks. I think 10 or 15 minutes or thereabouts, and that will allow plenty of time for the committee members to ask questions of you. So over to you. Thanks, Erin.

**Ms COLDHAM:** Great. Thank you, Chair. And thank you for the opportunity to make some contributions to this inquiry. The focus of my remarks will be on the role that offshore wind can play in the future energy mix as well as specifically the Star of the South project, which has been under development for the past several years.

I will start on why offshore wind—it is a question that often comes up—and why it should be considered as a technology in the energy system moving forward. I will then touch on Star of the South and the progress that we have made here in Victoria and specifically off the Gippsland coast. And then I will focus on the next steps and some of the things that we will need to see continued in order to achieve the reality of having the turbines sitting out in the ocean and contributing to the electricity grid.

Starting off with why, when we look at what is required going forward and the policy settings not only here in Victoria but nationally and globally as we move towards more renewable energy sources, it is important that we have a range of different technologies. Here in Australia and Victoria we have seen the uptake of a number of technologies, specifically being onshore wind, solar, rooftop solar. We are starting to see a lot of battery storage technologies. But to achieve the full decarbonisation of the electricity system we will need to see some 15 times the current amount of installed capacity of renewable energy. When you look at the opportunities of how to do that, offshore wind is a resource that has not been harnessed. We have been studying for a number of years specifically the wind resource off the coast of Victoria, off Gippsland in Bass Strait, and it is one of the nation's

windiest places. It is a resource that has not yet been harnessed and the technology does exist globally to be able to harness that energy.

The reason many countries have been going offshore is that not only is the wind stronger, and I can attest to that having been out in Bass Strait on a boat on numerous occasions, it is more consistent, it is more reliable than what we see in other locations, particularly onshore where there might be obstacles. The other strong benefit is the ability for larger scale projects. If you look at the turbines that are being developed offshore, they are significantly larger and therefore more efficient. They can capture more wind to put back into the grid. We also do not face the same space constraints, naturally, with other competing users of land, enabling some hundreds of turbines to be installed that do not impact on some of those uses such as agricultural use and urban development that we see in other areas.

Finally, if I look at the ability for the creation of a new industry, and I think this is something that many countries—specifically the UK—have really tapped into, it is being able to rejuvenate coastal towns, some of which have worked with economies in, for example, oil and gas or fishing that have declined over the years. But equally the opportunity here in Australia for some of our coal mining regions—there is an opportunity to continue that tradition of power generation with the skilled workers that we have in those regions into a new sector with projects such as ours, estimated to create some hundreds of ongoing jobs, some thousands of jobs during construction but hundreds of ongoing jobs due to the nature of this industry being offshore. So they are some of the important factors.

When we look at that opportunity, we see countries around the world, starting in Denmark where the first turbine was installed in the ocean in 1991, and, as I mentioned, the UK and other European nations, have been developing offshore wind for a number of years. But we are really seeing the new frontier with the United States and many, many countries in the Asia-Pacific starting to accelerate their ambition for offshore wind. So it is important to look at that opportunity for Australia, and that is why we have been developing the Star of the South project, which kicked off in earnest from 2019, which was the year we were awarded an exploration licence from the federal government and that kicked off a range of studies—wind and wave measuring, environmental data collection; We have done a lot of work around transmission and grid studies—to enable us to progress this opportunity. We are currently in an environmental assessment phase of the project, which will continue for a number of years, and we hope by the middle of this decade to make a decision to proceed to construction, enabling power to come into the grid by 2030.

Now, that is what we are doing, but perhaps just to mention the size of the project. We are exploring up to 2.2 gigawatts of electricity. So again, just highlighting that scale, it is close to 20 per cent of the state's energy needs, powering up to 1.2 million homes, so we are talking about a very, very large scale renewable project.

If I just focus briefly on what we need to make it happen, and I think this is a really important point for government to consider, the policy settings that would enable an industry like offshore wind to come forward in this state. One of the more significant developments occurred a few weeks ago when we saw the Victorian government release the offshore wind policy directions paper, setting a level of ambition to have the first offshore wind power coming in in 2028, building up to 9 gigawatts of offshore wind power by 2040 to play a role in the energy mix. That has been critically important to the private sector, giving the signals that we need to continue on with project development and to ensure we are working with a government that will also look at the necessary steps—the enabling infrastructure and all of the requirements to bring that technology online.

If I also look at the federal government, we were very pleased in November last year to see the Offshore Electricity Infrastructure Bill pass through the Parliament, which was again another very, very big milestone for this industry. We expect to see over the coming months the next stages under that process in terms of the licensing schemes for the seabed, being in commonwealth waters, and certainly to see that momentum continue. I am sure there are questions, so I might just leave the remarks there. I am happy to answer any specific points as we go through.

**The CHAIR:** Great. Thanks so much for that, Erin. I really appreciate it. All right. Well, over to questions. So, Ms Taylor, we might start with you with a question.

**Ms TAYLOR:** It is a really, really exciting project. It goes without saying. It is really amazing. Just in talking about job transferability from, say, oil and gas to this industry, do you see specific subsectors within that industry? I am obviously posing a very broad question, but I am just interested to see what potential there is.

**Ms COLDHAM:** Certainly. It is something that is a big focus for us right now because we know any Gippslander we talk to and many people in the regions want to understand what those opportunities look like. We have done a lot of research. What we know in terms of the oil and gas sector is around two-thirds of the jobs that you see in offshore oil and gas also exist in offshore wind. So there are great opportunities to transfer those skills. But equally, being in Gippsland, this is where again we are seeing strong collaboration. Speaking on behalf Star of the South, we are working very closely with EnergyAustralia, the owner of the Yallourn power station, which is scheduled to close in 2028, to understand, as part of their transition planning and jobs mapping, what those jobs are that currently exist in the region in those facilities—not just the direct jobs with that workforce but also the contractors and the suppliers from the region—and how they can transfer into an offshore wind industry. So they are the conversations that we are having at the moment, and certainly as we go through we will look to publish a lot of that information and engage with those workers and all of those relevant agencies to ensure that people can understand that opportunity and, importantly, see what other skills gaps there might be and what training pathways could be needed to complement those existing skills into a new offshore wind sector.

**Ms TAYLOR:** Thank you.

**The CHAIR:** Thanks, Erin. I might just ask a question following on from that line of questioning. It is good to hear about skills and training and obviously the transferability of skills as well. Obviously there are going to be different phases to the project. There is looking at the planning, then building and then in the future, maintenance and those sorts of things. What do you see, or what is Star of the South seeing, in terms of skills and developments of skills now and into the future? What sorts of things are you looking at? Is the current training that is available for people who might work in this sector adequate, and where will it go into the future? What are the needs into the future?

**Ms COLDHAM:** We see, as I mentioned earlier, that there is a lot of good overlap at the moment as a starting point. The types of skills we would look for in terms of construction and the long-term proposition are mechanical skills, electrical skills, marine crew, boilermakers, welders and all those typical trades. A lot of those opportunities exist, and we are in conversations, particularly with the regional training and educational facilities such as Federation University and TAFE Gippsland, to really present to them—I mean, one of the things we are doing at the moment is putting together some typical job descriptions for offshore wind so we can provide those to the facilities and identify exactly what additional needs there might be and, importantly, feed that back into the relevant areas of government as well. We are at the start of that journey, but we do feel that there is very good potential already for skills transfer, with some level of upskilling on the specific nature of the offshore wind activities.

**The CHAIR:** And how are you finding, particularly, attracting young people in the regions to those sorts of roles? Is that something that you have been able to do? I was asking the climate council this yesterday as well, because obviously young people have an interest in climate change and all those sorts of things, so working in renewables is a sector that is reasonably attractive to young people as well. Are you noticing young people gravitating to this, or has that been a challenge?

**Ms COLDHAM:** Certainly. We see a real appetite, and it is one of the stories we hear time and time again when we are talking with people in Gippsland. I spend a lot of time in Gippsland, and people say to me, 'There are no job opportunities here. When our kids turn 18 we know they're going to move to the city because there's nothing really here that they can see as a long-term career opportunity'. That is why we are engaging early through programs such as Broadening Horizons with the local secondary colleges and also with the universities, as I mentioned earlier, to help paint that picture of what that industry could look like and not waiting until we get to the point of construction. We have a wonderful story right now where again a young local in Yarram moved away to Melbourne—no jobs—and I am really happy to say she is now employed with us on Star of the South in our Yarram office and has been able to move home, close to her family, and go back to her footy club and her netball club because there is a job there for her in the region and in a field that she is very excited about. So throughout all stages of the project we are looking at how we can really help boost those local economies and provide those opportunities for local workers, young workers, with a range of different, diverse angles.

**The CHAIR:** Awesome. And one last bit from me: I was just going to ask about the diversity. What sorts of things are you doing to attract women, even people with disabilities, Indigenous—trades, apprenticeships, traineeships, those sorts of things? Is that part of your scope of work?

**Ms COLDHAM:** Absolutely. It is part of our planning at the moment. Last year we put on a new role, which is our industry development manager, and one of the aspects of that role is to develop a social procurement framework but also look at the different sectors in terms of the skills and the workforce. For example, with the traditional owners we are in conversations with the Gunnai/Kurnai representatives in the region as well as the agencies. If I can just touch on, for example, the Latrobe Valley Authority and the work of GROW Gippsland. That has been a wonderful help to our team in terms of providing us examples of what has been achieved through other major projects being delivered in the region and which businesses can help with those aspects for our workforce as well as our contracts when we get to a point of major construction. So it is something that we will continue to plan for.

**The CHAIR:** Great. Thanks so much for that. Mr Grimley, a question?

**Mr GRIMLEY:** Yes. Thanks, Chair, and thanks, Erin, for your submission. I missed a few minutes of it so apologies if you have answered this question already, but it is in relation to the Victorian government's *Offshore Wind: Policy Directions Paper* and in particular its target to have 9 gigawatts of offshore wind generation by 2040—just interested to hear your opinions on that.

**Ms COLDHAM:** Thank you for the question. It is critically important to see that ambition set and to see that communicated. So what we have seen from the Victorian government is a signal around the capacity of offshore wind that it is seeking to achieve as well as the timing, and that helps enable our decisions in terms of the ongoing investment in the development of this project to meet those targets and time frames. It has been so important to see that, because not only are we competing for that investment and the interest from the relevant suppliers and workers here in Australia but globally offshore wind is one of the fastest growing energy technologies. So a lot of the companies look for these signals from government to see if it is a government that is going to help and partner with the private sector to enable these outcomes, and it is something that we believe has been very well received, I can say, on the global stage as well as here locally. There has been a lot of attention on Victoria since that announcement.

We believe that those time frames are very achievable. I will particularly note, on having the first turbines spinning in 2028: certainly we will need to keep working at a certain pace to get that outcome delivered, but we do believe it is very possible. And working up to 9 gigawatts by 2040—there is strong potential there. As I mentioned, we are exploring up to 2.2 gigawatts with Star of the South, but we do believe Bass Strait could enable many more gigawatts, which is the policy ambition we have seen set by the Victorian government in recent times.

**Mr GRIMLEY:** Wonderful. Thanks, Erin. Thanks, Chair.

**The CHAIR:** Thank you. Mr Hayes, question?

**Mr HAYES:** Yes, thanks Chair. Thanks very much, Erin, for your presentation and your answers so far. It is great that we see there are so many employment opportunities down there on this project. I also wanted to ask about the use of the existing power infrastructure down there, such as the overhead transmission lines that already exist to Melbourne; and will there be other transmission lines required to be installed as it comes from the sea into wherever it can link up with the existing infrastructure; and also whether you see any unique challenges with putting infrastructure like this out into the Southern Ocean.

**Ms COLDHAM:** Thank you for the question. If I touch on 'Why Gippsland?', I talked about the strong offshore wind resource that exists off the coast. One of the other reasons that Gippsland is very attractive for renewable energy development is indeed the existing infrastructure and the superhighway of transmission that exists in that region. It is one of the strongest connection points in the electricity market, which is national up the east coast. Being able to plug in where there is capacity and use that existing infrastructure is so important so that we do not have stranded assets but importantly so that we are making good use of what already exists.

If I touch on the additional infrastructure that will be required, yes, certainly that is a very, very major part of our project. We will have wind turbines off the coast—some 7 to 25 kilometres off the coast. We would then

have some subsea cables that would sit on the sea floor, come to shore at a landing point, which we have identified at Reeves Beach on the coast, and then travel from the coast up into the Latrobe Valley. This is a part of our project that we have put a huge amount of energy into, specifically how we actually select that route. It is one of the things that we have been engaging with landholders on since 2020 in a formal way—and the broader community. We started this conversation with multiple routes, and we put that out for consultation to seek feedback. We then conducted what we call a multicriteria analysis, so weighing up the environmental aspects of each option, the technical feasibility of each option, the cost to the community and the landholder feedback to land on what we believe is the most sensible route. We then took that to the landholders, and we are now working through the process of negotiating agreements. Certainly we have found that that process has been going well so far.

Our project has committed to underground cable infrastructure, which has been well-received, due to the concerns that we heard again through our early stages of consultation. We have been consulting with the community on this project even going back to 2016 and 2017 and have seen those challenges in that region, so we are working through that process, and we look forward to continuing that process and doing that in step with our landholders on this project.

**Mr HAYES:** Thanks. Chair, if I could just quickly ask a quick follow-up. We have heard that undergrounding is very expensive. Can that expense be justified, or do you see that the expense is a serious problem in undergrounding the connection?

**Ms COLDHAM:** I would suggest that it depends on the nature of the development. Certainly I have heard similar comments. Particularly for a smaller renewable project—to underground a large transmission line—perhaps there is a very significant cost to that. Certainly undergrounding is more expensive. It is something that might range in terms of the factor of how many times more expensive it is depending on the exact nature. But certainly from our perspective, as I mentioned, cost was one element that we brought into this multicriteria analysis with the others weighing up certainly the risk of the project going through. If I can say, in the Gippsland region as well there have been precedents. I note the Basslink cable through its planning process did have, I believe, some 7 kilometres of its route undergrounded. We also note that the desalination plant has an underground cable, and I do believe the Marinus Link is also going underground. So for us in this particular situation it is something that we felt was an important commitment to make to enable a smooth process going forward, notwithstanding the additional cost that would come with that.

**Mr HAYES:** Thank you. Very enlightening.

**The CHAIR:** Great. Mrs McArthur, a question?

**Mrs McARTHUR:** Thank you, Chair. Now, Erin, it is music to our ears that you have come to the conclusion that undergrounding transmission is the most opportune way of delivering energy to the grid. I thank you for appreciating the concerns of stakeholders, whether they be farmers, environmentalists or householders, and coming to that conclusion. Yes, we have heard a lot about the extra cost, but nobody has really assessed the long-term benefits of putting transmission underground, and of course it is feasible. The Murraylink is underground after the fires—

**The CHAIR:** Mrs McArthur, is there a question there? If you could, your question.

**Mrs McARTHUR:** Yes. Why do you think you have been able to come to this obvious conclusion about putting the energy underground when others, especially in government, do not seem to be able to reach the same conclusion? Also given that if you go underground with 500 kilovolts you are going to save 30 per cent of the energy.

**Ms COLDHAM:** Well, touching on our specific project—again, I cannot speak for other projects, and I know there are rules in place, for example, the way that transmission is planned and developed under the Australian Energy Market Operator's RIT-T assessment; certainly that is a constraint in some of those projects where there is a certain formula that is followed to enable those decisions—in our case I can say we have done a lot of engagement from early days. Perhaps the nature of our development is different, being a very large project and having different factors to assess, but certainly we did take that approach of weighing up a multicriteria analysis and came to the conclusion that this would be the most favourable way to proceed.

**Mrs McARTHUR:** Chair, if I could just have a follow-up question. Well, you are to be congratulated wholeheartedly. Secondly, I have heard concerns that the building of offshore wind projects could be environmentally damaging to the ocean and the marine life. Can you give us an assessment as to whether there is any merit in this argument or it is fallacious?

**Ms COLDHAM:** Certainly. I would note that offshore wind projects have been built around the world, so we know that there are many techniques to minimise any impacts during that construction phase, particularly when you have quite a lot of activity to put those turbines into the ocean. But certainly we need to do our work here because this is the first offshore wind farm for Australia—we have a unique marine environment. We have spent the best part of two years undertaking one of the biggest research programs in Bass Strait's history. We have had scientists involved from a number of universities and from CSIRO looking at species. We have monthly surveys that look at the bird data, the whales; we have got microphones on the sea floor—every study imaginable so that we can understand what the current environment looks like.

We can then overlay an offshore wind farm in that environment, what changes we can expect through those construction techniques, and then we identify ways that we can minimise and reduce any impacts. We are doing that through the formal legislative pathways, both at a state level under the *Environment Effects Act* but certainly also at a federal level under the *Environment Protection and Biodiversity Conservation Act*. That information will be published publicly in a number of years once we have finished writing those tens of thousands of pages of documentation, and many people will be able to make submissions and study and scrutinise that information. Naturally we will take on any recommendations that come through that process to make sure that we are minimising any possible environmental impact.

**Mrs McARTHUR:** Thank you for that. This would be amazing research, actually, I am sure. Universities may not have the capacity to have done this sort of marine biology research. You will be making a major contribution to the scientific community in this regard. Are you working with universities to perhaps transfer that information as well?

**Ms COLDHAM:** Absolutely. Just to name a few, we are working with Monash University, Curtin University in WA, Deakin University, and as I mentioned, the CSIRO. The scientific community is just thrilled with the amount of data that is coming through in terms of the species that exist. The bird tagging—I have not talked about that and the GPS tracks of all the birds and where they are going. So it is one of the benefits, and I encourage you—we do share some information from time to time. We have had our underwater cameras down and have caught some interesting encounters between octopuses and sharks on our cameras. It has been just amazing the sorts of things you can see happening under the surface that have never been really discovered before—all through this investigation into an offshore wind project.

**Mrs McARTHUR:** Well, we can all be very grateful for this private sector development doing this amazing research that may not otherwise be happening. Thank you.

**The CHAIR:** Thanks, Mrs McArthur. We will take that as a statement. Dr Ratnam.

**Dr RATNAM:** Thank you so much, Erin, for your presentation and your submission. This is a very exciting project for Victoria and indeed the country in terms of how pioneering it is. I wanted to ask a question in terms of what we can learn from your experience, given that you are the first to launch and hopefully one of many to come across the country. I wondered if you could talk through, and you spoke to this in your submission a little bit, in terms of what you would like to see improved in the future of the regulatory environment, the acceleration of the development of the sector et cetera. Could you talk about the experience you all had, acknowledging that there would have been teething issues given it was the first of its kind? What are a couple of things you think Victoria could learn going forward in terms of the approval and getting these projects over the line—so a couple of lessons for us to make sure that we include in our findings and our thinking around how we can accelerate these projects? So one question is about the process to date and what could be improved, and the second part of that question is in terms of your projected time line of 2028 before the project goes live. Is there any detail you could give us about what will happen between now and 2028? Is there any possibility, for example, of accelerating the project coming online before 2028, or will it take that much time to get it off the ground?

**Ms COLDHAM:** Certainly. Thank you for the question. It has been an interesting journey. We often refer to ourselves almost as the icebreaker ship, and there are probably other ships behind us just waiting for us to break the ice so that they can come through. I think when I first started we were the only offshore wind project. We have got about 25, I am hearing, around Australia now due to the acceleration that we have seen. So naturally the key indicators for us have been around the legal framework to be able to build and operate an offshore wind farm, which had not existed until November last year when the Bill was passed through the federal Parliament—and that Act will come into effect from 2 June. Importantly there are still a number of steps in that process that we need to clear or understand to enable the progress—for example, the application of licences, how the whole scheme and how the regulation will work through that commonwealth legislation. It is something that we continue to engage with the commonwealth government around. At a state level we have certainly been very interested to understand the state's views on the need for offshore wind in the energy mix, and certainly the announcement around the capacity targets and the timing for those has indeed answered some of those questions. But the one that remains is around how offshore wind might come in, so what other, as I say, enabling infrastructure or what support mechanisms might exist to meet those ambition levels that have been set.

I would also point to the environmental and planning approvals process, which we touched on earlier. Naturally it is a critical part of any project, but one of the complexities we have with offshore wind is that the wind farm is located in commonwealth waters and we have a lot of infrastructure in state waters. It is almost a new process that we are going through, so that does throw up a number of questions around how the jurisdictions work together and who assesses what. Under that process we are undertaking 25 separate technical studies—very, very detailed—which is quite significant compared to perhaps some other infrastructure projects certainly that I have been involved with. It is about how we come to decisions or how government and the assessors and the regulators come to decisions on some of that information that is presented to them and how that can be done in the most streamlined way possible so that we can get the outcomes. So it is something that will require really strong collaboration between not only the state and the commonwealth governments at that departmental and regulator level but also within each system. We have a technical reference group for Star of the South which is coordinated through the Department of Environment, Land, Water and Planning. I think there are more than 20 state representatives across a number of different disciplines and areas. So it is how all of that comes together and how we can ensure all of the time frames in which we need to have those documents assessed and those answers in terms of what level of impact is going to be acceptable rather than not being able to come to a conclusion, which is the sort of thing that we have seen can slow things down, because it is brand new—it is the first time that people have had to consider these specific issues—but being able to come to swift conclusions will be something that is critically important moving forward.

**Dr RATNAM:** In terms of going forward, in terms of the 2028 time line, what are some of the critical steps in the next few years?

**Ms COLDHAM:** Certainly. Really our focus for the next year or so is preparing that documentation that I referred to and aiming to have that on public exhibition in 2023, which would enable, we believe, final approval decisions in 2024. So those are really, I guess, some of the parameters that we are working with on that approval front. We are also, as I say, keenly aware of the federal government's process around licensing. We have a licence to explore and do the work that we are doing currently. We will also need a licence to build the offshore wind farm, and how that scheme works and the timing is something that we will need some further clarification on to ensure that we have got those right approvals in place before we can proceed.

Probably one of the other things I have not touched on is the supply chain. I suppose I mentioned earlier it is a very, very competitive market. Just speaking to colleagues over in the UK, they made me aware that installation vessels are already being booked in for the years 2025–26 because there is such a tight market for these types of vessels, these very large vessels, that do not exist here. So we really need to be making decisions and setting that ambition and communicating that towards the suppliers so that we can ensure that Australia is locked in, and specifically Star of the South and Victoria, into those plans so that the components that we need produced are actually here on time and the right requirements are there to line them all up.

**Dr RATNAM:** Wow. That is really fascinating. Thank you so much for that insight, Erin—really important lessons for us to learn about the process today but also going forward. And the builds—so if you get approvals in 2024, say, planning approvals, and hopefully building approvals come through then, do you have an estimate of build time after that? Is it the four years, do you think?



**Ms COLDHAM:** Yes, we certainly believe that 2028 is achievable in terms of the construction. I mean, one thing I have not touched on is the grid connection agreement. It is a very important part. We can build the wind farm, but we will also need to get the electrons into the system, so that is another process we are working through with the Australian Energy Market Operator and other related entities. But essentially we would commence with the onshore component—see that transmission system built—as well as the offshore transmission system including the substations, and then have the turbines come in. There is an ability to stage the project, and it is one of the things that we are exploring: how it can be staged to ensure that it has come on in a way that makes sense for the grid at that point in time.

**Dr RATNAM:** Excellent. Thank you.

**The CHAIR:** All right. Now I see that Dr Bach has joined us. Dr Bach, do you have any questions?

**Dr BACH:** Thank you, Chair. Look, given that I have only just popped back from a meeting, Ms Coldham, that I am very sorry did take me away from these hearings for a short period time, I think it would be best if my time went to other members who have been here for the duration of the presentation. I see that Mrs McArthur has her hand up, so potentially to Mrs McArthur.

**The CHAIR:** Thank you, Dr Bach. I did see Mrs McArthur with her hand up. So over to you, Mrs McArthur, for a quick question, and I will come back around to others to see if they have some too.

**Mrs McARTHUR:** Thank you, Chair. And thank you again, Erin. I am aware that around the world, to ensure that these projects are streamlined and even smaller ones, there is a concierge system operating where you only have to go to one institution and that concierge system facilitates the approvals and consultation with all the other numerous convos that are involved in making decisions of this type. Would you think that approach might be valuable if we are to go down this path further for projects such as yours and even others in many areas?

**Ms COLDHAM:** We would certainly welcome any mechanism that could help streamline these processes, because they are very complex and unique. I will note that the Department of Environment, Land, Water and Planning, who leads the environment effects statement process here, in some ways does act as that concierge, convening the technical reference group and the relevant parties. But naturally we are in a bit of unique situation here in terms of the interface with the commonwealth that I mentioned earlier as well as the unique nature of the challenges. What can often happen is there are a lot of projects happening at any one time. It is difficult when there are time constraints or lots of other competing projects. So I would certainly recommend if offshore wind is something that government is very serious about, in getting up and going as soon as possible to meet those time frames, that we would welcome some assistance. I note in other sectors that has been the case—for example, the Major Transport Infrastructure Authority, which seeks to play a very strong coordination process in the delivery of major infrastructure projects. Certainly I would consider that that would be something similarly helpful when talking about such large-scale infrastructure, which is what offshore wind is.

**The CHAIR:** Great. Thanks for that. All right. We will do another round of the ground to see if anyone has got any other questions. Ms Taylor, do you have any other questions for Erin?

**Ms TAYLOR:** No, it has been really thorough. Thank you.

**The CHAIR:** I agree. It has been. Mr Hayes, yes?

**Mr HAYES:** Thanks very much, Chair. Thanks, Erin, once again. Just another thing on undergrounding, which is quite interesting to me. I want to ask: are there any other aspects, negative aspects, apart from the cost? Is there any voltage drop or loss of efficiency with undergrounding?

**Ms COLDHAM:** We are currently undertaking some proximity studies in terms of the electrical nature of particularly our proximity to Basslink and what those aspects look like. I certainly do not have that information at hand; in fact I am not sure if we would at this stage of our project. I would offer to take it on notice, and I can come back to the group on that. But certainly I think that if you are looking at some of the downsides of undergrounding, certainly the complexities—so it is probably not as easy from a maintenance perspective to come along and do the work that you need on an underground cable, given the nature of having to dig that up

and assess it rather than it being exposed and freely available. That is one of the things that we hear. But naturally we need to weigh that up against the benefits that we have considered as well.

**Mr HAYES:** Thank you.

**The CHAIR:** Mr Grimley.

**Mr GRIMLEY:** No, thanks, Chair. No, thanks, Erin. Thank you very much. I am all good.

**The CHAIR:** Dr Ratnam, any further questions?

**Dr RATNAM:** All good. Thanks so much. Really great presentation.

**The CHAIR:** Dr Bach, nothing? No. Mrs McArthur, last shot? No?

**Mrs McARTHUR:** It is fine, thank you.

**The CHAIR:** All right. Look, thanks so much, Erin. It has been an amazing presentation. It has been very thorough. As you can see, we are all questioned out, and your submission of course was very well received. Thank you so much for coming and speaking with us today. I really appreciate both your submission that you provided on behalf of Star of the South and also your evidence that you provided today.

**Witness withdrew.**