

**ECONOMICS AND INDUSTRY
STANDING COMMITTEE**

**INQUIRY INTO TECHNOLOGICAL AND SERVICE INNOVATION
IN WESTERN AUSTRALIA**

**TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
THURSDAY, 7 APRIL 2016**

Members

**Mr I.C. Blayney (Chair)
Mr F.M. Logan (Deputy Chair)
Mr P.C. Tinley
Mr J. Norberger
Mr T.K. Waldron**

Hearing commenced at 1.07 pm**Ms MIRANDA TAYLOR****Chief Executive Officer, National Energy Resources Australia, examined:****Mr KEN FITZPATRICK****Chair, Australian Energy Resources Growth Centre, examined:**

The CHAIR: On behalf of the Economics and Industry Standing Committee, I would like to thank you for your appearance before us today. The purpose of this hearing is to assist the committee in gathering evidence for its inquiry into technological and service innovation in Western Australia. You have been provided with a copy of the committee's terms of reference. The Economics and Industry Standing Committee is a committee of the Legislative Assembly of the Parliament of Western Australia. This hearing is a formal procedure of the Parliament and therefore commands the same respect as is given to proceedings in the house itself. Even though the committee is not asking witnesses to provide evidence on oath or affirmation, it is important that you understand that any deliberate misleading of the committee may be regarded as a contempt of the Parliament. This is a public hearing and Hansard is making a transcript of the proceedings for the public record. If you refer to any documents during your evidence, it would assist Hansard if you would provide the full title for the record.

Before we proceed to the inquiry-specific questions that we have for you today, I need to ask you the following questions. Have you completed the "Details of Witness" form?

The Witnesses: Yes.

The CHAIR: Do you understand the notes at the bottom of the form about giving evidence to a parliamentary committee?

The Witnesses: Yes.

The CHAIR: Did you receive and read the information for witnesses briefing sheet provided with the "Details of Witness" form?

The Witnesses: Yes.

The CHAIR: Do you have any questions in relation to being a witness at today's hearing?

The Witnesses: No.

The CHAIR: Before we ask you any questions, do you have an opening statement?

Mr Fitzpatrick: Yes. I would first like to thank the committee for the opportunity to address you. I will just make a couple of introductory comments and I will then hand over to Miranda and she can make a longer submission. The industry growth centre is actually an integral part of the commonwealth government's productivity agenda. It is really centred around growing investment and jobs. The Australian Energy Resources Growth Centre is our formal name. As Miranda indicated, we are going to be trading as National Energy Resources Australia, or NERA, so there is just that legal distinction between the formal company name and NERA. Our growth centre is one of six growth centres that the federal government has set up and funded for four years. What is really exciting is that NERA is going to be located in Kensington—it is co-located with WA:ERA and the CSIRO in the ARRC building in WA. We have got very good support from the WA government to establish NERA in Perth. I will now hand over to Miranda for some more details.

The CHAIR: I am going to have to excuse myself at this point. Is that okay?

The Witnesses: Yes.

Mr P.C. TINLEY: It is not anything you are about to say!

The CHAIR: I only have one school group a year coming to Parliament and they are here today.

[Mr P.C. Tinley took the chair.]

Ms Taylor: And they are coming today. I saw them coming in. That is fine.

I know that it would be better if we can open up the discussion. You have been through a long process already and heard from many people. But I think it is quite important to establish, as we start out with NERA, what is unique about NERA and really where NERA is positioned in what is quite a complex landscape for the fossil fuel industry or the energy sector. It is well understood that we are at the end of an unprecedented and rapid period of growth for the oil and gas industry across Australia and for the mining industry as well. The sector, and indeed Australia as a whole, now faces some major challenges, which the papers every day are full of, so it is not something I really need to explore in depth, but, in summary, it is low commodity prices, high capital operating costs, and increasingly strong community opposition to development, which can result in costly regulatory delays for industry and blocks to further development. It is also a changing global energy market, which is really important. The whole energy story globally is changing and we have got to position NERA in that landscape. However, on the positive side, international demand for Australian resources does remain strong and Australian companies are adapting to the new business environment. Natural gas, coal and uranium will continue to be low-cost and reliable sources of power, and uranium will continue to play a significant role in a diverse energy mix. The majority of the world's electricity needs will still be fuelled by natural gas, coal and uranium up to 2040 and beyond, and Australia can and should seize the opportunities for innovation in technology and growth that will come out of that. The challenge for us is to do that in a sustainable and responsible way. As an additional overview, Australia is falling behind in global competitiveness. I do not really need to go into the statistics there, because I know from reading the transcripts that you have already had a fairly extensive overview of where Australia is positioned, but in that context, it is essential that the Australian oil and gas, uranium and coal sectors do work collaboratively so that we can actually maximise the growth across the value and supply chains and ensure a sector that is efficient, productive, innovative and globally competitive and also, as I have already mentioned, critically that it is socially and environmentally sustainable.

Over the last eight to 10 months, Ken has been engaging, as the chair, in extensive stakeholder engagement, so we have already spoken to over 300 people and we have had numerous face-to-face meetings and feedback. The feedback indicated that there has been a strong need for leadership to connect and leverage what the common interests are at a national level and facilitate an increased and inclusive participation. I guess the overwhelming theme from all stakeholders was the urgent need for there to be a safe place—a safe, neutral, independent, objective national space—where all players can come together to connect the dots and articulate a clear vision for maximising the value of Australia's energy resources sector over the next 10 years, and there is not that space at the moment. The vision centred around how operators in the global supply chain, SMEs, the research centre, financial entities and governments can work better collaboratively to build a sector which is globally competitive, sustainable, innovative and diverse. The great opportunity exists for Australia to find a way to drive down our project and operating costs, which remain amongst the highest in the world, although they are going down, and, more importantly, that we become best class in operations and maintenance. We can do this through innovation, but we have got to think globally and not parochially, and one of the big challenges in getting the culture change that we need across the supply chain is to start thinking and behaving in a collaborative and a global way. Really, NERA is about articulating what smart operations will look like over the next 10 years and what the integrated operations and the operator of the future looks like, and, from that, what does

that mean for the skills that we need in Australia, and how do we link the SME sector into that. At the moment, the big end of town are using smart analytics and data and they are looking at integrated, very different models of doing business, which is much more about collaboration, cross-disciplinary teams—a very, very different way of using an integrated approach to business which potentially could save billions. But the bit of the story that is not being connected is the supply chain, and I think that is where NERA's real value-add is—to be able to articulate what that smart operator will look like over the next 10 years and then to be able to work with the researchers, the supply chain and industry to be able to articulate a far more collaborative, smart, technologically driven way of doing business. That is the opportunity that we face. We cannot go back and pick up the engineering and construction phase, but we have got a huge potential to grasp the ops and maintenance phase if we can actually understand what best practice operations look like and actually work with the supply chain to enable them, because they need different skills. If we are going to operate in a way where they have got to operate in multidisciplinary teams in the ops and maintenance phase, they will need different skill bases, so we need to be able to collaborate altogether to actually maximise that value.

So NERA will do what we have been tasked to do through six strategies—connecting industry stakeholders to promote collaboration and innovation and facilitating deeper engagement between industry and researchers to promote industry sustainability. I think this is a really important one and part of being a smart operator is also about being a clean operator and actually using the transition over the next 10 years to look at the opportunities to work between the renewables sectors and others and what the potential is for hybrid technology. It has to be an important part of our story. While that is not our first remit, nevertheless, to be an efficient and a smart operator is also to be a sustainable and clean operator. That is obviously something that is really important to industry. Part of that is actually having trusted and independent custodians of independent scientific data, and the GISERA model in Queensland with the coal seam gas sector is getting some traction at the federal level, and there is also some work in WA with the blueprint marine science, which is a good model where we are getting stakeholders to the table and everybody is agreeing on what the research priorities are. It is a very, very good model of taking the community and stakeholders right from the beginning of agreeing on what research priorities are and getting ownership of those. It is a very good model and NERA would like to support that Western Australian initiative. We will be located, as Ken has already said, at CSIRO. At this point we have established a diverse team, so we have expertise in the skills area, in the research area and in the supply area, and we think that that is the best approach—to having a newer team who can work to articulate what smart operations mean over the next 10 years into those three areas and help us deliver the strategies. So we thought at that point we might open up and allow you to ask questions from us.

The ACTING CHAIR: That is fascinating—you should keep going. It is quite new to everyone, and obviously new to you in a lot of ways as well. You talked about productivity impediments through the construction and operations phases of various projects. One of the things that struck me when we did a previous inquiry was the distortion in the Australian production market that Chevron has created in all ways with the insertion of such a massive project. When we dug into it, the concerns that they had were often around the fact that they had never actually constructed a facility themselves and that had a whole lot of different issues such as specialist labour constrained time, A-class reserves 70 kays off the coast in a cyclone valley—all these sorts of things. They basically said—Roy actually basically said—that those in-country issues were a significant contributor to the overall cost overruns, which is public knowledge anyway. My question is about just making sure we can manage what we measure and that we have measured correctly. When you make a statement like that around productivity, including capital productivity, multifactor productivity as well, which is fundamentally important, have you normalised the data? It is a long question, I am sorry, but have you normalised the data in some way to give us a true picture?

[1.20 pm]

Ms Taylor: Yes. Ken can probably comment from being an operator, but I would say that multifactor productivity is very poorly understood across Australia. Most people, when they talk about productivity, are not understanding the capital investment. KPMG had a report out last week that shows that if you look at it simplistically, Australia's productivity just improved considerably because labour costs went down compared with the capital return. In reality, that does not show a true picture of Australia's competitiveness because it is only looking at wages; it is not looking at the innovation part, the stuff that is coming behind it. So, I think, absolutely. I think the economics of construction and project development are very, very different to the economics of operations. I might hand over to Ken at this point, having been an operator.

Mr Fitzpatrick: Look, I think that is right. I think we need to be looking forward so when Australia is going to have 21 trains, 10 plants of LNG, there is a real opportunity for Australia to be best in class in operations and maintenance, rather than focusing on what might have been an overrun situation on multiple projects—not just the Chevron project, but projects in Australia generally have had a poor track record over the last five years. What we need to be looking at is the types of metrics in that operations and maintenance space. We are just starting to do that survey at the moment. What we want to try and do is identify where we can actually get some improvements—some measurable improvement—in those operations and maintenance-type activities, but also we are going to be looking at industry-led research, because we are focused not just on the operations and maintenance space, but also on how we can commercialise good ideas from research, how we can improve the supply chain effectiveness and what we can do to make the regulatory regime more suitable to industry growth. We are looking for measures in all those four areas.

The ACTING CHAIR: When it comes to that measure, I think it is fundamentally important when you talk about the issue—you might call it the elephant in the room—in the gas industry particularly about installed capacity and supply for that capacity, so exploration is going to be fundamentally important to the future of maintaining the production capacity, but interoperability and cooperation between producers, which has never been a great feature of the industry, would have to be one of the—it may be more difficult—most significant contributors to productivity.

Mr Fitzpatrick: I think you are right. I think the operators are recognising in the period of low commodity prices that they need to do things differently in all of their spaces. A number of initiatives are starting both in Perth and on the east coast where the operators are actually coming together with the suppliers to look at how they can collaborate and work better together. All of these projects that are up and running now have a 25 to 30-year lifespan, so there is a long way to go and there is a big opportunity to be best in class in those operations. You alluded to the exploration phase. What is really important is that the commonwealth and state governments facilitate ongoing exploration, because that is where you backfill those plans. So it is really important from a community point of view that we understand the social, economic and environmental consequences of industry activity and continue to have that social licence to operate supported by the community and also the state and federal governments. I think there is also a great opportunity to look at how we do developments differently—for example, collaboration between operators to string together a gas gathering system where you have two or three operators combining their resources to come onto a brownfields plant rather than build another greenfields plant.

The ACTING CHAIR: So tolling is going to be a feature.

Mr Fitzpatrick: Tolling could be a feature. It depends on how that particular joint venture wants to address those commercial issues, but I do think the operators need to be more flexible in how they address that collaboration and sharing of the development of smaller resources and also the sharing of their existing infrastructure.

The ACTING CHAIR: So when we move down, it is easy when we can circle round the Chevrons and the Shells and so on, which are behemoths and large bureaucracies in their own right, but this inquiry, and probably every other inquiry ever done by Parliament, is about jobs growth, and jobs

growth up the skills spectrum. You are a national body, obviously, and you happen to be based here and, hopefully, a large amount of the activity occurs here but not all of it, obviously. One of the things that is occupying the mind of all of us is how we transition the workforce. The Chief Scientist has told us it is going to be that 40 per cent of the current jobs will not exist at a point in the future, 2030—is going to be a big time in 2030, a lot is happening there; we are all going to have driverless cars and all that sort of thing. Now what we are detecting, we are seeing, is the rise of the micro-national issue, where the value chains are global, the supply chains are global and there is a lot of component participation in various ways, be it ones and zeros in thought, but widgets as well and actual production. It seems to me that the supply chain and the efficiencies around some of the supply chain through this operations phase, which you are talking about is where the great opportunities, I agree with you, are—what research do you think you will be doing to understand that national sector?

Mr Fitzpatrick: Look, that is a very difficult question to answer definitively because Australia is so diverse, and you have regional practices that have developed. So if you look at something that is happening in the Bowen Basin or the Surat Basin in Queensland with those particular supply chains for coal seam gas, that does not really apply in Western Australia or the Northern Territory. If I just talk about Western Australia, you are going to end up with three or four large operations which will be pooling out of Perth for the same skill set, and what we want to do is to be able to have an inclusive environment where we can talk with the suppliers, the operators and, what is really important, the universities, about how we can actually develop innovative ways to reduce their operating costs. To answer your question, we are going to start off with a number of sort of supply chain forums to be able to invite the operators, the suppliers and the researchers together to identify what those issues are and then develop a program out of those forums.

Ms Taylor: I think the other thing to say is that we are one of six industry growth centres and the skill sets that we are talking about that the supply chain are going to need are actually increasingly the same whether you are in the aviation industry or whatever, so there is a massive synergy for us to be able to work with the other industry growth centres. In terms of Australia, I know the original submissions that have been made by industry to various taskforces over the last five years around skill sets has really tried to bring the focus to not be on always looking backwards at the skills, but actually to look forward. They keep saying that the jobs are not going to be there, so the skill sets that we are going to need are going to be about analytical, flexible thinking skills. The Chief Scientist keeps going on about the STEM subjects and I would throw in there myself arts as well, because I think if you are going to be innovative you have got to have—I would hasten to say it is almost going back to the old thing of having the well-based generic science, maths, technology and creative skills. The sorts of skills that we are going to need in our industry to be a smart operator, to be able to adapt and our supply chain to be able to, the other skills that we need is people who can work across teams in a collaborative way, not work in silos with a particular set of skills. I think really the research we can do, we can piggyback off a lot of what is going on in a lot of the other high-tech industries in Australia and actually build a much more flexible workforce.

The ACTING CHAIR: This is where I am a little confused. We have got APPEA, which has been around for a long time, and represented the industry quite well. I am hearing some things from APPEA, and I am not suggesting that they are right or wrong. The point is: Do you see a differentiation? What are you going to do that APPEA cannot?

[1.30 pm]

Ms Taylor: I do, and Ken can also add in there. I think we are not a political advocacy body. We are tasked to focus on our skill sets that we have brought into the team from the research sector and the supply chain sector. Our only mandate is to work on maximising the value to Australia from the oil and gas industry. We are not here to run a political —

The ACTING CHAIR: So you are not lobbying?

Ms Taylor: No, and APPEA's role is to articulate, but not to be, the forum in which any of that activity takes place. There is very little collaborative activity and research and connecting that goes on in the APPEA space; that is not what they do.

The ACTING CHAIR: It is a natural connection, because it is the industry.

Ms Taylor: Therefore, I think what we do is entirely complementary, and we would partner with them, because obviously APPEA has got a very strong voice, but what we bring is a space that brings the researchers in the supply chain. APPEA does not do that. Ken, do you want to add to that?

Mr Fitzpatrick: I would like to add in that we have an independent voice as opposed to the organisations and associations such as APPEA or the Queensland Resources Council, or the Minerals Council of Australia, who are very focused on lobbying and that political influence. While I report through to Minister Pyne, I have an independent voice. I am not taking a side one way or the other on a particular financial issue, or something that the industry is particularly lobbying for. The growth centre is viewed very much as independent advice to the department and the minister, and I think that is one of our real strengths. All of the growth centres have taken the same view that they pride themselves on being able to take that independent position to the relevant government.

The ACTING CHAIR: Is it capacity building? A lot of what you are talking about is you will see a need for collaboration and that sort of thing.

Ms Taylor: It is connecting, articulating, facilitating, developing, capacity building.

Mr Fitzpatrick: And removing duplication.

I will go back to one of your earlier questions about the work skills. The way we have structured our growth centre is with subject matter experts from industry in supply chain development, in education and work skills, and industry research collaboration, so that the three of them will work together to focus on what are the work skills of the future that we need, in particularly the VET sector, or with the universities, and then at the same time looking at what that implication is in supply chain development, because we have somebody in work skills and somebody in supply chain development for getting the right feedback.

The ACTING CHAIR: I suggest there are a few people in the critical spares team at Chevron right now who would love that sort of collaboration, a long way back!

Mr Fitzpatrick: Yes, that is exactly right.

Mr T.K. WALDRON: Can I ask a question now? You mentioned that the WA government had been a great support. Just out of interest, have the commonwealth government, other state governments, industry and universities been good support in setting up? The second question: Once you are fully up and running, how do you actually see the day-to-day operations, and do you have a focus? You have mentioned investment and jobs, and you have probably covered a little bit, but is there a major focus to start with and how do you see the day-to-day operations?

Mr Fitzpatrick: There is lots in that!

Mr T.K. WALDRON: I had to wait a while, so I had to try and get it all in!

The ACTING CHAIR: I am surprised you waited that long.

Mr T.K. WALDRON: I am very patient.

Mr Fitzpatrick: I will take them one at a time. We have had really good support from the government of Western Australia. They are giving us assistance with a number of activities associated with the supply chain, and that funding is over about a four-year period. It is \$880 000

over a four-year period to help us focus very much on supply chain development and mining equipment technical services. We also had —

The ACTING CHAIR: Sorry; you are jumping into MIT as well.

Mr Fitzpatrick: No, no; the government wants us to leap across. There is 37 per cent overlap between supply chain in MIT and supply chain.

The ACTING CHAIR: Which is your very point.

Mr Fitzpatrick: Yes. That is right. The Department of Commerce is quite particular about what we need to do over that four-year period. We really want to build on that supply chain aspect. That is why we have got the supply chain development person totally focused on that. The second point is that all the other state governments are very focused as well—South Australia, Queensland, Northern Territory, New South Wales, all very keen. Queensland supported MIT. So, if you like, WA supported us and Queensland supported MIT, so we have really got a node in Queensland already because we link quite closely with MIT. The universities are very keen. We have got foundation members with University of Western Australia and Curtin University, and the CSIRO is hosting us over at ARC building, and they are also a foundation member. The other foundation members are Quadrant, GE and Clough, so we have got quite a nice spectrum of companies that came in very early to say yes, we want you to be successful. We got support from 30 to 40 other companies like Woodside, Chevron, Shell et cetera. All the companies that spring to your mind immediately are very supportive of our initiative. You asked us what we are really looking to focus on. Coming out of our stakeholder themes, we identified eight areas. The first one that everyone is looking at is: how can we reduce cost? I think a big sleeper is decommissioning, water management and carbon management. So we are working with the companies to try to identify projects in that space. The second one is: how do we promote the sustainability of the industry, the social economic and environmental consequences? Miranda spoke about GISERA. There is also a really good initiative here with the WA Marine Science Institution on decommissioning. That is a first because we have got all the industry stakeholders around the table: fishers, pearlers, rec fishers and the oil and gas industry. The Chief Scientist has pulled that altogether with Patrick Seares. That is a program that has been going for six months and that is going to go into the next stage. The third area is unlocking marginal resources—very much shale gas, coal seam gas, other minerals. The next one is supply chain, which we have spoken about. The next one is regulatory reform, and there is another one at the bottom which is predictive analytics. We think sharing experience on using big data and predictive analytics will really improve the productivity of the plants. Woodside has an example of where it has been able to take the data from their data historian, put it through an algorithm and actually improve the productivity of some of their unit plants because they are understanding the data that is coming towards them. Sydney Water board use predictive analytics to identify where the next leak is going to happen, so there is a real opportunity if we can understand that.

Ms Taylor: I think that data analytics thing brings us back to the bigger picture, which is really understanding when we throw terms around like what a smart operator means. There is concrete work going on that part of that is around data analytics but it actually means something. It means doing your ops and maintenance and your processes in a different way with the potential to use data analytics, to get considerable reduction in downtime, so huge efficiencies. I think one of the things for us is to bring all of that together. Norway did a study in 2003, I think, where they looked at exactly what the proposition for Norway would be if they were a smart operator, and then they have looked at it again in 2015–16. One of the things for us is bringing all those things together to say, “Well, what does a smart operator actually look like?”

The ACTING CHAIR: Yes, the gold standard.

Ms Taylor: Therefore, if we think of the skills and the research and the supply chain, if we start looking at a journey over 10 years—let us be honest; I liken it, with Ken, to the safety journey that

many people have been on. When you are in a major accident–event industry, if you look back to where the industry was, it is a similar transformational journey. The thing that really is absolutely central is that it has got to have leadership, so it is really going to be about engaging industry in what we do. The first thing that we will be doing is engaging industry.

Mr T.K. WALDRON: Is that the forums you were talking about?

Mr Fitzpatrick: Yes.

Ms Taylor: Yes, the forums, because we have to have their leadership. They have to participate.

Mr T.K. WALDRON: Is that the same with your researchers?

Mr Fitzpatrick: Yes. One of our first events is going to be a domestic gas forum in Adelaide on 28 April to look at what additional research industry wants to be done to be able to develop the domestic gas market both onshore and offshore. We picked Adelaide because it is in the middle of the country.

[1.40 pm]

The ACTING CHAIR: Not quite; it is a little bit too far on the other side.

Mr Fitzpatrick: The point is that we want to have a national view, and this leads into the COAG discussion on energy.

Ms Taylor: We want to have an international view, really, do we not?

The ACTING CHAIR: Yes.

Mr Fitzpatrick: So what we are doing in Adelaide is bringing together industry and researchers to talk about what the research gaps are so that we can then have industry-proposed programs that we can co-sponsor to actually close those gaps.

The ACTING CHAIR: So, an industry-facing research arrangement.

Mr Fitzpatrick: Industry-facing research, which is really important.

The ACTING CHAIR: Just on that, when we were in Queensland, we were talking to a bunch of people up there, and MIT, as you say, is headquartered out of there, and it is very interesting that you spoke about the tie-up between the different growth centres. Is there a role for the state government, because it occurred to me there that we do stuff and they do stuff, the two biggest mining states—rocks particularly I am talking about there and everything else, I suppose. Is there going to be duplication that we currently do between either industry research bodies or public-funded research bodies? I am making this as a proposition. Would it be helpful that the state of Western Australia and the state of Queensland and probably the Northern Territory sign an MOU of some description for a collaborative arrangement about who will do what and who will not do what? I would have thought the federal government would have been particularly happy with the idea that—I am talking pure research and how we are going to approach it—I would have thought that would be a more effective use, or is that not the case; is the assumption wrong?

Mr Fitzpatrick: I think each the states, and particularly each of the universities, think that they actually own a particular piece of research. I think there has to be a natural way of playing to universities' strengths, and I see that as something that the growth centre can do.

Ms Taylor: But they might do only one bit of it, so the model would be that—at the moment the model is Stanford, only place you can do that or whatever. The view would be that if you have got industry defining and being at the table right from the beginning with what their needs are, then bits of it—instead of it being competitive and they go off and do this isolated bit of research over here, actually they work together and they excel in different bits of it. So it actually becomes again a collaborative approach to research. I do not know that an MOU—I think it is actually driven from

top and bottom, which will drive the change in the way the research is done. There is a little bit about—looking at the way universities are funded for research might be more important.

The ACTING CHAIR: Who writes the cheques, yes

Ms Taylor: Does their funding drive a competitive approach?

Mr Fitzpatrick: I think the research needs to be industry driven. Some of that will be national and some of it will be regional. WA:ERA, for example, is very driven by what the partners want for their particular energy research, whereas in Queensland they have got a centre for sustainability, which very much works on what local Queensland wants. I think a better answer to your question is that all of the state governments need to look at harmonising their onshore regulations.

Ms Taylor: That would be a better question.

Mr Fitzpatrick: I think that has a real opportunity to simplify the industry, which goes across borders. For example, there are a number of regulations that are different between Queensland, South Australia and Western Australia. If you could harmonise those —

Mr T.K. WALDRON: Is that a role for you guys? Do you see that as a role for you to try and facilitate that in some way?

Mr Fitzpatrick: Yes, it is part of our agenda to stimulate the discussion, but you can imagine —

The ACTING CHAIR: Shine the light, as the Governor-General says.

Mr Fitzpatrick: Yes, shine the light. I think each of the governments have a view that their regulations are fit for purpose in protecting the community, but because of the difference between the states, you actually have industry. For example, in some states an electrician needs two different licences to actually cross the border, or you need a different haulage trailer to move equipment from one place to another. Streamlining some of those things would make a big difference in some of the operations.

The ACTING CHAIR: That is the sort of regulatory stuff you are talking about. You are not necessarily talking about NOPSEMA's role or —

Mr Fitzpatrick: Well, no. It does extend to NOPSEMA too, so there are some issues—for example, in Western Australia, having cross-jurisdictional issues with NOPSEMA and the Department of Mines and Petroleum. They are well documented and they are being worked through.

Ms Taylor: The real win for Australia—because it is true, there are different regulatory standards, and it is a Holy Grail and it tends to trigger union issues as well around electrical licensing, so it has long been an agenda of Australia to change the licensing system and it is a really complex area, but ultimately it is necessary.

You asked what are some of the things we are going to do that are practical and quick. One of the very practical and quick things is to work with Standards Australia to look at international standards, because if you want a supply chain that is able to collaborate and think globally, it has got to be able to work with standards that are global standards. It cannot be designing and fitting stuff here in Australia to meet an Australian standard, which is completely inconsistent with an international standard. One of the things we are looking at is setting up a mirror committee under Standards Australia to mirror—this is specifically for oil and gas but could also be for other sectors—the committee under ISO. There is a very good practice example here at UWA. This is a really good example where universities can work really practically. UWA led an international review of the asset management standard. The asset management standard applies to the water corporations; it applies to all the major infrastructure across the whole of Australia. UWA led the team that reviewed the international asset management standard which was actually picked up—a British standard for asset management and it is systems based. What it did was, it got rid of

a whole swag of prescriptive, old regulation and took a systems approach to asset management. The work that UWA did with the team, basically, it got called up as an ISO standard, an international standard, and then Standards Australia adopted it as an Australian standard. It is a great practical example, where now our asset management is consistent with a global way of doing business. There is huge potential there.

Mr Fitzpatrick: There is an opportunity as well, with construction standards, so that there is a cost saving if you are actually building to an international standard rather than an Australian standard. Not only does it go to the supply chain, it also goes to the construction cost and the capital cost of that next project, if you can use a common standard. They are the types of things we are looking at.

Mr T.K. WALDRON: You mentioned SMEs. As part of your role, is it looking at opportunities, further opportunities and global opportunities for SMEs, or trying to assist in that area?

Mr Fitzpatrick: Yes, absolutely. The growth centre is going to be linked with Austrade, the Entrepreneurs' Programme and hackathons.

Ms Taylor: We are judging the Woodside hackathon on the weekend, which is really about bringing SMEs —

The ACTING CHAIR: You are going to be strung out on coffee and will stay up all night!

Ms Taylor: Absolutely. The old adage goes you have got to have a lot of noise. The old model was you pick a winner and you follow it all the way through. That world does not exist any longer. You have got to have a lot of activity going on to get an outcome; it is a completely different world. Ken is really looking forward to it!

The ACTING CHAIR: With all those young people on laptops.

Mr Fitzpatrick: That is exactly why we have got a GM for supply chain development. We titled it "supply chain development" so that it does reflect the fact we want to grow that small end of town, because we want to be able to improve the innovation first and then the commercialisation. That is a space that we have to dabble in. We are all a little bit unsure what that looks like, but you have got to get in and play, and you will have some wins, but you might have a lot of failures as well. But you just have to take that and be resilient, because not every good idea is going to be successful. That is that small end of town, and then also there is a work skills space. A number of suppliers only want to supply locally. They only want to do a small job. There is only a fraction of suppliers that are actually ambitious to get up to the tier 2 size. We need to be able to work and identify the skill set for those suppliers so they can move from being a tier 4 supplier to a tier 2 supplier. That is very much what our GM supply chain development is about.

Ms Taylor: To be able to articulate, in that independent national space, what it is that the big end of town wants, what that operation of the future looks like, or even what their issues for cost savings now are and then be able to bring the SMEs in with the researchers, to problem solve, that is what is not happening at the moment. The SME end of town is not interfacing with research.

[1.50 pm]

The ACTING CHAIR: Working at that smaller end, it does ring true to me about jobs growth and jobs growth in the right area, particularly in terms of up the technical spectrum or the skill spectrum. Also within the larger companies, the big players and operators, innovation is something they always talk about, but bureaucracy internally often stymies that and it might be getting into more working inside those sort of organisations, to see where innovation, for example, comes to play. It is well documented that there is a large body of research about gender diversity, for example, within organisations. The Credit Suisse research of 3 000 companies, nine years over 40 countries—it was those companies that have gender diversity of greater than 40 per cent women in, not at your board level, actually it is at that director and GM sort of level, that makes you

30 per cent more innovative and six per cent more profitable, for listed companies. Is NERA going to participate in that part of innovation?

Ms Taylor: Absolutely. Diversity and inclusiveness are absolutely the words that I have put in—I think this is absolutely true. There is an awful lot of young people whose innovative thoughts are probably being wasted at the moment, if they are in the big companies. They have got ideas, whatever. But I think the diversity thing is big and it is very often the case with big entities that the innovations come from their rim. It will come from their operations in Africa or somewhere else. I think it is without a shadow of doubt that we have to promote, if we are going to be sustainable and socially—diversity is huge. In our team it is good to say we actually have 50–50 women and men.

Mr Fitzpatrick: And on the board, it is 60–40.

Ms Taylor: We are trying to practise, one, by having the team that we have got, so that we are actually trying to take an integrated approach ourselves, and also by our diversity, both at the board level and in the team, we are trying to practise what we think we are going to be talking about in the way we go about doing business. There is no doubt. You have sat here for how long, listening to that word “innovation” and it probably makes most people’s eyes roll, because it is —

The ACTING CHAIR: So conclusive.

Ms Taylor: Yes. I mean, it is basically just about doing something in a better way. It does not have to be new. Innovation does not mean new.

The ACTING CHAIR: Science is the invention; innovation is the application. It happens every day of the week. It might be just something that happens in accounting.

Ms Taylor: It is about looking at something smarter and doing it differently.

Mr Fitzpatrick: Can I just make one additional comment? I think being diverse and inclusive is a really important part of how we are going to be structured because it is not just about gender diversity; it is about company diversity. We are going to have, if you like, a safe space for all sizes of companies from all aspects of the industry to actually come together. We are talking about oil and gas, but also uranium and also coal.

The ACTING CHAIR: You do forget, don’t you?

Mr Fitzpatrick: Yes. We see that we can actually get the diversity of companies around the table—so we can get the operator, the supplier, the contractor, the researcher and the training provider all talking with each other. That diversity is going to be really important to move forward.

Ms Taylor: Just talking to CSIRO—I was talking to the Sydney head of the energy sector yesterday—and the great thing about being able to have partnerships with people like them is that they are working all across the energy sector. They are working in the renewables and they are working with our companies looking at the hybrid technology, and that is the inclusiveness; it is not either/or and it is not win/lose. It is not that; it is both.

Mr T.K. WALDRON: When you are working with a research institution, do you see you having a role in enhancing opportunities for tertiary training and that type of thing? Is that part of it?

Ms Taylor: I think if you grow business, then you grow the need for training, don’t you? Ultimately, if that smarter operator generates business, in effect, and the supply chain moves into that space and we work with skills and the training providers and the universities to look at what skill sets are going to be needed, then yes, I would say so. ACCEPT is a starting model.

Mr Fitzpatrick: But there is another level to that and I think, with some of the research grants that come out of the ARC and the industry transformation grants, we would be looking to see that, say, some of the PhD students that might be working for industry are actually seconded into industry for a period of time so they are not just lab-experienced people. They are actually getting out and

getting some company experience during that three-year research program. We are actually then making those PhD students and PhD researchers more suitable for industry roles.

The ACTING CHAIR: We have the lowest participation of PhDs in industry in the world.

Mr Fitzpatrick: I was just going to say that most of our PhDs come out of university and go into a research organisation. They do not go into industries. Germany is the opposite.

The ACTING CHAIR: On that note, the bells they toll, so we are going to have to conclude it. I could go all afternoon, but I would bore you and you would bore me—no, you would not bore me! I think we will just conclude it there. There are a couple of other questions, and if there are, we might just write to you and then just get you —

Mr Fitzpatrick: Sure; we are happy to do that, yes.

The ACTING CHAIR: So I will just conclude it with the more formal aspect of a hearing here. Thank you for your evidence before the committee today. A transcript of this hearing will be forwarded to you for the correction of minor errors. Any such corrections must be made and the transcript returned within 10 days from the date of the letter attached to the transcript. If the transcript is not returned within this period, it will be deemed as being correct. New material cannot be added via these corrections and the sense of your evidence cannot be altered. Should you wish to provide additional information or elaborate on particular points, please include a supplementary submission for the committee's consideration when you return your corrected transcript of evidence. If it prompts something that needs a fuller explanation or you think we would benefit from some figures or something, please do not hold back; let us know.

Mr Fitzpatrick: Thank you very much.

Ms Taylor: Thank you very much.

The ACTING CHAIR: We appreciate your time.

Hearing concluded at 1.56 pm
