

**ECONOMICS AND INDUSTRY  
STANDING COMMITTEE**

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

**TRANSCRIPT OF EVIDENCE  
TAKEN AT PERTH  
WEDNESDAY, 16 MARCH 2016**

**SESSION TWO**

**Members**

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

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**Hearing commenced at 10.19 am****Dr CLAUS OTTO****Technology Manager, Shell Australia, examined:****Mr JOHN DAGOSTINO****Government Relations Adviser, Shell Australia, examined:**

**The CHAIR:** On behalf of the Economics and Industry Standing Committee, I would like to thank you for your appearance before us here 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. At this stage, I would like to introduce myself and the other members of the committee here today. I am the chair, Ian Blayney. With me is Hon Fran Logan, the Deputy Chair, and the other committee members are Jan Norberger and Hon Terry Waldron. 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 that 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: 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 questions, do you have an opening statement?

**Dr Otto:** Yes, we do. Thank you, Mr Chairman, and members of the committee, and good morning. Thank you very much for the invitation to appear before the committee. I am Dr Claus Otto, and I am the technology manager for Shell Australia, and with me is my colleague John Dagostino, government relations adviser. As you know, Shell has a long history in innovative technology, from 1892, when we pioneered the first oil tanker. We developed oil and gas assets in the North West Shelf up to Prelude floating LNG. Shell has an open innovation policy and strategy. That means that Shell seeks actively, outside of its own technology departments, innovative technology solutions from others and through others. Shell is scouting actively, outside of the oil and gas sector even, service companies, entrepreneurs for technical solutions and collaborative opportunities. If I may give you an example, medical sciences that have scanners, x-rays, we have now adopted these x-

rays for digitising our rock core. We are looking actually into the rock and the core, and out of that we can derive the properties we need for our reservoir models and to develop our fields. So this is an example of how we look at other industries for our technology requirements. Another example of open innovation is Shell GameChanger. This is actually a web portal in Shell. Everyone can access that, and you can submit an idea, and that idea can be blue sky, can be left field, it can be very strange, even. Shell will look at that through a committee of people and say, “This sounds very interesting, maybe long term, maybe speculative. Can we seed some money and see where this goes?” That is an example for an open innovation process we have within Shell—open to everyone. As you know, we also have a long history in Western Australia with our headquarters in Perth, and, indeed, we are very proud that two weeks ago we moved into our new building on Wellington Street, Shell House. With the submission in front of you, I welcome any questions.

**The CHAIR:** Thank you.

**Mr J. NORBERGER:** Just a really brief one to start with. You mentioned a second ago that Shell is always scouting actively for opportunities to pick up on. Is that capability done globally, or is there a nascent capability in WA, so do you have scouts here in WA looking for opportunities to work with local providers?

**Dr Otto:** We have—and that is one of my roles here—to look in WA and in Perth, and in Australia for that matter, for opportunities for technical solutions which may be outside of the oil and gas sector. I do have colleagues, of course, in the world who do this as well and we collaborate together. We have specific centres embedded in science parks. An example is Boston, MIT, where we have Shell Techworks, as we call it, where we actively work and seek and screen technology opportunities or solutions. We have now one in Shanghai, and with my colleague, I am helping him also to look into Australia. It is a collaborative effort across the company.

**Mr J. NORBERGER:** What kind of networks would you rely on here locally to help you in your role of scouting out opportunities?

**Dr Otto:** For me, it is very important, for example, the Western Australian Energy Research Alliance. We have mechanisms in place where the industry partners—Chevron, Woodside and Shell in this case—work also with research members, and that is CSIRO, Curtin and UWA, but it is also open to others. Now we have the national resources growth centre, and I think this is an even better opportunity to scout and to investigate what is out there. We are looking actively through other organisations, but we do it also ourselves, and we are pretty open in terms of our technology challenges and solutions that we seek, and we give others opportunities to respond to that. In this case we use the WA:ERA mechanism, or now the new national growth centre, and we actively seek participation with them.

**Mr J. NORBERGER:** Are you part of the Prelude local content round table?

**Dr Otto:** Yes, I was. A couple of times I was involved, always representing technology and innovation, and now it is John, who is just here. I did present to the round table opportunities for working with local content, local companies, entrepreneurs who can facilitate or help on the floating LNG opportunities and operations.

**Mr J. NORBERGER:** Did anything come out of that?

**Dr Otto:** A couple of things; I can give you a couple of examples. We have identified in Perth—at the moment we are on a contract with two companies—local companies who will help us with the operation of Prelude, to make it more efficient. It is still early days, but I am always amazed about the knowledge and the innovative thinking we have here in town and in WA. There is a company, if I can mention its name, called Maxbend, and they are using mining technology that we call flow splitting. As you know, when we produce oil and gas, and we pipe it and then it is split, it is not evenly split, so you want to have an even split, and with this technology, the Maxbend technology, we can actually make sure that the fluid is going where it is supposed to go and is even. With that,

we do not have to build another riser or another pipeline to Prelude, for example. It is early days, but this is, I think, a very interesting example of how you can look outside the oil and gas sector. You look into the mining sector and say, “What you guys are doing, can we use this for the oil industry?” That is an example.

**Mr F.M. LOGAN:** I was going to ask about what Shell is actually doing in terms of the research base here in WA at the moment, if you can run through it, because it is not just about FLNG and it is not just about LNG—Shell is a big company and it is involved in lots of things.

**Dr Otto:** Yes, we are. We have a dedicated R&D budget, which is a long-term budget and we invest and sponsor R&D projects at UWA. As an example, we are working with the geosciences department on seismic reservoir modelling with Professor David Lumley. Another example is working with the holder of the Shell EMI professorial chair in offshore engineering, Professor White. He is doing research around mooring chains and anchors. That is not just for floating LNG; it is for other facilities and vessels that are operating on the North West Shelf. With Curtin, we are involved in a program called building information modelling, and this is about being more effective in building LNG plants or buildings, and also being more effective in the supply chain. So this is more around modelling. An interesting project in there is, how can we pack our containers more effectively and quickly? Half of the containers out there now are half empty and then they are shipped. How can you do this more effectively?

**Mr F.M. LOGAN:** It is simple—smaller but —

**Dr Otto:** Yes.

[10.30 am]

**Mr T.K. WALDRON:** Claus, you mention in your submission creating market conditions to support your engagement and collaborative partnerships. A lot of the things we have noticed right through the hearings is about the lack of collaboration, and there have been some good examples. Did you want to expand on how Shell collaborates and where you have had the success and how you have had the success in that area?

**Dr Otto:** For Shell, it is essential that as an industry we work together. In terms of collaboration, I am also including the other companies in town, so Chevron and Woodside. We are thinking together how can we work more effectively and more efficiently. WA:ERA, which I just mentioned before, is one of these vehicles we use to collaborate. I think the growth centre is the next step up. It is more on a national level, and it is also broader than just the oil and gas industry. But we actively seek that collaboration through these organisations. We have processes in place in-house as well where we go to the universities, to the CSIRO and where we actively seek collaboration. We encourage, of course, through WA:ERA and the growth centre because they can see what our challenges are, for the researchers and innovators to respond to our challenges. So, this is for us a very effective mechanism to find out first of all what is the capability—what is out there—but also then to start talking about how we can collaborate together, not necessarily just as Shell and an oil provider, but also as an industry. I think that is happening more and more as we go along.

**Mr T.K. WALDRON:** Just briefly on that, I noticed in one of the points in here that you have a program on offshore engineering with UWA. Does that work well and do you think you get real benefits from that?

**Dr Otto:** There are fantastic benefits, and not only for Shell, but also the industry, and not only for WA, but also globally because that research has actually been taken overseas to the Gulf of Mexico, for example. We provide Professor White with opportunities to talk to my Shell colleagues in Houston on his research, bring that there and apply it elsewhere. We are talking here about WA competency and expertise, but taking it outside of the country, and it goes vice versa.

**Mr T.K. WALDRON:** It goes the other way as well.

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**Dr Otto:** Yes. It works very well.

**The CHAIR:** One of the major themes that the committee is following is the relative lack of risk capital in Australia for early stage commercialisation. Does Shell have a corporate bench or arm, and have you given consideration to being involved in this space as a future growth strategy?

**Dr Otto:** Shell does have a venture arm; it is called STV—Shell Technology Ventures. I am not involved in that too much at the moment, but I am aware where they are and there is an opportunity for me to go to that organisation or that department—venture capitalism in Shell—to promote technology that we have identified in Perth or WA.

**The CHAIR:** So where is it run out of?

**Dr Otto:** It is from out of The Hague.

**Mr J. NORBERGER:** Claus, earlier, when you were talking about WA:ERA, you also mentioned the commonwealth government industry growth centres. I would suggest the most relevant one for yourself would probably be the Oil, Gas and Energy Resources Growth Centre. Once that is established, how would you like to see the Oil, Gas and Energy Resources Growth Centre actually operate?

**Dr Otto:** First of all, we are very pleased that the headquarters of the growth centre is in Perth, at the ARC, next to WA:ERA and with state government support and funding; we are very pleased they are in town. We fully endorse the growth centre and Ken Fitzpatrick came to us. We would like to support and help the growth centre in their agendas—this is about training and education—and also for the smaller companies to have better communication with the bigger industry companies in town. I see the growth centre as helping us, but also the SMEs to have a look in and have an opportunity to have a conversation with Shell or the Chevrans and so on. It is not always very easy for them to find out what the industry needs or what we are doing. It is changing a bit now; we are more open in what our challenges are because Shell is talking to Woodside and the Chevrans, for example, or Inpex. As an industry body in itself, how can we be better or more efficient or more cost-effective in WA? But we are looking very precisely also at what is available in Perth and WA to do that. The growth centre is for me a one stop, basically—a window for the SMEs to look into what is available, what are the other opportunities to bring their technology and solutions to bear.

**Mr J. NORBERGER:** You mentioned the SMEs, which is great. What about academia?

**Dr Otto:** The same goes for academia. Academia, in my experience, now they already have a very good rapport and network with industry, they know where to find the people. WA:ERA is an example of why it works. I think the growth centre is actually giving the opportunity to SMEs and the local companies, not just academia. That is still available.

**The CHAIR:** In these collaborative things and also when you have a centre here and you have Houston and then The Hague and everywhere else, how do you deal with IP issues when you are working across national boundaries all the time?

**Dr Otto:** Good question.

**The CHAIR:** It will take probably the rest of the day to answer it.

**Dr Otto:** For IP and commercial-in-confidence, we have our own legal departments, our contracts with the knowledge providers and universities. These are our contracts, although we do check with The Hague, with our IP lawyers, just to make sure that what is developed in the universities here can be used elsewhere outside of Australia for Shell. So it has not only Shell Australia, but also its affiliates. That is why it is possible for Professor White to go to Shell Houston and talk there about his innovative technologies. I am not an IP lawyer, but it is all written down and what is possible. We in Shell always make sure what is produced out of these R&D projects is readily available within Shell Global, so we can use it in other areas. It goes both ways, by the way.

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**The CHAIR:** How often do you think an IP issue might stop something being developed either here or in some other part of the world? The fact that Shell's got the global outlook for anything like that, and they might just say, "No, well, we're okay for Shell to deal with this in Australia or America or wherever, but we don't want to give away the global rights to it." Would that stop it from being developed?

**Dr Otto:** No. Our investment in local research and innovation is for Western Australia and for Shell Australia. That is the first. But we also always look for opportunities to bring that new technology outside of Australia. For us this is an opportunity to also say, "Look at all this good research happening in Perth." Foremost the investment we make in research and innovative technologies is for Australia, for Perth, for our operations in Western Australia, but there is always an opportunity within Shell Global that they will say this is really good research, we would like to apply this to our operations in the Gulf of Mexico, for example. There are legal boundaries around that, and I am not an expert in what is possible and what is not possible.

[10.40 am]

**Mr F.M. LOGAN:** One of the things that is really driving technological change and innovation today across the planet—it is no different for the oil and gas majors as it is for a small business down the road—is the need to be nimble and the need to be very responsive. How do you think Shell will be able to respond to that demand when your company, like most of the big oil and gas companies, is very, very conservative when it comes to innovative technologies being applied in its own workplace? You know that. I know that. You will come up with an innovation and Shell, just like Chevron and everyone else, will say, "When we see it in practice, we will have a look at it."

**Dr Otto:** It has changed in the last year. Technology an innovation is now part of our drive to be more cost effective and more efficient. Shell has a global program in place where each project needs to look at technology and innovation opportunities to be more cost effective and safe, and there is also now a requirement that these project leaders take this opportunity in their project planning. I have experienced it in Shell where they told me go away with my technology. It is now taken more seriously because there is a demand to be more effective and efficient and we are asked if we can please also drive the costs down without impeding on our safety and so on. It has changed over the years and certainly within Shell there is a behavioural change that there is a line and the project managers are looking actively at technology. They come to me and ask, "I have got this problem in the Browse Basin. In our technology catalogue we have all this and we have standards and how we are supposed to do things. What else is out there so you can help me with driving costs down so we can make this project viable?" That is when I put my innovation hat on and pick up the phone and talk to Professor White at UWA and say, "What can we do here?" Of course, I know what is happening here in Perth in terms of R&D and innovation, not just at the universities but also the smaller companies, and I also know what is happening in Shell in Brazil; I am sort of the matchmaker, I call myself, or the go-between. But you are very correct in saying it is a challenge to bring that technology to the projects and say, "Please look at this; this is important." That behaviour is changing. It comes from the top to do that.

**Mr Dagostino:** The only thing I would add, if I may, is that I think energy efficiency and CO<sub>2</sub> management would also be very important factors that have to be considered.

**Mr T.K. WALDRON:** I see Shell is the major sponsor of the Australian Innovation Challenge. Obviously, if you sponsor that, you see benefits coming out of that. Is there a role for government to be raising the profile of challenges and events like that?

**Dr Otto:** Yes. I have been involved in the innovation challenge now for two years. I have been on the ranking panel but I have not been involved in the judging and the final winners. I have not been in Canberra to celebrate with the winners.

**Mr T.K. WALDRON:** I see UWA won last year.

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**Dr Otto:** Yes. It is a very effective way of looking again at what is outside the industry, and this is not just for oil industries; it is for mining and so on. We identified a couple of ideas a year or so ago where I thought, “This is a very good research proposal.” So I made contact with that investigator.

**Mr Dagostino:** I was lucky enough to go to Canberra last year and see the winner—Robert McNaughton is the name I have got written down here. He had this idea of a microscope in a needle, which was really innovative and might change and simplify medical practice. It was a tremendous innovation. It was very small scale—I think the prize was only \$30 000, but it was a tremendous innovation and in terms of creating that sort of culture where innovation is championed and recognised and these small innovators are basically brought forward into the system. That was really welcomed. The other one, the youth innovator, had developed an app to match surplus food, so it was trying to deal with food wastage issues. Monica Davis was her name and she developed an app called Rumbi, which was about taking surplus food out of the hospitality sector and getting it to the NGOs in Brisbane—those sorts of small-scale innovators. The Australian Innovation Challenge has been great for us in basically bringing those forward and also promoting the culture of innovation, which, as Fran picked up, is an important thing in itself.

**The CHAIR:** In 2014, Shell spent \$1.2 billion on research and development. Is that in Australia or around the world?

**Mr Dagostino:** No, that is global.

**Mr J. NORBERGER:** Would you like to spend that much?

**The CHAIR:** That is my next question. What can we do to encourage Shell to invest a larger proportion of its global R&D in Australia and, more specifically, what could the Western Australian government do to encourage Shell to invest more in Western Australia?

**Dr Otto:** At the moment the R&D budget for our investment in innovation is substantial. There is a long-term vision there as well and a strategy. Can we do more with more money? I would say that if we have identified additional research, which is needed for our innovation, yes. In my view, at the moment we are doing quite well. Can the government help us with that? Yes, please. The state government could also provide to industry a vision on energy policy for the next decades to come, like a blueprint, because that is an incentive for Shell and other industries to say, “Okay, the state is going this way in terms of energy and energy efficiencies. Renewables is going to play a role here, and battery storage, so maybe that means Shell needs to diversify its traditional R&D more into the space of renewables or energy storage materials and so on.” From where I sit, I ask myself, “Is this the direction that the state is going to take?” Then Shell Australia can respond to that. To have that long-term vision coming from the state would be very helpful. Industry is looking for that direction and that strategy.

**Mr T.K. WALDRON:** You just mentioned in your opening address about—was it game portal?

**Dr Otto:** GameChanger.

**Mr T.K. WALDRON:** Is that an internal thing within Shell?

**Dr Otto:** No, it is just a word.

**Mr T.K. WALDRON:** I was trying to work out what you were getting at and I did not understand it—

**Dr Otto:** I can explain again.

**Mr T.K. WALDRON:** I am from the country. It takes me a while.

**Dr Otto:** The GameChanger is a web portal. It is a website. It is a program within Shell where we invite innovative ideas from inside or outside of Shell. Shell staff can submit an idea. Everyone can submit an idea.

**Mr T.K. WALDRON:** Do other companies do that as well?

**Dr Otto:** I do not know.

**Mr T.K. WALDRON:** Has it been successful for you?

**Dr Otto:** It has been running for 10 years and actually floating LNG came out of GameChanger. So 10 years ago somebody had this idea to put an LNG plant on a barge.

**The CHAIR:** I think it was in 1985. I should remember who it was.

**Mr J. NORBERGER:** Did they get a promotion?

**Dr Otto:** This person has lots of patents.

**The CHAIR:** Talking about the Industry Growth Centres, obviously the oil, gas and energy one would be the one that would be the most relevant to you. How do you see it operating when it opens and what sort of a role will Shell see for itself within that centre?

**Dr Otto:** Thank you for the question. It is still early days. The CEO has been announced. They moved into the Arc building, I think, last week or two weeks ago. We need to have a conversation with the CEO. In my mind it is, “What do you want to achieve this year and how can we help?” We would also like to have a conversation and say, “Can you please help us with promoting our technology needs beyond academia?” Again, there are more local companies so that they can come to the growth centre and say, “I would like to know about what Shell’s problems are.” We will be very open with this. It is not a secret, but we are looking for solutions as well and we want to do this jointly with other companies. For me, the growth centre is beyond the oil and gas sector, because this growth centre also has mining in there, I believe, and uranium and energy in general. For us, it is also to understand what else the mining industry is doing in terms of innovation and technology. Again, this goes back to my statement that we are scouting the industry beyond our own sector. I think the growth centre is a fantastic vehicle to do that and so we will actively work with the growth centre. The growth centre for me is important for promoting education and training and sciences, and that is one of the agendas. We would like to know how they are going to do this and how we can help.

[10.50 am]

**The CHAIR:** So do you see it having quite a strong focus in education?

**Dr Otto:** It is one of the five agenda points. The R&D part is in there, but let us not forget that we have the WA area already. We do not want to duplicate or make it too confusing, so we would like the growth centre to focus on education, sciences and promoting sciences in schools for the next generation of engineers and technologists who come to the market. I think that is one of the aims that they have. It needs to be seen what they want to achieve this year, and we have not seen it yet.

**The CHAIR:** One of the themes, if you like, that we get in looking in this space is that Australia has a really poor record—I think it is the lowest in the OECD—at taking research through to commercialisation. Obviously, from what you know from other parts of the world where you operate where that is done better, do you see that you could bring lessons from other parts of the world back here to see that that is done better in that institution? Would you have to be given like a formative role to be able to do that or is that something you can just do as a partner?

**Dr Otto:** We can do this as a partner. A lot of my other roles are technology deployment, we call it. If I can give you an example, we call the research work at UWA in the offshore engineering departments that they are developing at the moment the Mars Rover, if I may say so; it is basically a robot that you lower to the sea bottom and it will take soil samples. Shell is actually actively working with UWA to do field trials. Field trials are the first step to de-risking technology and making sure that it works and is safe, and then you can commercialise. Shell has no problems—that goes back to the IP issue again—that this will be commercialised by UWA eventually or handed out to a company or whatever they want. Shell is actively working with our research providers to commercialise, and we give opportunities to deploy projects, and I think that is very unique for

Shell, as an industry, that we are not just funding the research, because it is good research; we actually want to make sure that that technology is mature, de-risked and then deployed into projects. We are pretty relaxed about IP and confidentiality, to be honest. We are not looking always for a competitive edge. If it is good for Australia, if it is good for the industry, if it is good for the environment, why not share this? And you will see this more and more happening in the industry. The doors are not closed all the time, and it is actually a very nice dialogue we have with the other companies.

**Mr F.M. LOGAN:** That includes Exxon, does it?

**Dr Otto:** Exxon is not in Perth!

**Mr T.K. WALDRON:** We have a lot of oil and gas conferences here in Perth; I think there was one recently and there is another one in April—LNG 18—but the registration, I think, is in the order of about \$5 000. Do we have any initiatives to perhaps get scientists or students along to those or SMEs to get involved in those conferences, which would probably be pretty informative, I would have thought?

**Dr Otto:** I can speak only for UWA and my chair, Professor White. He will bring his students along and that is funded by Shell. It is part of the package, actually, that when we sponsor research, the students have an opportunity to go to conferences as well. It is actually up to the professors to decide whether students should go, so in this case a couple of the students from UWA will attend LNG 18, and that is one way we do this.

**Mr T.K. WALDRON:** Do other companies do similar things that you know of?

**Dr Otto:** I am pretty sure.

**The CHAIR:** Going back to your submission, obviously you have a strong background in technological innovation, so what work is Shell doing to ensure that more of your technological innovation driven by your engineers is shared with and further developed by our local manufacturing industry; and, can you give us some examples of that?

**Dr Otto:** I can give you a very nice example, actually. Thank you for the question. The *Prelude* facility is a big hull. Once *Prelude* will be on site, we need to do maintenance and inspection on the wood of the hull on the infrastructure. You may be aware that marine growth in the North West Shelf is an issue; you just have to put a metal plate in west of Rottneest and you come back after a couple of weeks and you have marine growth on it—barnacles, whatever. So, for us—Shell has a policy of not using divers—we are looking with a company in Henderson to develop technology that is a bit like a creepy-crawly to clean the hull, but without a diver. So, we are talking robotics and automation; that is very normal. That same demand or challenge is not just for the North West Shelf, but also in the North Sea and the Gulf. So in this case I am able to tell my colleagues in Houston, and in Aberdeen for that matter, that there is a company here in WA that has expertise in cleaning hulls, but we would like to take the next step to automate that. It is still very early days, but it is a very exciting opportunity. This is not just for floating LNG, this goes to —

**Mr F.M. LOGAN:** The marine industry.

**Dr Otto:** Yes, the cleaning platforms, subsea structures and so on.

**The CHAIR:** How do you find Australian graduates if you compare them to graduates from other parts of the world? Are they work-ready? What would you say about our graduates comparing them with other graduates?

**Dr Otto:** We have an intake of how many graduates?

**Mr Dagostino:** Sixteen this year, very largely from Western Australia.

**Mr J. NORBERGER:** In what field?

**Mr Dagostino:** Largely in the engineering professions.

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**Dr Otto:** Engineering process, engineering civil, mechanics, reservoir engineering—they come mainly from UWA and Curtin. Some are from Melbourne, I believe. They are very high-quality graduates. They all have not just an engineering degree, but another degree, either finance and economics or in IT, so you now have these double majors and a very broad spectrum. They are very informed about the industry as well, I have to say; it is very good. And when they enter Shell as a graduate—we call them the graduates—they go into a graduate program, which is a three to four-year program, where they have to study again, but they get practical experience as well. They have to go on the rig and we will send them overseas, maybe to The Hague, to work on projects there or to Houston—depends on their skills and their interests—and then they will come back and then have to do exams again at the end of three to four years.

**Mr Dagostino:** It is the case, Mr Chairman, that Shell Australia has been a great exporter of talent into the Shell company internationally. There are hundreds and hundreds of Australians working abroad with Shell globally. We are well and truly over represented.

**The CHAIR:** You want to watch it; we might take you over! Where is *Prelude* at? How is the time line going for *Prelude*?

**Mr Dagostino:** As you know Mr Chairman, we do not normally disclose our policy—the time line—so we might just let that one go through to the keeper, if that is okay.

**The CHAIR:** I will let that one through.

**Mr Dagostino:** I am happy to have a discussion with you, of course, about that.

**The CHAIR:** 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 to be 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.

It is possible that there are some questions we might have following on from them, so is it okay if we just write to you with some?

**Mr Dagostino:** Very good, Mr Chairman.

**Hearing concluded at 11.02 am**

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