

**ECONOMICS AND INDUSTRY
STANDING COMMITTEE**

**INQUIRY INTO THE ECONOMIC IMPLICATIONS
OF FLOATING LIQUEFIED NATURAL GAS OPERATIONS**

Please note: this transcript of evidence has been made available by the Committee for the purpose of assisting those who might be in the process of preparing a submission in aid of the Committee's inquiry into the economic implications of floating liquefied natural gas operations.

**TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
WEDNESDAY, 19 JUNE 2013**

**SESSION ONE
CLOSED SESSION**

Members

**Mr I.C. Blayney(Chair)
Mr F.M. Logan (Deputy Chair)
Mr P.C. Tinley
Mr J. Norberger
Mr V.A. Catania**

Hearing commenced at 10.15 am**TINAPPLE, MR WILLIAM****Executive Director Petroleum, Department of Mines and Petroleum, examined:**

The CHAIR: On behalf of the Economics and Industry Standing Committee, I would like to thank you for your attendance this morning. The purpose of today's session is for the committee to receive a briefing in aid of its inquiry into the economic implications of FLNG operations from the executive director in charge of the petroleum portfolio at the Department of Mines and Petroleum, Mr Bill Tinapple. I have already introduced myself and the other members of the committee so I will not go through that again.

The Economics and Industry Standing Committee is a committee of the Parliament of Western Australia. This hearing is a formal proceeding of the Parliament and therefore commands the same respect given to proceedings in the houses themselves. This is a closed briefing and Hansard will be making a transcript of the proceedings. If you refer to any document during your evidence, it would assist Hansard if you could provide the full title for the record.

Before we begin, I need to ask you a series of preliminary questions. Have you completed the "Details of Witness" form?

Mr Tinapple: Yes.

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

Mr Tinapple: I do.

The CHAIR: Did you receive and understand the information for witness briefing sheet provided in advance of today's hearing?

Mr Tinapple: Yes.

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

Mr Tinapple: No.

The CHAIR: I now invite you to give us your briefing.

Mr Tinapple: Thank you. I have a fairly wide-ranging presentation that I will give you, and perhaps we could enhance that with questions and answers. I will then finish up with a few questions that I am sure the committee is wrestling with, but I hope to give you some background. It is fairly important that the committee understands the political jurisdictions; I am sure that Fran would understand this from his previous association. I will just point to this map and show you where the jurisdictional boundaries lie, and perhaps talk a bit about the tax structures that apply in those areas. First of all, to give you one minute of history, prior to about 1970, both the Western Australian government and the commonwealth government claimed the offshore area, and it ended up that we both granted some exploration titles over the area. The commonwealth brought a High Court case in 1976, which it won, saying that they had rights to the offshore area, and there proceeded to be about four years of negotiation, which ended in 1979 with the offshore constitutional settlement. That was a complex kind of document but it still has some bearing on the way that decisions are made for offshore today.

On that map, the red line that you see offshore that goes out and around Barrow Island was a baseline, and anything that is inside that red line is clearly a state area. Western Australia, different from most other states and the NT, has a fairly large state waters area and areas that have petroleum

operations in them—Barrow Island, for example, with Apache, and Varanus Island, and some other areas.

[10.20 am]

As part of that offshore constitutional settlement, it was agreed that the state would take back a buffer zone. That is that light blue area that you see on the map—No 2—and anything beyond that in area No 1 was considered a commonwealth offshore area, and the governance structure that was set up for that was a joint authority arrangement whereby the state has some element of input into decisions, but the legislation is such that ultimately the commonwealth can overrule the state and decide unilaterally.

There was also a designated authority that applied from that time—the 1979 settlement—up until mid-2005, when the commonwealth started taking back some portions of the designated authority functions. The designated authority really dealt with the day-to-day functions—the approvals, for example, environmental and titles and safety; all three—and the joint authority dealt with high-level policy kinds of decisions, such as who should be granted permits when exploration permits were awarded.

In 2005, the commonwealth created NOPSA to manage the OHS activities offshore, and then later, on 1 January 2012, created NOPTA, which replaced the designated authority and expanded NOPSEMA's responsibilities to include the environment.

So today, in that area 1, the dark blue area, there is a joint authority that applies. The Minister for Mines and Petroleum in WA has at first instance an equal right to approve the major decisions. That would include the kind of field developments that occur, whether it is FLNG or a fixed platform or whether it is a pipeline to shore. But ultimately the commonwealth minister can override the state if they choose to. In my 27 years of being involved as a government administrator/regulator, I have never seen a commonwealth minister override the state minister; they always somehow reach agreement through consultation before that happens. But it still stays there as sort of a Damocles sword, I have to say.

The tax structure that applies offshore has been fairly important in that it is a petroleum resource rent tax. That is a profit-based tax. It allows the companies to carry forward their expenditures at differing bond rates to escalate it, and then take it off as profits occur; and once a net profit situation happens, the tax is 40 per cent. So what happens on these large offshore developments is that taxes are largely deferred until future years until cost recovery is made, and then the tax kicks in. Also, the companies are allowed to amalgamate their tax returns, so they can write off exploration expenditures that occur anywhere in Australia, or development expenditures, against income that is occurring in production areas; and that is fairly important for how the companies make decisions.

That also applies up in the Browse, where we are starting to get potential applications for FLNG. This map shows Scott Reef. Three fields are associated with Scott Reef; that is Calliance, Brecknock and Torosa. Torosa is underneath the state areas—that cashew-shaped area is actually a state offshore area—and the light blue area, the little tiny area, is Scott Reef itself, and that is basically still an onshore permit. The state has the full rights to what is in the cashew nut, and there are two retention leases, one over the small island itself and the offshore area, the cashew nut area, and there are five retention leases under the commonwealth legislation that apply to those resources. We estimate that up to 15 per cent of the gas resources for all three fields would be in the state area. So we have a bit more influence as a state over what outcomes occur for the Browse development—the Scott Reef area development—because of that state 15 per cent.

That is just by way of background, in going through what happens with Western Australia and its offshore areas. This is a history and a forecast of crude oil production. It is a problem kind of area. It is a problem for Western Australia and for Australia in that it is sliding down. We are going to be about only 30 per cent self-sufficient by 2015. There are no new oil fields that have been discovered

recently, and we import crude oil from the Middle East to put into our refineries. It is interesting to note that today, right now, we still have a deficit balance of trade on petroleum products. All the LNG that we export—some 21 million tonnes a year—does not pay for the crude oil that we import. So it is a challenge, although, as you will hear later on, that will turn around as new LNG projects come into being.

I suppose that is a little bit of an insight into what drives the commonwealth—that balance of trade. Another Damocles sword that hangs over us in Australia in the long run is just how we are going to fund those transport fuels. There are a couple of lights at the end of the tunnel and I will get to that.

This is the condensate. Condensate occurs, whilst crude oil is in a liquid state in the reservoir itself, in the gas reservoirs a certain amount of hydrocarbons that are heavier hydrocarbons, sort of C5 plusses that are actually blurred in the reservoir. They are in gas discoveries and when you produce it, you produce two kinds of liquids under certain conditions. Condensate is one. If you put a bottle of it on the table here it would be much like diesel oil condensate. LPG we know for our barbecue bottles, it is a gaseous state at atmospheric conditions. In the reservoir it is sort of in the boundary between the condensate and the gas. The condensate is driven by gas production. That is how we get the condensate. You produce gas and take it out of the gas and that is the prediction for Western Australia offshore. It is pretty level—a bit of a pick-up with these new LNG projects coming on, which I will talk more about.

[10.30 am]

This is the gas production forecast. That is what we are having happen with the boom in LNG. Our gas production offshore in WA is forecast to actually triple by about 2018, as you can see from the graph. It is quite a big thing for Western Australia. At the moment it is probably the key thing that is keeping our economy going in my view, but I may be biased. What is happening with the conventional gas resources offshore? At the end of 2010, we do not have the updated figures yet because the commonwealth has taken over that. We do not have some recent figures but we had 142 trillion cubic feet. WA produced for 2010 one TCF. At that time it was about half a TCF that went into domestic gas production and half of it into LNG. Since that time, the Pluto facility has come on board. They use about 0.2 TCF a year, so that has gone up a bit. But there has been still some new discoveries that are keeping that offshore gas still a money-in-the-bank situation. We are discovering more than we are producing. However, the offshore is becoming mature in my view. We do not have the huge discoveries we had a few years ago. There are still some world-class discoveries, but it is slowing down.

Looking at what is happening in WA in oil and gas projects, this is just in the way of background and context for you but, three and a half LNG projects. The reason I say three and a half is because one is going to be the LNG plant in Darwin but the offshore producing facilities are off WA; that is Ichthys. We have Prelude, an FLNG project, Wheatstone and Gorgon. There are two LNG projects at front-end engineering. One of those is the Browse and the other is the Bonaparte. There is \$120 billion in construction; it is a huge impact on our economy in my view. And there is \$3 billion a year for exploration. The best figures I could find on employment—my department DMP actually publishes figures, but they are not fully comprehensive. They do not cover everything. Some companies report the indirect contractors and some do not report them. But anyway, our figures we have for 2011–12 was 8 700 people, so it is quite a significant employment number—not as big as the mines, but it is still pretty good. It is probably a bit higher than that, say up around 10 000, if you include the indirects.

Just the LNG projects—I already mentioned those. We probably do not need to go through those again. Those are the ones under construction, and here are some that are under evaluation. The one to point out to you is the Scarborough. I had it listed twice there. I do not know how we did that; that is a mistake, a typo. Scarborough field is another candidate for FLNG. It is a very dry gas and it

is a long way off our coast. Exxon is considering FLNG. We have some other development projects, Macedon and the North West Shelf western flank, which are fairly big projects for us.

Just looking at the Australian LNG projects, it is amazing what is happening in Australia. Australia is producing just over 20 million tonnes a year, but we are looking at potentially going up to 122 million tonnes a year. If you look back over history, this list includes the North West Shelf project, which is 1984—in 1989 LNG started producing—and Pluto and the Darwin LNG project. But also those under construction; the Queensland CSG projects are quite amazing as well. The potential is there for Australia to be the number one LNG producer in the world. However, as you have probably read and would be aware of what happens with the US gas, one of the questions is whether we can continue to offer competitive gas and get these contracts for LNG delivery to Asia that will underwrite the LNG projects. The US now has unconventional gas into the market and their gas price is about \$3. They are looking at ways to enhance that. The US government has approved two LNG projects, one in Texas and one in Louisiana, and there are something like 20 on the drawing board, so how that will affect our Australian outlook is a good question. It is a strategic question. The commonwealth government, for example the minister, Gary Gray, believes that there is a window of opportunity to try to get some contracts signed before the US gets into the market in a big way, that window might close before long. His view is we need to grab that opportunity and develop as much LNG as we can.

Mr J. NORBERGER: Is it \$3 per tonne?

Mr Tinapple: Sorry, I should be clear on that. No; we use the unit gigajoule, which is an energy unit but it is almost equivalent to MCF, which is a thousand standard cubic feet or a million BTUs, which is another unit. They are almost very close to the same numbers. I think if you look at your gas bill it is in one tenth of a gigajoule. Our wholesale gas price in WA tends to be somewhere around \$7 to \$10 for domestic gas and maybe the LNG net back is similar to that or more towards the \$10. East coast gas is now about \$4 but going to \$6 fairly rapidly. The US, of course, has raw gas at a much more competitive situation with this unconventional gas they have, so it will be interesting competition. The big question is: how much will the US government allow the export of LNG, because it has been of great benefit for the economy there. It has turned it around from the GFC in a big way, so, will they want to export that the gas and drive up the price of energy in the US, is the question. Of course the companies that are operating here are pondering that and what affect it will have on their markets.

Mr P.C. TINLEY: Our domgas problems are minor compared to these.

Mr Tinapple: It is minor to the—I am sorry?

Mr P.C. TINLEY: Our domgas problems are minor compared to theirs and what they are going to be struggling with.

Mr Tinapple: Yes. This is just graphically showing the jump up in LNG. It is amazing where we are going and where we have come from. Talking about domgas and, Peter, this you have probably seen before. This came from a 2011 Office of Energy study, the “Strategic Energy Initiative”. So, this graph needs to be updated. We are just trying to get some numbers together to do that in fact. DMP generated this graph, but what this shows in summary is that we are a bit touch and go on our domestic gas supply, notwithstanding some of the commitments for domgas that you will hear about from the Department of State Development that I think your next witnesses are from. But on this graph—just quickly to summarise it for you—the blue is the capacity of the gas plants. The light green is an optimistic view, particularly on the North West Shelf, and that is one of the big questions.

[10.40 am]

Where will the domestic shelf, domestic gas production go? They have got a heavy drawdown on their gas reserves because of the five trains of LNG plus the 600 terajoules of domestic gas that they

put through their gas plant, and that is about 60 per cent of our WA consumption. How long they will be able to maintain the full throughput into that domestic gas plant is a big question for WA. That dark green area is if they cannot or if they only meet their sort of current commitments and they actually decrease it. Of the two lines, the top black line is a fairly optimistic growth in consumption using projects that we were aware of in 2011, mining projects. I cannot recall precisely but I think the Alcoa expansion was in that top line. And the dotted line at the bottom was just four per cent per year growth. But you can see that if you take the dark green and the dotted line, which are the most conservative assumptions, we have sometimes where it is going to be touch and go over the next few years for domestic, notwithstanding the domgas commitments that come in from Wheatstone and Gorgon.

Mr J. NORBERGER: So, they are included in this.

Mr Tinapple: Yes, they are. And the new projects, Devil Creek and Macedon, are also included in it. That is the step-ups that you see along the top blue lines.

The CHAIR: We had better keep rolling through this presentation.

Mr Tinapple: Okay. Do you want me to speed up, Mr Chairman, and just keep going?

The CHAIR: No, but if we start throwing in a lot of questions, we will run over time.

Mr Tinapple: All right. The big question for the future in Australia, and particularly for Western Australia, is this unconventional gas. This shows that the blue gas is conventional gas and where it is at and how much we have in Australia. We are blessed with resources. That is the blue. I believe that shale gas, tight gas and of course in Queensland already the CSG is booming and going on the basis for the LNG plants there, but the US Energy Information Administration service, EIA, estimated that we have 288 trillion cubic feet of shale gas in Western Australia. As you can see on that map, 229 in the Canning Basin and 71 in the Perth Basin. It is still one of the better estimates, although now it is becoming a bit aged. Their report was published in 2012, and they recently did an update on that and they have actually raised the unconventional gas estimates, the shale gas estimates for Australia. Australia on this basis was number six in the world, and WA had 77 per cent of Australia's projected shale gas reserves. That actually has gone up. We have slid to seventh place for gas, but it has gone up for all of Australia to over 400 trillion cubic feet of technically recoverable gas. There is still a question about commerciality and how much it will cost to produce that gas and what gas price it takes to make it economically viable. And I mentioned on our crude oil supply that it was an issue. A huge benefit for Australia, just like it has been for the US is they also estimate shale oil will come into the equation and estimate that Australia has 18 billion barrels of shale oil that will ultimately come into the market. So, the basic thing from this graph is that the whole dynamics, the geopolitical economic situation, if that gas comes into being, will change over what it is now, and that is not only in Australia but in the region and in the world.

Now, jumping into FLNG, you have probably seen this. This is a Shell diagram for Prelude. It just shows you what is involved with a huge vessel compacting those facilities that you see with not quite the capacity of one train you see up at Karratha into a shipshape vessel that is 486 metres long. This shows the vessel offloading LNG onto an LNG tanker. If you have ever seen them come into the harbour at Dampier, they look like huge things but they are dwarfed in this picture. That is supported by subsea wells, a turret mooring there, a huge turret mooring. They do not propose to release in the event of cyclones; they will stay on location. A turret mooring and subsea flow lines and risers and subsea wells, all of which offer potential for some Australian involvement. This just shows the LNG tanker loading and how big the vessel is. This is just a comparison. This is from Shell showing that if you stood that vessel on end, how it would compare to some other iconic buildings in the world. It is a huge vessel.

I will give just a bit of the history and current circumstances on Prelude. Prelude was discovered in 2007. They discovered the second field, Concerto, in 2009. Together, though, the fields have around

three trillion cubic feet. To put it in perspective, that is a little less than three years of our current production of gas in Western Australia. The Prelude project is likely to be the world's first. In 2011, Shell made the FID decision to proceed with the project. It is expected to stay moored at the location for 25 years, and it produced 3.6 million tonnes per year. Just to look a bit at local content, these numbers came from Shell. I have actually got a leaflet. If you have not seen it, I have got a few copies of this Shell leaflet about this area on our local content. They are just sort of coming to grips with it. Their operation and maintenance employment—actually I should put “O and M” up in front of that employment—is 350 direct, 650 indirect and of course you have the multiplier effect that occurs on any project. Just estimating the operating phase was just trying to put a number on it. Shell says that the capex is \$12 billion, the opex over 25 years is \$12 billion and it says \$500 million per year. That is what is on offer. How much could we capture in Australia is a big question, and we can get into that. Now Shell is outsourcing contracting, they estimate 75 per cent of the operations and maintenance, in other words 1 000 employees at the top, would be Australia based, or 75 per cent of the business. They will supply the operation and the maintenance for the vessel from Darwin. The drilling supply base, that is all the subsea wells that we saw, and the aviation would be supplied from Broome.

Just looking at a typical project lifecycle and where the jobs are, we are talking in the Prelude case of two years of exploration, two years of front-end engineering and appraisal, and jobs of somewhere around 300 to 500, then maybe 10 000 jobs for construction, and then 1 000 jobs for operation. So, the question is that I think you are wrestling with is: what about those 10 000 construction jobs? Should they be in Korea? Or, you know, if we had FLNG proposals, should they be in Korea or should we try to capture a portion of that in Australia—that is the question—and would alternate facilities be more of the 10 000 captured?

[10.50 am]

I think we are probably going to have a fairly high—regardless of what development occurs if it was a pipeline to James Price Point—level of input into that operational phase. The drilling phase might be in there. We can get them all there and still bring in drilling rigs from overseas and so on, but it is 10 000 construction jobs that are really up for discussion. And then of course there is the decommissioning or shutdown phase that occurs at the end of 25 years that is still big business in its own right.

The CHAIR: We have about five minutes left.

Mr Tinapple: All right; I will hurry on through. Phase 1 is six to eight wells for Prelude, and, of course, drill centres, flow lines, manifolds and risers. Phase 2 is up to 10 wells. From my view, FLNG is just a larger, more complex FPSO—floating production, storage and offtake. We have a long history of FPSOs in Australia. We currently have seven operating in WA. We had four that have operated that are now decommissioned. I think it would be interesting for the committee, I am suggesting, to look back and see what kind of spin-off we got from FPSOs, because they are a look-alike model. FLNG, yes, it is—whatever it is—five times as big, but it is the same principle, the same kind of a concept—something that is built overseas and brought and operated here. In Australia we have had just about 20—19 or 20. It has given us that operating phase input. We have had some jobs. But whether it is optimised or not, I do not know, and there are some questions about it—something the committee will want to look at.

Just issues for local content—I think you probably are already aware of these. This came from an international paper, so they are somewhat international, so maybe you will forgive that. Government instability is at the bottom of this, but they are talking about international. But they are some of the things that can have an impact on local content, and that was aimed particularly at FPSOs, that article.

Questions—I do not have all the answers. I have some views myself. But there seems to be a split opinion in Australia. Some people believe that it is a technical breakthrough, FLNG; that it will help

us get more LNG into the market; it somehow will be an offset to the car manufacturing industry and the import of crude oil, and we need to have that; it will be a technical breakthrough and that we have got to go for it, for all that we are worth, to get all the support and supply all the way from our R&D to operational. Are there opportunities for Australia that are similar to the US gulf coast or Norway? Norway and Brazil have been classic models on how to capture local content from offshore operations. Can we match those? Can we do that? Or will it just be to export jobs overseas—take 10 000 jobs and pick them up and send them to Korea? Do we want to do that?

Should Australian taxpayers support LNG? This is really a complex economic kind of situation. But every dollar that is spent on Prelude or an FLNG project or any oil and gas project, they write that dollar off against the tax structure, PRRT and corporate tax, and that means that the taxpayers in fact end up paying 62c out of every dollar. So should we support technical development by the tax structure that applies offshore through PRRT? They are some important questions for this committee to ponder and look at. Should we support jobs in Korea through this tax write-off by paying 62c out of every dollar? That is what the nature of it is. So how do we grapple with that and the policy and the tax structure that we have is an interesting question. Will it effectively recover resources? That is a problem that we have had to an extent with the FPSOs. FPSOs, as compared to fixed platforms, are a fairly high operating cost—lower capital but higher operating cost. If you look at the capex versus the opex situation, the floating facilities are usually a lower capital cost but higher operating cost. That means that they abandon or cease production at an earlier time with the floating facility than they would with a fixed facility—with an onshore LNG plant, for example. So we end up losing some of the gas in the ground, or it will be left there. Some of the oilfields that we have had in WA—for example, the Griffin field still has 10 million barrels of oil in the ground, but BHP could not afford to operate it, so they shut down the facility. Then, how will the FLNG affect the domestic gas supply? It is a valid question. We just do not know yet. With the unconventional gas, with the shale and tight gas, we may have all the gas we could possibly want. On the other hand, we could have a few gas shortages that would inhibit our resources developments over the next few years. I am afraid I ended up with questions rather than answers, but there you go.

The CHAIR: That is the way it goes. I am sorry that we have run against the clock, because I think we could probably spend another hour with you quite happily. But I would like to thank you for your attendance before the committee today. A transcript of this briefing will be forwarded to you for corrections 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 and elaborate on particular points, please include a supplementary submission for the committee's consideration when you return your corrected transcript of evidence.

I have one final request. Ordinarily, the committee would not seek to make use of any transcript of evidence until that transcript has been finalised. Next Wednesday, however, further briefings in aid of this inquiry are scheduled, and the inquiry process would be enhanced if those who are scheduled to appear could have the benefit of being able to consider the transcript of this morning's briefing. As such, I must ask you if you would have any problem with the committee providing the uncorrected proof of this morning's transcript to only those persons who will appear next week, being representatives of the Chamber of Minerals and Energy, the Australian Petroleum Production and Exploration Association and Shell Australia. Needless to say, if you grant permission for this request, the committee will ensure that attention is drawn to the fact that the transcript is an uncorrected proof and is to be considered only by the persons who will brief the committee. That is up to you.

Mr Tinapple: That is acceptable to me. I have not seen the transcripts or the proof, but I assume that Geoff got it all accurately, so on that basis it is okay with me to give this un-proofed transcript.

The CHAIR: Okay. Thanks for that. With that, I would like to thank you for your time in preparation and what I thought was an excellent briefing.

Mr Tinapple: Good. Thank you.

Hearing concluded at 10.59 am
