

**ECONOMICS AND INDUSTRY  
STANDING COMMITTEE**

**INQUIRY INTO DOMESTIC GAS PRICES**

**TRANSCRIPT OF EVIDENCE  
TAKEN AT PERTH  
WEDNESDAY, 20 OCTOBER 2010**

**SESSION ONE**

**Members**

**Dr M.D. Nahan (Chairman)  
Mr W.J. Johnston (Deputy Chairman)  
Mr M.P. Murray  
Mrs L.M. Harvey  
Mr J.E. McGrath**

---

**Hearing commenced at 9.12 am**

**WATERS, MR JASON RICHARD**

**General Manager, Trading and Fuel, Verve Energy, examined:**

**TANNER, MR FRANK ANTHONY**

**Manager, Fuel, Verve Energy, examined:**

**The CHAIRMAN:** Thank you for your appearance before us again today. This is the second time you have come before us. This committee hearing is a proceeding of Parliament and warrants the same respect that proceedings in the house itself demand. Even though you are not required to give evidence on oath, any deliberate misleading of the committee may be regarded as a contempt of Parliament. In the lead-up to today's hearing, you have indicated to the secretary that you will request restrictions of some of the questions that may be posed by the committee. In accordance with this request, we will close the latter part of the hearing to the public to discuss these questions and the manner in which you are more comfortable answering them. For now, there are a few procedural questions. Have you completed the "Details of Witness" form?

**The Witnesses:** Yes.

**The CHAIRMAN:** Do you understand the notes at the bottom of the form?

**The Witnesses:** Yes.

**The CHAIRMAN:** Did you receive and read the information for witnesses briefing sheet regarding giving evidence before a parliamentary committee?

**The Witnesses:** Yes.

**The CHAIRMAN:** Do you have any questions relating to your appearance before the committee today?

**The Witnesses:** No.

**The CHAIRMAN:** The committee has received your submission. Thank you for your contribution. Do you wish to propose any amendments to your submission?

**Mr Waters:** No.

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

**Mr Waters:** Not this time.

**The CHAIRMAN:** By way of background, could you describe how Verve sits in its roles in the SWIS in Western Australia?

**Mr Waters:** Verve Energy was formerly the generation business unit within Western Power corporation. Upon disaggregation of that entity in 2006, we were formed. We have an independent board but we remain wholly owned by the Western Australian government. We are the largest power generator in the south west interconnected system. We currently supply around 60 to 65 per cent of the electricity into the SWIS. Under arrangements structured at the time of disaggregation, we also aggregate and on sell gas to other successor entities of Western Power, those being Synergy and Horizon Power. We are a major player in the electricity market and we also provide that role of gas and gas transport aggregator on behalf of those other entities.

**The CHAIRMAN:** What proportion of electricity sold to the household sector would you provide?

**Mr Waters:** That is very hard to define specifically. We sell the vast majority of our contracts under contract to Synergy. Synergy has other contracts with other IPPs such as ERM Power and Griffin Energy. The contracts do not sheet through to a specific portion of the market. To the extent that the retail market represents around one-third of the total volume in the market, we could assume that notionally we would supply about a third of our output into that market.

**The CHAIRMAN:** How much of your generating capacity is gas fired?

**Mr Waters:** We own around 3 150 megawatts of capacity currently and 1 970 megawatts of that is gas fired. A large portion of that is peaking plant. From an energy basis, of our market share, of the electricity we sell, roughly two-thirds of that energy comes from coal and about one-third comes from gas. From a capacity basis, it is substantially the other way around. The bulk of it is gas fired or gas capable plant but because it is peaking plant, some of it operates with very low capacity factors—in the order of two to five per cent.

**The CHAIRMAN:** Are the other generators in the SWIS more gas or coal?

**Mr Waters:** On balance, more gas. Of the generators that are competitors of ours, ERM Power is a gas-fired combine cycle facility, the two Alinta machines at the Alcoa Pinjarra refinery are both baseload co-generation facilities and, in addition, there are some independent peaking machines. There is a Neerabup facility owned by ERM Power, and there is the Perth Energy – Kwinana Swift Power Station in Kwinana that was recently opened. Griffin Energy really stands alone as the major IPP burning coal. It obviously has 400-odd megawatts of plant down in Collie.

**The CHAIRMAN:** Would you say that the SWIS is relative to most other interconnected systems in Australia and very highly reliant on gas?

**Mr Waters:** That is my understanding. In comparison to the east coast interconnected system, we have a greater reliance on gas overall.

**The CHAIRMAN:** Do you have any expansion plans?

**Mr Waters:** We certainly do. The south west interconnected system will double in size over the next 20 years based on current demand forecasts. That will require roughly an additional 4 000 to 5 000 megawatts of plant to be built in the next 20 years. A key issue for us is that we currently have a cap on our generation. That was put in place to enable competition to enter the market. We would like to think that as the market matures, we will be able to grow with the market. It is Verve's ambition that we will retain market share around our current level, which obviously would require us to be building about 2 000 megawatts of new plant over the next 10 to 20 years. We see ourselves expanding.

**The CHAIRMAN:** And the SWIS expanding?

**Mr Waters:** And the SWIS expanding with that. We do not have any desires to produce off the SWIS. We see the SWIS as our market and we certainly have a view that the market really needs a competitive large generator like us in there not only providing a competitive benchmark for others to work against but also providing those critical security services that we are able to provide as well.

**The CHAIRMAN:** If you look forward—this is like looking into a crystal ball, so I understand it is a bit hazy—do you see the additional generating capacity being more coal or more gas?

**Mr Waters:** It is very difficult to answer that question because a number of factors come into play. Coal is certainly a fuel that is readily available, affordable and very secure. It does not come with the logistical issues that gas does. You could put a power station next to a mine; you cannot put a power station next to a gas field. It is as simple as that. However, coal has a problem in regards to its carbon intensity. The future of coal is very much dependant on the delivery of clean coal technology. At the moment that has some barriers to overcome. The technology available to combust coal in a manner that enables the carbon dioxide stream to be captured is certainly available, although it is not yet commercial. The technology to transport the carbon dioxide stream

and store it under the ground is also readily available; it is just not available as a commercial package.

**The CHAIRMAN:** What do you mean by commercial? Do you mean affordable?

**Mr Waters:** Absolutely, and with a reasonable risk. I think risk is a key. You could go ahead and build it today but it would be unacceptably risky, given the size of the investment. In time, the technology will mature, more people will be using it and obviously it will become a better known technology and the risk will dissipate as a result. We would like to think that that technology would be available to us by around 2020, depending on who we talk to. Some people are saying it will be a bit earlier and some people are saying it will be a bit later. That is certainly Verve Energy's view. If that technology is delivered at that point, we do see that it is likely based on pricing today and the fact that we will have some constraint placed on our carbon dioxide emissions. Whether it is a trading scheme or a tax or some other means, we see a significant future to the extent that we are talking about baseload production for coal. If that technology does not eventuate—at the moment there is some risk that it will not come in time or it may not be delivered at all—we see gas as the only viable alternative. That is on the basis that if we are burning gas at current benchmark standards of efficiency, we deliver power at somewhere near half the carbon intensity that is available from the current coal-fired technology without carbon capture and storage. By that I mean super critical or ultra super critical coal-fired technology that is available today. You can achieve a 50 per cent cut in emissions by burning gas today. However, with the pricing or the cost gap between coal and gas, it simply does not justify you doing that. That is the dynamics of it.

I am sorry that my answer is so longwinded but it is a complex issue and it is very dynamic and it is subject to the price of carbon. It comes down to the relativity between the price of coal and gas and the availability of technologies to consume coal in a clean way.

**The CHAIRMAN:** I will summarise something and you can comment for the record. You expect a very large increase in capacity over the next 20 years, if I remember correctly.

**Mr Waters:** Yes.

**The CHAIRMAN:** You do not expect the coal carbon capture process to come in until 10 years down the track.

**Mr Waters:** Correct.

**The CHAIRMAN:** Therefore, in the medium term—in 10 years—you will see most of your expansion in gas to the extent you will expand.

**Mr Waters:** We do.

**The CHAIRMAN:** Your competitors would be mostly gas too.

**Mr Waters:** Absolutely, although an important point is that at the moment the system is essentially overbuilt for baseload capacity. When I say that we do not need plant for another eight to 10 years, that is our view of the entire system. One benefit we do have currently is that we do not need to make any baseload plant decisions that will come into service until 2018 to 2020. The difficulty we face is that the decisions to deliver the plant in that timeframe have to be made in two, three or four years' time. A typical build program for a large coal-fired power station, considering the suite of approvals that have to be achieved around environmental approvals and network access and water, is certainly a major issue for us in the Collie Basin. There is a whole raft of issues to confront. You really do need four to five years to get those projects to a point of maturity to get the power station built and running.

**The CHAIRMAN:** The risk on coal is not just related to the carbon price or lack of it but also the technological risk associated with it.

**Mr Waters:** With going to carbon capture storage; absolutely. The alternative for us is that if gas is unaffordable for consumption for electricity generation purposes, we may have no option but to

essentially continue to build coal plant to our current standard. We would then have a situation in which our carbon intensity as a system would be increasing. That would certainly flow counter to the expectations of society and certainly in the opposite direction globally where people are typically heading, and that would be an unfortunate outcome for Western Australia.

[9.25 am]

**The CHAIRMAN:** Except China.

**Mr Waters:** Yes, potentially.

**The CHAIRMAN:** And India.

**Mr Waters:** I would hate to think that we would be compared with China and India on that front in any way but we may be.

**The CHAIRMAN:** They are our trading partners.

**Mr Waters:** That is true.

**Mr W.J. JOHNSTON:** In respect of this capacity issue, what is the minimum load in the SWIS in WA? Obviously you have peaks and troughs in demand. What is the absolute base?

**Mr Waters:** I do not have that answer at my fingertips. I figure it is around the 1 000 megawatt mark, maybe a little more.

**The CHAIRMAN:** What is the install capacity?

**Mr Waters:** The install capacity for the SWIS is around the 5 000 megawatt mark. We are a very peaky system, unfortunately. We are very much air conditioner driven. When you have a period of suppressed tariffs, people do not necessarily make sensible choices around the equipment they install in their homes and you get a worsening of that situation.

**Mr W.J. JOHNSTON:** One thousand megawatts is not a lot. If Griffin has 400 megawatts at Bluewaters, you must have 500 or 600 megawatts.

**Mr Waters:** Everyone gets turned down a bit overnight but we certainly see loads around 500 megawatts overnight. When I made the comment about us being overbuilt for baseload capacity, you hit on the exact point as to where that issue becomes material for us. Our economic dispatch point overnight for Verve's fleet is around 1 000 megawatts. We regularly see ourselves at 500, which means we are taking off a lot of very large plant overnight, or certainly turning that plant down.

**The CHAIRMAN:** You are spinning it.

**Mr Waters:** Exactly right, when it is very inefficient to do.

**Mr W.J. JOHNSTON:** This also goes to the question of building another 500 megawatts of coal. Would you not end up with even more capacity problems at night? I understand that coal is less flexible than gas.

**Mr Waters:** It is and that is one of the reasons we do not think we need any until about 2018 or 2020, by which stage we will have seen a substantial increase in system demand. A lot of the loads that we hope will come on will be around the Mid West subject to the delivery of the 330 kV line, and they will be baseload customers. They are obviously going to deliver an improvement in the overall system capacity factor.

**Mr W.J. JOHNSTON:** Indeed, would upgrading the network in the Mid West assist you in your economic success as well as providing a safe and reliable energy supply to those Mid West customers?

**Mr Waters:** The 330 line may be a double-edged sword. It will certainly give access to a lot of the mining loads out there that are very attractive from the perspective of a generator like ours to

connect. It will also open up access for a lot of wind farm capacity which, given their intermittent nature, may potentially offset the benefits. On balance, we would hope that the connection to those Mid West loads of a baseload nature will deliver a net improvement to the operation of the system.

**The CHAIRMAN:** Where do you think the growth will generally come from over the next 10 years in terms of type of user? Will it come from the Mid West?

**Mr Waters:** We will see a step change in system demand once that load connects in. Beyond that, I would like to think that each of the segments that we see in the market would continue to grow almost organically. I am not an expert in this area; I have to qualify that. It is a good question for Synergy. Beyond that, each of those market segments will certainly see organic growth over that period.

**The CHAIRMAN:** You will not see too much diminution of the peaky nature of the SWIS.

**Mr Waters:** By virtue of the fact that we are moving to cost reflective tariffs, that issue will eventually start to be dealt with. People will start to become cost sensitive to the point in which we can get to a better metering standard in times, giving people a “time of use” tariff. That is where the major opportunities exist. As I said, Synergy is the real expert in that area and it will be able to provide some information on that.

**The CHAIRMAN:** As you know, the reason for this inquiry relates to the concerns of the public and the industry—I think you remember the DomGas Alliance—that there is a growing shortage of gas potential and also rising prices. What is Verve’s view on this?

**Mr Waters:** To a certain extent, the price rises are an outcome of the fact that the benefit of the original reserves that were discovered many years ago and developed by the North West Shelf are being exhausted and new reserves are coming on that subject the developers to much higher costs. There is a significant factor in that—the gas is in deeper water, the cost of development has obviously gone up, the gas has dried up and the gas is dirtier and requires more treatment prior to delivery.

**The CHAIRMAN:** Drier means it does not have the high price —

**Mr Waters:** It does not have the condensate that gives that premium product revenue stream. A lot of factors have seen the price go up. Unfortunately, in the meantime, we have also seen a lack of domgas delivery come in that has left the downstream undersupplied to a large extent, which has resulted in prices published that I do not think are reflective of an effective market. They are reflective of a market that has seen supply coming in in very intermittent chunks from projects that are relatively costly and relatively small. I will take the Apache Reindeer project as an example. I think it has given evidence to this effect. It was a relatively expensive project to deliver. It was delivered at a time when the resources boom was on and it was subject to high cost. It is also not a very large field so you are amortising your investment cost base over a relatively small volume, so the result from that is higher prices. On the one hand, the cost base has come up and, on the other hand, I do not think the prices that are being contracted are reflective of a healthy market. Yes, the gas is getting more expensive but I do not think that the prices that we are seeing are really what I would consider reflective of what we should be able to get to should we have an effective market between the upstream and the downstream in regards to domgas.

**The CHAIRMAN:** Verve would understand when you do have long periods of fixed prices, markets do not clear and market signals are important. As you said, people committed to the dual cycle air conditioning, in part because electricity was cheap at that time. People have argued that in the 1980s we went through a long period of quite high priced gas. Escalation was not high and in the 1990s and part of this decade gas was quite low priced relative to prices around the world. I think for a while it was \$3.50 on average here and \$14 spot in the US. I am comparing apples with oranges here. The argument we could put to you—I accept what you said and I listened to it—is that maybe we have a market that is adjusting to rising costs, long periods of low prices and you

have to have a price stimulus for people to go out and discover and bring on markets and there are lags in discovery and development.

**Mr Waters:** I would agree with that to the extent that it applies to the domgas specific developments. For us to get the volumes that the downstream needs to continue to grow and to continue to use gas in the way that we would deem efficient to do so, we really need the development that is tied to the large LNG projects. We are not big enough as a market to get a Gorgon project up clearly. We need those projects. To some point there is not a natural tie in there to an argument that says on the one hand we have had suppressed domestic gas prices and therefore that has been a problem and therefore we need to achieve a much higher rent on LNG-based projects. I can understand we are going through a transition period, which is difficult for everyone to contemplate but the way I see it is that the message that we need to be giving to the developers of the large LNG projects is that your projects are going to need to deliver a portion of supply to the domestic market, be it 15 per cent or five per cent in Gorgon's case. For that share, you are going to achieve a fair return for your shareholders. We are not talking about them delivering gas below cost or anything like that. We want to achieve a fair return based on the capital employed specific to that portion of the project.

[9.35 am]

You can sell 85 per cent into the international market and you can achieve what you can achieve, quite frankly. We should bear in mind that to a significant extent the customers in the domestic gas market who will be buying that 15 per cent will be the likes of Verve Energy, which I would like to think do not represent a large amount of risk as a customer. We are a long-term buyer. We are state backed. I would have thought that there would be very good incentives on the basis of a fair return on your project to sell gas to the likes of Verve Energy and, for that matter, the likes of Alcoa long term. The opportunity around the remaining 85 per cent is to sell the gas globally. That is a very fair offering. The fact that that reservation arrangement is, in effect, accepted policy today is something that we support and something that we firmly believe needs to be retained as a key plank in the overall energy policy in the state.

**Mrs L.M. HARVEY:** You were saying that the cost of delivery of gas from those smaller fields has increased over time. It sounded as though you were implying that the margin that producers are placing on that gas has increased as well.

**Mr Waters:** Yes, on the first part; not necessarily on the second part. I do not know what return the sellers are targeting. Western Australia is not a cheap place to do business when it comes to construction. Add that to the fact that they are building in deeper water and more difficult areas and you will see a cost increase. In addition to that, because we have had such a shortfall in supply over so many years, there is pent up demand amongst sectors of the market. In most cases their substitution fuel is diesel and they are certainly able to pay more. That may result in higher returns overall to those parties, and if that is the case so be it. I am not suggesting for a second that there is some overall drive on behalf of those smaller projects to achieve a much greater return. Fundamentally, they need to achieve a return that justifies their project but I think the prices are based on the increased cost base. I do not really think that that is the price that we should be saying every other project should therefore earn. I think it is very unfair when you have a market that clearly is not functioning. Let us forget the reasons why. It may be based on decades of price suppression. But when it is not really functioning, it is not appropriate to say therefore the market price is \$8 or \$10 a gigajoule. The key is to get the volumes delivered and the price will be the price. The market will find the price.

**The CHAIRMAN:** Could you comment on the argument that the market is dysfunctional in that prices have shot up, costs have shot up and oil prices have shot up? They have come down but they went from \$11 to \$140 and back down to \$80 or something like that and there are leads and lags in the system. There is a price out there that is necessary to induce people to go out and explore or

encourage and build domestic processing. Who knows what the supply and response will be. It is the uncertainty.

**Mr Waters:** The market is functioning. It is just not a healthy market. In good markets, you have multiple sellers and multiple buyers and everybody achieves a nominal profit. The minute that someone achieves more than a nominal profit, there is market entry and you have this dynamic. We are miles away from that. We have unmet demand looking forward of thousands of terajoules a day.

**The CHAIRMAN:** At what price?

**Mr Waters:** I would have thought that the downstream has moved its view on price. Verve Energy is planning for a price increase but we are certainly not talking about \$8, \$9 or \$10 a gigajoule. Speaking from the perspective of the electricity industry, gas is completely priced out of the market.

**The CHAIRMAN:** I turn to the reservation policy. I take it from what you have said that you support the existing policy or is it otherwise?

**Mr Waters:** We absolutely do. It is not an issue of price. There is a security issue here. We need to get enough volumes to get the market functioning. It needs to be very delicately implemented so we do not have the market flooded with gas. We do not want the upstream losing their shirts over the supply of this gas. They have to be able to achieve a fair return. I stress the word “fair”. I am not talking about returns of 30 per cent or 40 per cent. I am talking about returns that are reasonable given the risk and the arrangements under which they sell gas into the downstream. If they do that and we get enough volumes, I am of the view that we will have a functioning market and the needs of all parties will be met in the long term.

**The CHAIRMAN:** This is a question I put to the DomGas Alliance. It is on the record. You are implying that we have a reservation to supply five per cent overall for Gorgon, 15 per cent on the original and then 15 per cent for negotiating. We accept that. You cannot just say 15 per cent on volume and it might flood the market. You do not want to do that. You are implying that we have some kind of regulated price.

**Mr Waters:** I am not talking about regulated price. I am talking about conditions—I did not say it was easy—that certainly do not regulate price but do attempt to regulate the delivery of volumes to get us to move from the supply demand imbalance we have today to some point of balance where there is real competition in the downstream for gas. That will deliver the fair and competitively based prices.

**The CHAIRMAN:** I do not think we will get too much of a market on the problems of the structure of the gas market. The government is saying reserve 15 per cent, make sure you get a fair return but do not regulate price. If you went to Gorgon and said you wanted 15 per cent of the total gas in the market, no-one would explore for anything. It would help you for a while but then it would come back to haunt you later on.

**Mr Waters:** Do not forget that we are talking about these sellers not having to sell the gas unless it is commercial to do so. If that commercial test is based on delivery of a fair return on that portion of domgas, they will see to it that the market is not flooded. It will not naturally result in there suddenly being such a flood of gas that everyone has to sell and everybody is buying gas at a dollar and we are swimming in the stuff and we start wasting it. We are not talking about that.

**The CHAIRMAN:** The reservation policy is five per cent for the overall Gorgon project. I do not know how much that will be but it is a significant quantity.

**Mr Waters:** I understand it will ultimately be 300 terajoules a day. I read that in the public domain.

[9.42 am]

**The CHAIRMAN:** But that is subject to the agreement under the policy that it has to be commercial.



**Mr Waters:** Yes.

**The CHAIRMAN:** Who determined that it is to be commercial?

**Mr Waters:** I think that is one of the flaws in the current arrangement. I do not think that is clear. I think that if you asked different members of the upstream, they would give you a different answer. What I hope was intended was, as I have explained, that their shareholders take a fair return on the domgas-specific portion of the investment and whatever portion that represents of the overall exploration investment as well. We are talking about paying for our share, but if commercial means that I have a terajoule of gas offshore in the Carnarvon basin, and I can sell it to Korea for 20 bucks, irrespective of what I can sell it to the domgas market for in WA, that is my commercial benchmark and that is what I need to get. That would be a problem, and that is certainly not what we are talking about. We are talking about a relatively small commitment overall, and about it being a critical policy measure for this state, given the reliance of our economy on gas to bring this gas to market, enabling the investors in those companies upstream to know that they are getting a fair return on what they are stumping up to deliver that gas.

**The CHAIRMAN:** We do have a rather, let us say, non-market structure and you could have market failure with fewer suppliers. The number is growing and a few pipelines are regulated. There are a few—five, I think—major purchasers. You can see no storage, no interlinkage into the markets and a high reliance on gas in the energy sector. That leads to a command and control by the regulator of the pipeline and the issues that we were discussing. The committee went over and looked at the eastern states. It used to be like this, but it is chalk and cheese now. Would you agree that the policy in the long term would be to try to move towards being larger and, therefore, more competitive at each one of the segments of the market?

**Mr Waters:** There is no question. It is very hard to make a comparison between prices in Western Australia and other markets. The east coast has multiple sellers and multiple buyers, very large mature storage facilities and a large number of pipelines. From that perspective, we are really at the very early stages. Having said that, we are a very long-term market now, but it certainly has not developed to the extent of the east coast, and geography has a lot to do with that of course.

**The CHAIRMAN:** I think Queensland told us that there was a major inquiry into the energy market in Australia in the early part of the last decade. I have forgotten who it was named after. They looked at WA and said that that was what they wanted to go for in the eastern states. Ten years later, it is the opposite. If we wanted to get away from this command and control, which leads to grief in the end, what policies can we put in place to improve the competitive structure at the very segments of the market?

**Mr Waters:** I think the downstream reforms, which have not been purely for this purpose but they have been for purposes more generally in my area of the market and certainly around electricity, have delivered benefits. They are benefits that are going to take some time to come to fruition, and we have started that journey. We have gone from a period in the 1980s when we had two buyers—SECWA and Alcoa—and SECWA in 1995 was split into Western Power and Alinta, and then Western Power split up further. In line with the market access that it was granted, it gave access to competitors to come in. You have a relatively granular downstream market now. Without making any specific comment on any individual seller group, I think it is somewhat unfortunate that we have not achieved the same level of granularity in the supply market. I know that this is not necessarily a policy issue because the ACCC has approved the joint-selling arrangements, but I struggle to see a case for new projects. It has to improve things from where we are. You cannot simply say that the domestic market is not working, so therefore we are going to allow ongoing joint selling. The worst thing joint selling will do is deliver only a small improvement overall, but you have to take a long-term view of these things. I really do believe that we need to look in the longer term at getting competition through separate selling into that upstream group.

**The CHAIRMAN:** The large joint venture arrangements, not so much the North West Shelf —

**Mr Waters:** Without talking about any projects specifically, I am just making a general point.

**The CHAIRMAN:** A general point is that you cannot see how it could hurt.

**Mr Waters:** Absolutely. I am coming from the perspective of Verve Energy having just been through a process. Across my career, that has occurred twice—the split out of SECWA and now Verve Energy. When you are subject to those sorts of changes, it is not a particularly easy process to go through. However, if you try to view it holistically, you can see the benefits. Verve Energy is a better business today for the fact that we have competitors. We know that. That is not a disputable fact. That will apply in any segment and ought to apply at all points through the supply chain. The pipeline stands as a particular problem. They are very capital intensive to build. It is hard, in my mind, to justify a number of pipelines. I think that to a certain extent having one large regulated pipeline to the extent that the regulator is discharging its obligation of ensuring that an appropriate return and a secure investment environment are maintained for the owner of that pipeline is not an efficient outcome. If you think back, we are talking about a very large and very long pipeline. To build another one for the sake of competition —

**The CHAIRMAN:** We are building another one. We are looping it so many times —

**Mr Waters:** Yes, that is a good point. The other point is the fact that it is so looped now that at some point in the near future it could be split into two pipelines. Maybe if that is the argument you are making —

**The CHAIRMAN:** If you split it in two, the argument you could put to the regulator is that they are two competing pipelines; and, if they were owned differently, they would be unregulated.

**Mr Waters:** Sure.

**The CHAIRMAN:** I do not know whether that would be beneficial, but your point is taken about that. Your basic argument is that you have to have greater suppliers of gas to the domestic market in both numbers and quantity.

**Mr Waters:** Yes; you have to build competing tension.

**Mr W.J. JOHNSTON:** I am pretty sure that you talked about gas storage options. Do you have any comment to make about that? I just preface it by saying that we discussed gas storage with the people in Victoria. They have quite a lumpy market, with a high winter demand and a low summer demand. What has been explained is that here it is quite a flat market. I wonder how big a part it can play in our gas industry here.

**Mr Waters:** Our overall take is potentially flatter. I do not know that for sure. I do not have that kind of aggregate view. But what I will tell you is from Verve Energy's perspective. I am sure you just spoke to Alinta. They will tell you that they are very much a winter-dominated market, as we are very much a summer-dominated market. We are certainly seeing a greater intra-year variance in our gas-consumption requirements. Storage for us is becoming more and more a key ingredient of where we want to head in the future. That is before you actually get to the security benefits of what a substantial storage facility can deliver the state and deliver the entities that have access to it.

**Mr W.J. JOHNSTON:** Can I just explore that question of security? Are you talking about days of supply or months of supply?

**Mr Waters:** Months is what we are talking about. If it was just days, it just would not warrant investment. If you want to build a business case around a security benefit, the threshold has to be months. It is not months at thousands of terajoules a day. I think, in aggregate, the facility that APA is developing might be delivering 150 terajoules a day. Depending on the gas that is in there at the time that any event could occur, you may have a couple of months' worth of supply. If we went back to the Varanus incident in 2008, and we had the storage facility available to us as we think it can be delivered, it would have made a substantial difference to the impact on the state that the Varanus incident had.

**The CHAIRMAN:** It is not just a topping; it is also a security issue too.

**Mr Waters:** That is right. What is particularly challenging for us is to build a commercial business case around a security-based event that might occur once every 25 years, if that. You really have to heavily discount the potential benefit to justify a business case looking 15 or 20 years into the future. That is not an easy thing to do, but it is something that we are working on.

**The CHAIRMAN:** Would you be doing it by the old pipeline or the main pipeline?

**Mr Waters:** The beauty of the Mondarra facility is that it is located exactly in between the two, and we have existing transport arrangements in both, so it gives us substantial flexibility in that regard.

**Mrs L.M. HARVEY:** Prior to the Varanus Island incident, were there similar incidents in other places in the world with gas-fired generation whereby people had seen the need to put storage facilities and those kinds of measures in place?

**Mr Waters:** I am sure it has —

**Mrs L.M. HARVEY:** You are saying that it is a once-in-20-year event. It is a once-in-20-year event in Western Australia. I do not know whether that is reflective of how it is in the rest of the world.

**Mr Waters:** It probably is. I would hope it is. When you engineer equipment, you engineer things with a factor of safety built in that sees these things being very rare; very rare in that context would be one in 25 years or less. The other most relevant one is the Longford event in Victoria, which attracted a huge amount of publicity at the time. I am sure it has occurred elsewhere. I am not particularly aware of others. It occurs from time to time. Certainly, again, without knowing the exact dynamics of the Victorian situation, my expectation would be that they would be better served today should that Longford type of event occur than they were when it did occur, as I expect we need to be if we have another Varanus event.

**Mrs L.M. HARVEY:** You mentioned earlier in the context of building more coal-fired baseload capacity that consumers were expecting better carbon outcomes from your generation —

**Mr Waters:** I think I said society generally; absolutely.

**Mrs L.M. HARVEY:** What I am interested in is whether you are experiencing any customer-driven or consumer-driven demand for renewable energies. You mentioned the wind farm options in the Mid West. What other options are you looking at for renewables?

**Mr Waters:** As a general comment, based on the limited customer signals we get—bearing in mind, as I said before, that we are not Synergy so we do not have the direct customer access that it has—we have some access to Synergy and other retailers and some other large potential loads that come to us. Affordability is the key ingredient. I must admit that reliability is a key ingredient. There are really three key things that matter now in the delivery of electricity—affordability, reliability and carbon intensity, or cleanliness. At the moment, it is very difficult for us to deliver on all three. The simple fact today is that, as an industry, we do not have an immediate substitution. Renewable energy is available to us. If I can answer your question on that point, Verve Energy has a large number of sites around the state that we are working to develop. Unfortunately, though, right at the moment, the primary form of technology available is wind, and wind has some issues. It certainly is the most affordable form of renewable energy available today; however, it still requires a subsidy to compete with fossil-fuel power. It is particularly problematic given the time of day impacts and the intermittency, which actually requires additional investment on the fossil fuel-generation side in plant that can deal with that intermittency and load following. In fact, the high-efficiency gas turbine project that is underway at the Kwinana power station right now is two 100-megawatt machines that are very efficient as open-cycle machines and they can be started and stopped without cost penalty and can go from zero to full load in a matter of minutes. A large part of the justification for us in building that facility was based on the amount of wind penetration that

the market is seeing. Wind is certainly something that we are a part of and we are developing, but we also have to be aware of the cost impact that it has.

In addition to that, you mentioned the Mid West solar; we have seen a substantial reduction in the delivered cost of solar—impressively so. If you had asked me 12 months ago, I think I would have said, “Forget solar; it’s simply not in the game.” But based on what we have seen, solar is becoming substantially more competitive, and I think that is based on the global rollout of these sorts of projects. That is now, in my view, coming along as the more viable alternative to wind. Obviously, there are logistics in getting the hundreds of megawatts of solar that you can get with wind very quickly.

**Mrs L.M. HARVEY:** One of the other things you said was that you are not dealing with the retail customers so you are not necessarily getting those signals from the market regarding renewables. You are selling electricity to people who are in contact with those customers. I wonder whether you are getting signals from those people you sell to that their customer base is expecting that or whether those people are looking to other options for their renewable energy supply to satisfy their consumer demand.

**Mr Waters:** On that point, what I meant was that we are not getting direct signals from customers on their preparedness to accept the trade-off between affordability and carbon intensity. We are getting signals from the retailers that they are very interested in renewable energy. That is because we have the 20 per cent by 2020 target. Renewable energy is part of the market, and it is on its way. The challenge for us is to find sites that enable a wind farm to be constructed that complement the system demand and complement our baseload generators without working directly against them. Our retailers are very, very keen to see renewable energy developed. The signals, however, are not as clear on the trade-off between affordability and carbon intensity. I think that society has an expectation around a reducing carbon-intensity curve for the market generally in Australia. That seems to be what people are wanting. I am not seeing the signals yet that people are prepared to pay for it. We have seen a substantial increase in tariffs in Western Australia that people have found hard to manage. When you talk about additional imposts to achieve the large cuts in carbon dioxide that people say they would also like, we are talking about another potential cost increase over and above what we are talking about now in getting to cost-reflective levels based on the current generating fleet.

**The CHAIRMAN:** If you were going to shift to 20 per cent renewables as opposed to non-renewables, what is the increase in cost of that policy to the cost structure of your organisation, which therefore has to be passed on to your customers?

**Mr Waters:** I have not costed that out, to be honest, Mike. I could not give you a number. I would have to work something up to give you an approximation of that. What I can tell you is that the average cost of renewable projects is still significantly above—I am talking probably two to three times—the price that you can deliver out of a coal-fired power station. You are still talking about, on the one hand, pricing for a wind farm of over \$120 or \$130 a megawatt hour.

**The CHAIRMAN:** If you go to 20 per cent of your capacity—this is general because it is not baseload, but it has priority so it is the first one to come off the rank as I understand the system—and it is twice as expensive, you are going to get a 10 per cent increase in cost.

**Mr Waters:** You are, although that is largely dependent on the extent to which you build those facilities in the SWIS or you simply acquire the renewable energy certificates from the other markets. I have not seen analysis that suggests that we are going to build the 20 per cent in Western Australia, because the scheme does not work that way. The retailers can acquire the RECs.

**The CHAIRMAN:** Other state markets.

**Mr Waters:** Other state markets. If you have a thousand-megawatt wind farm that gets built attached to the NEM, at that economy of scale they would be able to deliver it cheaper. Depending

on the prevailing REC price, the retailers here may be able to acquire the RECs from those other markets.

**The CHAIRMAN:** But I think the policy of the government, as I understand it, is to aim to get 20 per cent here in WA.

**Mr Waters:** I think it quite rightly sees it as though the state needs to make a significant contribution towards it. I have not seen anything around policy that says that we will get to 20 per cent within WA.

**The CHAIRMAN:** Is geothermal an issue?

**Mr Waters:** We see that as being a little way off, as I understand it. I am not personally up to speed on that technology. We have others in Verve Energy who are. The latest advice I have is that it is probably a second or third-tier type of technology. There are still some hurdles to overcome. It is very expensive drilling. There are lots of wells to be drilled. Whether you talk about geothermal or hot rock, there are heat exchanger technology issues, as I understand it. There are a number of hurdles yet.

**The CHAIRMAN:** Are you focused on unconventional gas sources at all?

**Mr Waters:** We keep an eye on it; however, what I would say is that, to date, what has been Verve Energy's model is that we like to deal with the core suppliers of gas in the market. We very much have a view that, as Verve, we want to stick to our knitting and be a very good generator. We want to buy gas from mainstream sellers whose expertise is in selling and marketing gas. We have not gone in any commercial way into the root of the unconventional developments at this stage. But, certainly, as pressure builds as we head into this decade, and if we are not given some certainty that there is going to be domestic volumes available that will meet our forward demand requirement, we will have to start to look at different alternatives.

**Mrs L.M. HARVEY:** You mentioned earlier some of the issues that you are facing with water. Are you doing your own work on trying to establish access to water, or are you relying mainly on the department and the Water Corporation?

**Mr Waters:** The Collie basin is the key part. We work extremely closely with the Department of Water and Wesfarmers' Premier Coal down there to make sure that we use water in an agreed priority and that we certainly minimise usage and certainly minimise wastage, and that we also work to a longer term goal of lowering the salinity in the basin, which is a major issue currently. There are two issues there. One is: how do we get enough water to sustain the operations of the Collie basin to the extent that the existing group of plant is down there? By that I mean Muja power station, Collie power station and Griffin's Bluewaters power station, all of which require a huge amount of water. There is a lot of planning work going on into how we best use water over the remaining lifetimes of those facilities. For our second next generation group of plant that we see from 2020, we are actually talking about them being more than likely dry cooled. The 90-plus per cent of the water that a power station uses is in cooling. We basically bring huge volumes in, we run it through a heat exchanger and we evaporate it. Dry cooling is where we see the future for the Collie basin, which will substantially reduce our reliance on water.

**Mrs L.M. HARVEY:** Is there a difference between the water requirements for gas-fired and coal-fired?

**Mr Waters:** They are similar, although I guess I stand to be corrected on that point because I am not entirely sure. But, certainly, from our perspective, Cockburn power station, which is our major gas-fired plant, is located at Kwinana. It is seawater cooled, so we do not have the same specific consumption issues. If it was a gas-fired power station at an inland site that was combined cycle whereby you are employing the use of a steam turbine, you would have a water usage problem. If you go to our Pinjar power station site, you will see that, as open-cycle gas turbines, they use a very small amount of water. Open-cycle gas turbines are not an issue. The minute you go to combined

cycle whereby you employ the use of a steam turbine, you certainly do have a water-consumption requirement.

**The CHAIRMAN:** Thanks very much. We will go to the in camera section now, so we ask the people at the back to leave us.

**[The committee took evidence in camera]**