REPORT OF PROCEEDINGS BEFORE

COMMITTEE ON THE SUPPLY AND COST OF GAS AND LIQUID FUELS IN NEW SOUTH WALES

INQUIRY INTO THE SUPPLY AND COST OF GAS AND LIQUID FUELS IN NEW SOUTH WALES

At Sydney on Wednesday 28 January 2015

CORRECTED

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The Committee met at 9.30 a.m.

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PRESENT

The Hon. R. Borsak (Chair)

Ms J. Barham
The Hon. N. Blair
Mr S. MacDonald
The Hon. Dr P. Phelps
The Hon. A. Searle
The Hon. M. Veitch

CHAIR: Welcome to the first hearing of the Select Committee on the Supply and Cost of Gas and Liquid Fuels in New South Wales. This inquiry will be examining gas and liquid fuel supplies, costs and availability in New South Wales. Before we commence, I acknowledge the Gadigal people who are the traditional custodians of this land. I also pay respect to the elders past and present of the Eora nation and extend that respect to other Aboriginals present. Today is the first of two hearings to be held in this inquiry. We will be hearing today from the New South Wales Department of Trade and Investment, Lock the Gate Alliance, Santos, University of Melbourne Energy Institute and AGL Energy Limited.

Before we commence, I make some brief comments about procedural matters. In accordance with the Legislative Council's *Guidelines for the Broadcast of Proceedings*, only Committee members and witnesses may be filmed or recorded. People in the public gallery should not be the primary focus of any filming or photographs. In reporting the proceedings of this Committee, you must take responsibility for what you publish or the interpretation you place on anything that is said before the Committee. It is important to remember that parliamentary privilege does not apply to what a witness may say outside of his or her evidence at this hearing.

I urge witnesses to be careful about any comments they may make to the media or to others after completing their evidence as such comments will not be protected by parliamentary privilege if another person decides to take an action for defamation. The *Guidelines for the Broadcast of Proceedings* are available from the secretariat. Questions may be asked that a witness could only answer if they had more time or with certain documents to hand, in those circumstances witnesses are advised that they can take such questions on notice. Given the short time frame of this inquiry witnesses are asked to provide answers within seven days to assist the Committee in meeting its reporting deadline. Any messages from attendees in the public gallery should be delivered through the Chamber and support staff.

I welcome our first witnesses to this inquiry: Minister Roberts, Mr Lewis and Ms Hargreaves. Minister, I remind you that you do not need to be sworn as you have already sworn an oath of office to the Parliament of New South Wales.

THE HON. ANTHONY JOHN ROBERTS, Minister for Resources and Energy, and Special Minister of State, before the Committee:

KYLIE HARGREAVES, Deputy Secretary, New South Wales Department of Trade and Investment, Division of Resources and Energy, and

ANDREW LEWIS, Acting Director, Operations and Programs, New South Wales Department of Trade and Investment, affirmed and examined:

CHAIR: Minister, would you like to make an opening statement?

Mr ANTHONY ROBERTS: I thank the Committee for allowing me to appear before this inquiry today. Gas energy and security is one of the biggest issues facing the people of New South Wales today. In 2014 New South Wales consumed some 150.4 petajoules of gas, the average household consumes 18.3 gigajoules per year, approximately 39 per cent of households are connected to mains gas and 12½ per cent are connected to bottle gas. This is a vital energy resource, particularly for eating and cooking for many individuals and families across this great State.

In addition, gas is vital to much of the economic life of this State: 52.2 per cent of our gas is used for industrial purposes, 14.3 per cent is used for households, 6.2 per cent is put to commercial use, 26.4 per cent is used in electricity generation and some is even used in transport. In all there are more than 1.1 million gas users in this State; therefore the importance of securing this gas supply cannot be underestimated. Many long-term, low-cost contracts for imported gas supplies will be coming to an end over the next three years and it is becoming increasingly difficult for long-term supply arrangements to be reached given the state of the change in the east coast gas market, with Queensland export hubs now coming online.

It is the job of any responsible government to ensure the safe supply of gas to our households and businesses, even if it means that tough choices and political courage are required. I am proud to be part of a government that is moving on this issue and making those decisions. We are moving to make sure that we not only secure the supplies we need but that we also do so on our terms, with the highest levels of protection for our precious natural resources. This is not always an easy balance but it is certainly one that we believe is achievable.

Today I hope to be able to demonstrate to the Committee the genuine problems we are facing with regards to securing our gas supplies. I would also like to give an insight into the solutions that are possible and the choices that can be made. This issue needs to be approached calmly, rationally and with balance. I make it very clear that energy security is not something that should be subject to political pointscoring and deliberate stoking of emotive debate—quite frankly, it is much too important for that. I very much look forward to questions and I again sincerely thank the Committee for the opportunity to appear today.

The Hon. MICK VEITCH: My first question relates to gas market regulation in Australia. Do you consider any improvement needs to be made in the relationship between the Commonwealth and New South Wales governments in this regard?

Mr ANTHONY ROBERTS: The gas market place has always been a concern for me—I will ask Mr Lewis to elaborate a bit further on that in a moment. The Committee would understand how the electricity market works: it is open and transparent. Almost immediately one can tell what is being generated where, where it is being used, how much is being used and what sort of price it is attracting. Unfortunately, with respect to gas the market place is incredibly opaque. One of the frustrations I think that not only this Government but previous governments have had is that there has not been that sort of level of oversight and transparency that we have in the electricity market. That is something that we have been calling for—certainly since I have been Minister—at a national level. We need to understand how much gas is in the system, particularly now with the liquefied natural gas [LNG] plants coming online, the trains coming online.

One of the frustrations I have had, I suppose, is when I have called in the marketplace about what is in those contracts some of the companies could be a little bit more open—the quantum of the contracts, as to the clauses in those contracts with respect to failure to supply that quantum. Those companies have not been overly forthcoming, claiming commercial in confidence. It has always been my belief that that is not good enough. We around this table as elected representatives should access to that information to enable us to create good policy.

It is certainly an issue that I have raised at Council of Australian Governments [COAG] Energy and on behalf of this Government I have been very vocal in calling for greater transparency. I am pleased to say that the Federal Government is responding. Certainly there are now moves afoot to look at how we can open that marketplace up and introduce that greater level of transparency. I will now ask Mr Lewis to tell the Committee about some of the things we are looking at—for example, the trading hubs that have been very successful.

The Hon. MICK VEITCH: I will be interested in hearing what Mr Lewis has to say in a moment. Are you saying that on any given day or at any given moment we do not know how much gas is in the system?

Mr ANTHONY ROBERTS: Arguably as a government we do not have that level of oversight that we would have with respect to the electricity market. I do not know whether you have had the opportunity to visit the Australian Energy Market Operator [AEMO] where they can show you—if you have not, I am quite happy to arrange for anyone at this table to see what an open transparent marketplace should be. I cannot see any reason as to why we cannot have that within the gas market itself. There are certainly pushes from the pipeline industry supporting our position. I think the move towards an additional trading hub would enable us to not only provide a greater level of comfort to people seeking contracts but I think it would give those second tier gas businesses in other States a great opportunity to compete with some of the larger producers of gas. Mr Lewis, would you like to add anything?

Mr LEWIS: As the Minister has mentioned, through COAG Energy there has been a lot of focus on reforms to the gas market in recent years. There have been a number of city-based hubs developed in Sydney, Brisbane and elsewhere to try and put greater transparency into the pricing and availability of gas. In answer to your question about the gas market, there is the gas market bulletin board, which has information posted by the Australian Energy Market Operator which runs the system. Is it perfect? No system is ever perfect; there is always room for improvement and to get more detail and information, as the Minister has said. Certainly New South Wales has been working with our colleagues through the Energy Council process, in meetings with the market operator, with the Australian Energy Market Commission, which sets the rules around how the gas market operates, to try and increase transparency and openness and get greater visibility of what is happening within the east coast gas market.

The Hon. MICK VEITCH: I now turn to the issue of watertable mapping. What work has been done in New South Wales around watertable mapping?

Mr ANTHONY ROBERTS: With respect to baseline monitoring?

The Hon. MICK VEITCH: Yes.

Mr ANTHONY ROBERTS: The two projects being undertaken at the moment at Gloucester and the Pilliga must have that baseline monitoring, which is something if you do not measure then you cannot manage. I am proud to say that New South Wales has delivered upon, and will continue to deliver upon, mapping our aquifers so we are able to see the effect that mining, agriculture or anything has on an important resource. I think it is important for the community to understand its resources. Again, all of these resources belong to everyone in New South Wales, be it gas, coal and various other minerals. Water is probably our most critical resource and the fact that it has not been measured in the past is not unusual in this country—in fact, New South Wales to a great extent has had to go it alone. I will ask Miss Hargreaves to expand on what we are doing in that area.

Ms HARGREAVES: One of the issues we found when we first started to look at some of the projects in the regions was that we actually needed to map the water basins. So, along with Land and Water Commissioner Jock Laurie, we started a process of mapping three of our largest basins to look at both the quantity and the impacts of industrial activity in those basins. Those studies have been done and completed by independent hydrologists and the findings are all publicly available on the Office of Water site. There are plans to do several more water basin studies and, in line with an announcement this Government has made around the environmental database, the findings of those results will be made available on an environmental database so that we can actually start tracking baseline results on our watertables regardless of the industrial activity that is occurring.

So, as you can appreciate, in terms of quantity some industries such as agriculture and irrigation will have a very large impact on quantity. We obviously want to check quality as well as quantity, and those sorts of impacts will be environmental available on the environmental database. As I said, the first of the three basins

have been completed and are available and are regularly being used in talking to councils and communities about the impacts of activities on their water basins.

The Hon. MICK VEITCH: What is the timetable for the other basins?

Ms HARGREAVES: I will take that on notice.

The Hon. MICK VEITCH: Thank you.

The Hon. ADAM SEARLE: Minister, one of the things concerning the establishment of this Committee was the debate about whether or not there will be a gas shortage in the medium future. Industry representatives in their submissions have certainly contended that there is a looming shortage of gas and other submissions have suggested that there will be a massive increase in supply but that it is being sold overseas. Are they the two sides of the one phenomenon: there is actually more gas going to be available in this country but it is being shipped off shore?

Mr ANTHONY ROBERTS: That is a very good question. Again, that is one of the sources of great frustration to people who are supposed to be making good policy and regulation for the people in New South Wales and across the Commonwealth. It reflects the opaqueness of the gas marketplace, which I again say needs to be addressed. Can I say that I have had the same experience? There are some gas companies that have told me that there will be more gas than we will know what to do with, there will not be a shortage. I have also had other companies come to me and say, "Minister, there is going to be a shortage." When considering the gas supply outlook there is a broad range of information available but this Government relies on forecasts from the Australian Energy Market Operator as the independent operator of the gas market across eastern Australia, which we believe is working in the long-term interests of consumers.

AEMO has a legislated obligation to prepare the gas statement of opportunities, which sets out the 20-year supply-demand outlook and to inform decision-making about investment in pipeline capacity in other sectors of the gas industry. AEMO is obligated to provide a range of information. That information includes pointing out any long-term shortfalls in gas reserves in production as well as pipeline constraints. AEMO identified in November 2013 that even if we have gas supply from Gloucester and from Moomba and we add that to the Sydney pipeline, New South Wales will likely face small to moderate gas shortfalls for up to 30 days in 2018. However, notwithstanding that, it revisited its forecast in 2014 and noted that shortfalls are still likely by 2020 in the absence of any new local production.

AEMO revisits its forecasts regularly and is expected to provide the next complete picture of the supply-demand outlook in March this year. I note that the New South Wales Parliamentary Research Service also relies on AEMO. I know that other commentators are predicting that, as I mentioned before, gas shortfalls may occur as early as 2016. A study commissioned by the Commonwealth's resources experts recommends removing barriers to supply to address any potential future shortfalls. There may be some disagreement amongst different models on exactly when New South Wales may face cash shortages. However, there is no disagreement on the basic notion that we face potential gas supply shortages in New South Wales over the next five years.

The Hon. ADAM SEARLE: And that is the important point, is it not? It is a supply shortage; it is not a shortage of gas being produced in Australia.

Mr ANTHONY ROBERTS: It is supply shortages. Large industrial customers, including manufacturing and chemical industries, which employ over 300,000 people in New South Wales, would of course be the first affected by those shortages. That is why, for us as a government, the New South Wales Gas Plan is that critical first step to securing our gas supplies as well as protecting our natural resources and ensuring a stronger outlook for New South Wales gas users. My position is very clear: An increase in domestic supply in New South Wales will do a lot to reduce those demand pressures. One of the frustrations we have is that we produce 5 per cent of the gas we need in New South Wales. We import 95 per cent of it from other States.

The Hon. ADAM SEARLE: But Minister we are not just one State. We operate in a national marketplace.

Mr ANTHONY ROBERTS: That is correct. Well—

The Hon. ADAM SEARLE: The appropriate frame of reference should be the resources available in the country, not just in one State, do you not think?

Mr ANTHONY ROBERTS: It would certainly be, in a perfect world. Certainly the free flow of energy across borders would certainly assist but—

The Hon. ADAM SEARLE: That is what the energy markets are supposed to achieve.

Mr ANTHONY ROBERTS: Arguably in a perfect world, yes. But can I say that the South Australian Minister, for whom I have a lot of respect and time and who totally opposes the reservation policy, has made it quite clear that he is not going to ask gas energy suppliers in South Australia to continue to subsidise New South Wales customers and supply them, if they can find a better price overseas. That is where we as a State find it very difficult when it comes to any mention of the reservation policy. You cannot reserve 5 per cent of your gas production because that is all we produce. We are in fact reserving everything we produce and that is just outside of Camden.

The Hon. ADAM SEARLE: Just in terms of the forecast, I think you mentioned the Australian Energy Market Operator's national gas forecasting report. When you look at that report there has actually been a decline in gas consumption in New South Wales from 147 petajoules down to less than 145 per annum and there are forecast decreases of nearly 2 per cent per year going forward. Although I think residential is going up slightly, the decline in industrial use is predicted. Do you not think that overall over the next period of time, with significant decreases in demand, that is an important matter that needs to be taken into account? There will be less demand for gas.

Mr ANTHONY ROBERTS: Again, it is important to look at that demand and supply, how you meet that demand, and where that supply comes from. But we are seeing, certainly with electricity, that demand plateau and probably it will continue to fall. Of course the pricing of gas, whether it is competitive or not, will also affect demand. But, Mr Lewis, have you anything to add to that?

Mr LEWIS: Sure. Traditionally the gas supplies for New South Wales have come from South Australia and Victoria. What we are increasingly seeing with the development of liquefied natural gas [LNG] export is that the Moomba gas—the gas out of South Australia—is being directed towards Queensland and away from not just New South Wales but also South Australia and Victoria. Whilst it is true that there is a declining demand for gas—particularly among the industrial sector and partly as a result of rising gas prices—given that Moomba supplies just under 50 per cent of New South Wales gas, if that 50 per cent is taken away we still have to find new gas supplies in order to meet the demand, whatever level it is at.

That is one of the important reasons, as the Minister outlined, why New South Wales is keen to be developing its own resources—to help to ensure security of supply. As we have seen just before Christmas in Queensland, where there was a significant oversupply of gas and prices fell to below a dollar a gigajoule in Queensland, it is simple market economics: If you have more gas available than there is demand for it, prices will come down. Whilst there may be some move away from gas consumption while prices are increasing, if we can develop new sources, bring new supply on and put downward pressure on price, hopefully we will see some of that industrial activity returning to New South Wales and ensuring the jobs that go with it.

The Hon. ADAM SEARLE: In terms of security or diversity of supply that you mention in your submission, other than your plan of developing more gas in New South Wales, what plans does your Government have for biogas or gas from waste? I know there is a Sydney Water report that talks about sourcing up to five petajoules a year from that type of source. What efforts is your Government is putting into diversifying the source of available gas, other than coal seam gas?

Mr ANTHONY ROBERTS: Can I said is important to look at this in its entirety, and it is a very good point that if you want energy security, you need to diversify the energy marketplace where you have gas; traditional coal-fired power stations for electricity; you have solar; you have wind power; and you have geothermal. The broader you can get that input of course, your risk is lowered. We have invested significant amounts of money in assisting in the development of new types of energy in the marketplace. Mr Lewis, can you outline for us where we are moving in that area because it is critical? We cannot be reliant on one single source or two single sources for our major power needs.

Mr LEWIS: Yes. Certainly in relation to alternative sources of gas, there is bioenergy, which is a key focus of the Government. There are a number of programs. The issue is primarily about the size of the resource that is needed there. Obviously there is a lot of extraction from municipal waste facilities—from tips—to get biogas from that. Sydney Water, as you correctly point out, uses some of its sewage-treatment facilities to gather gas. But when you compare the gas that is available from those sources to the overall demand, it is not sufficient of itself. That is why the main sources of supply are going to be things like continuing focus on supplies from Victoria and developing our own domestic reserves that are available through coal seam gas.

Mr ANTHONY ROBERTS: If I might add, Mr Chairman: Further to that, the memorandum of understanding [MOU] we have undertaken with the Northern Territorian Government looks outside New South Wales as well to where we can assist in the development of new markets for gas and assist producers. For example, the Northern Territory has large quantities of gas and not a lot of consumers or manufacturing. We have a large number of consumers and a large number of manufacturers. I think it is just intelligent to link those two up. Of course by doing that, as I said before, and by having clear and transparent marketplaces through well-functioning hubs, you are able to assist those second tier smaller gas producers in bringing their gas to market.

Ms JAN BARHAM: Minister, I would like to ask about the fact that has come to light about AGL failing to disclose the presence of BTEX [benzene, toluene, ethylbenzene, and xylenes] chemicals in their water tests for two weeks.

Mr ANTHONY ROBERTS: I was not expecting this question this morning.

The Hon. Dr PETER PHELPS: Point of order: How does this relate to the supply and cost of gas and liquid fuels in New South Wales?

The Hon. ADAM SEARLE: One could argue it could be a constraint if the supplier is having some difficulties in complying with the law in its processes, if that is the case.

Ms JAN BARHAM: Yes.

The Hon. Dr PETER PHELPS: I suggest that this is a question which may have been more appropriately asked in the previous inquiry into coal seam gas in New South Wales rather than one which is supposed to be looking into the economics of the supply and cost of gas.

CHAIR: I will allow the question.

Ms JAN BARHAM: It clearly relates to 1 (a) of the terms of reference. I raise the point that the Environment Protection Authority [EPA] has said it is very concerned at AGL's lack of timeliness and transparency in informing of the results and that there will be a full investigation. If you could elaborate on that, it would be appreciated.

Mr ANTHONY ROBERTS: I am very happy to elaborate on that. Can I inform you that yesterday we were notified of the BTEX incident where BTEX, as you would know, occurs naturally in coal seam gas areas. You would also be aware that BTEX chemicals are banned in the use of fracking in New South Wales.

Ms JAN BARHAM: Yes.

Mr ANTHONY ROBERTS: Once I was notified of AGL's announcement, I ordered investigators from the Division of Resources and Energy to begin an immediate investigation. They will be joined this morning by investigators from the EPA on the site because I want to know exactly what has happened—whether or not this is naturally occurring or whether it is an additive. But can I say that as soon as I receive the report it will be made public and whatever is in that report of course will provide the basis of my response. Ms Hargreaves, as my deputy Secretary, is responsible for the organisation of that investigation. Do you want to add anything to that?

Ms HARGREAVES: Thank you, Minister. I think it is important that we get all the facts before we jump to conclusions.

Mr SCOT MacDONALD: Good luck with that.

Ms HARGREAVES: At this stage we do not believe that they have breached the environment protection licence [EPL], which was issued by the EPA. We do not believe at this stage that they are in breach of any of the conditions of their title.. However, we have issued, essentially, a stop-work notice to them asking them to cease activities associated with the program until we can establish exactly what has happened. There will be a range of options that need to be investigated from contamination of the sample. For example, BTEX occurs in diesel. If someone potentially with diesel on their hands was handling the sample rather than following normal procedures, it is possible for BTEX trace to get into the sample. That is probably the most simple contamination example. Obviously, at the other end we need to be absolutely certain that BTEX was not introduced into the processes in any way, shape or form. That investigation will be done thoroughly, completely and with the joint efforts of every agency that has an interest in it.

Ms JAN BARHAM: Considering that you have issued a stop-work order, is there a time frame for the completion of that investigation?

Ms HARGREAVES: Because we are sending our inspectors up—they will be on-site probably now as we speak—we need to ascertain exactly how they are going to go through this investigation and what level of sampling they need to do. It is probably a bit premature to put an end date on it, but it is absolutely a priority for us. We need to understand what has happened very quickly. Part of the issue with obviously having that sort of data available is that we can act very swiftly, once we are alerted to abnormalities.

Ms JAN BARHAM: And if it is the case that BTEX is mobilised at Gloucester, should the project go-ahead? Do you have a position on that?

Ms HARGREAVES: BTEX is mobilised anyway. BTEX is naturally occurring in coal seams, sand reservoirs, tight sands and petroleum. As a result it moves through water that moves through sand formations and rock formations of that nature. If I could suggest, the issue is more if it is confirmed that the BTEX is from natural sources then the question is: Is there any risk to land, water or community associated with the processes? That is the second question that will need to be answered.

Ms JAN BARHAM: You will be determining whether or not the naturally occurring or the activated BTEX has an effect on any health risks. But I note that in 2012 the Department of Planning assessment report for the Apex drilling project identified the health risks with BTEX. Does it make a difference whether it is naturally occurring, activated or an additive?

Ms HARGREAVES: It is a good question. My response is what we need to do is manage not just coal seam gas but all industries around the natural levels that are occurring in the environment. What we want to see is that industrial activity in an area does not raise the natural levels. That is actually the measure. That is what we are going to be investigating to make sure that there has been nothing that has occurred by this particular industrial activity that is going to raise the naturally occurring BTEX levels above what is already found in the local environment and that it is not going to pose any risk to land, water and communities.

Ms JAN BARHAM: I will go to the submission that refers to the introduction of the strategic release framework. You refer to any future gas exploration done on our terms, not terms that meet community expectations. I come from the North Coast and the community expectation is very, very clear: they do not want gas extraction happening up there. Is that enough for you in respect of the community expectation: the community says no, therefore, the Government will respect and observe that expectation of the community?

Mr ANTHONY ROBERTS: It is a very good question. Having travelled around New South Wales and having spoken to many community groups, some of which are in favour of coal seam gas, some of which are vocally opposed to coal seam gas or, in fact, opposed to any kind of energy production, notwithstanding that, what we have heard and what we have developed a very strong insight into is that the release framework or the non-existent framework that we inherited, where for $1,000, people could purchase without any financial backing, without any community consultation, large tracts of New South Wales on which to explore or not to explore or to speculate, caused a huge amount of disruption right across New South Wales. Just as we are doing with the coal strategic release framework we will now, as a Government, decide where we explore and where we produce. What will affect and very much direct and influence the release of lands into the future will be that triple bottom line of the social impacts and the environmental impacts as well as the economic impacts.

Without a doubt we could have done better in the past. I think the new strategic release framework will allow us to engage communities and also bring a level of certainty to not just business and investors but also communities when it comes to self-determination—where they want to be or see themselves—particularly for companies, of course, where they have that certainty as they move forward. Again, I make it very clear that we have listened and the Gas Plan through the buyback and through the "use it or lose it" is that we are slowly drawing back into Government control—the control of the people of New South Wales—how and when and if we develop our resources.

Ms JAN BARHAM: To follow that up, when are you going to release it? It is an unknown quantity before the election, is it not, whether or not these areas are going to become gas fields?

Mr ANTHONY ROBERTS: I have released the gas plan.

The Hon. NIALL BLAIR: Have you not read it?

Ms JAN BARHAM: The strategic framework.

Ms HARGREAVES: Very similar to what we are doing on the coal side, it is quite a change. This will be one of the biggest changes to the way we do petroleum release areas in New South Wales. It requires legislative change and we are going to need to work that process through, and so what we are doing is exactly the same with the coal where we are getting the agencies together so that we can say, "Our intent here is to be able to identify where, when and how", and once that is clarified, we will be bringing that back to Government for legislative purposes.

Ms JAN BARHAM: Thank you.

CHAIR: I have a question in relation to the general pricing of gas. It seems that the price of gas at this time is falling and is projected to fall in the future. What is your view on that?

Mr ANTHONY ROBERTS: I will ask Mr Lewis to comment further on this. When you have a marketplace that is quite opaque, it is hard to get, at times, a very good picture around it, but certainly if we focus on the supply side we continue to see that downward pressure. The effect coming on board now of the LNG trains, of course, will affect our domestic market. Up until recently we have had a marketplace where it was very much being quarantined from the international marketplace. Now it is part of that international marketplace and, as such, prone to those pressures.

Modelling results are always subject to debate. Further modelling that has been undertaken by Asel Tasman shows that with no coal seam gas development—that scenario—gas is highest price at $8.80 a gigajoule by 2023 and of course moratoriums on coal seam gas development fall into this category of no development. When you have a look at should Narrabri and Gloucester come online, you will see decreases—rightly so—of around 3 per cent. Should they not come online, you will see corresponding increases of some 3 per cent.

CHAIR: Obviously the modelling you are talking about assumes that the LNG projects will continue to fruition up in North Queensland and the basic scenario, for example, of our gas contract from Moomba ending and the gas being turned north will still continue?

Mr ANTHONY ROBERTS: That is one of the key positions that we have been able to achieve with Santos and with AGL. Both of them have made it clear that that gas is destined for New South Wales markets first and foremost. From a business model point of view there are a huge amount of gas customers in New South Wales. The gas is relatively close to them.

CHAIR: One would assume provided we pay the same price that the LNG operators would pay. Is that what you are saying?

Mr ANTHONY ROBERTS: You have to factor longer term contracts into shipping. It is actually rather complex. Did you want to add—

Ms HARGREAVES: Again, if you take it back to the basic principles, the Australian Energy Market Operator [AEMO] and others are expecting, as you say, the gas from Queensland and South Australia to be prioritised for export. That means we are potentially vulnerable in not being able to get our supplies. Most free

markets will move to add a price premium to being able to get hold of supplies. Obviously if we have a local supplier of our own, we can bring some competitive pressure to bear in the marketplace, which will hopefully alleviate some of those competitive price pressures.

CHAIR: Let us leave that thought for a second. The Government is discussing an MOU with the Northern Territory for a supply, or a pipe. In terms of supply for New South Wales, what volume of gas are you talking about bringing through that pipeline if it gets up? Is it 10 per cent, 20 per cent, 1 per cent?

Mr ANTHONY ROBERTS: It depends on the size of the pipe. I think we have settled on that.

Mr LEWIS: Some of the earlier projections are that that gas could potentially supply maybe 20, 25 per cent of the New South Wales demand. As the Minister said, it will depend on the final infrastructure, essentially the size of the pipe and how much gas you can get through it, and where the actual reserves in the Northern Territory are going to be based, so how big they are and, therefore, what is the economic life and how much they can easily release in each year to flow south towards South Australia and New South Wales and other parts of the gas market.

CHAIR: Would you be talking about keying that pipe into the southern pipe that comes through Moomba and joining there? You are not talking about duplicating the whole—

Mr LEWIS: No. One of the proposals that the Northern Territory Government is looking at is that that pipe would run south into South Australia and link up with Moomba so that it joins in with the existing gas pipeline infrastructure.

CHAIR: Do you have a feel for the dollars involved with that?

Mr LEWIS: Generally a transmission pipeline is in the order of $800 to $1 million a kilometre in length, so it will depend on the distance. There have been some initial projections of $1 billion to $1.2 billion, but that is still at the very early—not even at the design stages.

CHAIR: Sorry, you said $8 million?

Mr LEWIS: Eight—

CHAIR: $800 million a kilometre, you said?

Mr LEWIS: Sorry $800,000 to $1 million—I apologise for that—per kilometre of pipeline.

CHAIR: If that did go ahead, how would it be financed?

Mr LEWIS: That would be up to whoever was building that pipeline. Generally what happens with pipeline projects is that there are a number of foundation customers. They go out into the market. Whoever has got the gas looks to sign an agreement for a period of time that will underpin the finances and then the banks or the financiers will lend additional money based on the certainty of those contracts.

CHAIR: Thank you. Minister, you talk in your submission about COAG Energy Council developing a vision for a gas market. Obviously part of that process must be dealing with what you call the opaqueness of the market. Do you know what time frames they are looking at?

Mr ANTHONY ROBERTS: There is currently a move to have a report back to the next COAG Energy Council as to what we can do by regulation and we are also working closely with private enterprise to achieve a greater level of transparency. From a departmental point of view, there is other work being undertaken in New South Wales at the moment.

Ms HARGREAVES: There are two—Andrew, correct me if I am wrong. The Australian Energy Regulator [AER] is doing a review of mechanisms to increase the transparency of the eastern gas market. AEMO is looking at some low-hanging fruit that they can suggest to the marketplace as an operator that are up for considerations. Within our own bailiwick, I guess, we are also looking at, as the Minister said, how we can encourage good behaviour on our suppliers to voluntarily confirm that the supply is for New South Wales. There are measures in the Gas Plan that indicate that we are trying to bring on new juniors. As the Minister was

talking about before, those people who can provide one or two or five petajoules that can go into the system and in the gas plan I believe it was announced that for operators who are happy to dedicate the gas supplies to New South Wales that we also dedicate them as a strategic energy project for the people of New South Wales.

CHAIR: COAG is also looking at the establishment of a wholesale gas market, much like the electricity market. Hopefully it will operate better than that does. Again, is there any time frame on that?

Mr LEWIS: There are already a number of trading hubs that are in existence and the Energy Council is looking at some strategic sites, such as Wallumbilla in Queensland, to try to improve the market transparency, so it will be an ongoing process. Due to the different nature between electricity and gas such as the physical way they flow, the markets will be different; they will need to be designed in a different way. But the outcomes that are being sought are very similar. It is about transparency, openness, awareness and having an understanding of where the gas is going, how much it is costing and those kinds of issues.

CHAIR: You are talking effectively of a gas trading market in Australia where the gas will go into that system and be traded amongst the entities, I suppose. Okay, thanks.

The Hon. Dr PETER PHELPS: I want to continue on with the line of questioning from Mr Searle and that is in relation to so-called supply shortages. Minister, is there a supply shortage of petroleum at 50¢ a litre in New South Wales?

Mr ANTHONY ROBERTS: No.

The Hon. Dr PETER PHELPS: At 50¢ a litre?

Mr ANTHONY ROBERTS: A supply shortage?

The Hon. Dr PETER PHELPS: Of petroleum.

Mr ANTHONY ROBERTS: We can only use so much.

The Hon. Dr PETER PHELPS: Can you go out and buy petrol in New South Wales for 50¢ a litre?

Mr ANTHONY ROBERTS: I think I have seen it for about 80¢.

The Hon. Dr PETER PHELPS: So there is a supply shortage at that particular price point?

Mr ANTHONY ROBERTS: I see where you are coming from. No.

The Hon. Dr PETER PHELPS: Is it unrealistic to say that what Mr Searle characterised as a supply shortage is in fact a supply shortage at a particular price level?

Mr ANTHONY ROBERTS: Price will always have an influence on demand.

The Hon. Dr PETER PHELPS: That is exactly right. What you have is not a supply shortage but a supply shortage at a price that people are used to paying. In other words, the market will have to adjust to a higher price if there is a supply shortage.

Mr ANTHONY ROBERTS: With all due respect to my learned colleague, we have a responsibility also to look at the affordability side.

The Hon. Dr PETER PHELPS: I agree. However, you would agree that in a relatively inelastic demand market, such as for natural gas, any reduction in supply would necessarily increase the equilibrium price.

Mr ANTHONY ROBERTS: Yes.

The Hon. Dr PETER PHELPS: But conversely any increase in supply would also reduce the price, would it not?

Mr ANTHONY ROBERTS: Correct.

The Hon. Dr PETER PHELPS: So there is no supply shortage. However, if the price is kept artificially low there will be supply shortage.

Mr ANTHONY ROBERTS: Yes, because there will be no investment.

The Hon. Dr PETER PHELPS: That is exactly right. Alternatively, if there is over-regulation there will be no investment.

Mr ANTHONY ROBERTS: That is arguably so.

The Hon. Dr PETER PHELPS: So we have a situation where potentially, because of the failure to invest in large-scale production of natural gas in New South Wales, we will be unable to meet our domestic requirements without having to tap into a market that will in all likelihood have higher prices. Is that correct?

Mr ANTHONY ROBERTS: Yes.

The Hon. Dr PETER PHELPS: The argument is probably not that we need greater regulation or less development in New South Wales but that we need greater development of domestic supply provided that that supply is part of an integrated supply chain for use in New South Wales.

Mr ANTHONY ROBERTS: Yes.

The Hon. Dr PETER PHELPS: In other words, the AGL model, which does not require a government reservation policy. In effect, AGL has made its own commercial decision to reserve supplies for the New South Wales market.

Mr ANTHONY ROBERTS: In conjunction with agreements we have made with it.

The Hon. Dr PETER PHELPS: That is correct. The problem is not the result of a failure on the part of the market. What has happened in New South Wales is a failure to allow the market, which is there for the production and supply of natural gas, to supply natural gas, which is what it wants to do.

Mr ANTHONY ROBERTS: I think it will be able to do that under the NSW Gas Plan with all the checks and balances in respect of the environment.

The Hon. Dr PETER PHELPS: I agree; I think it will, too. I take issue again with what Mr Searle said about how supply has some effect upon demand and demand has some effect upon supply. That is a basic fallacy disproved by Marshallian microeconomic theory.

Mr ANTHONY ROBERTS: I was reading that only this morning.

The Hon. Dr PETER PHELPS: Supply and demand changes have an effect on the equilibrium price.

Mr ANTHONY ROBERTS: Your argument effectively is that—

The Hon. ADAM SEARLE: Can you sort this out in a party meeting?

The Hon. Dr PETER PHELPS: I think the Minister and I are in heated agreement.

Mr ANTHONY ROBERTS: We are in heated agreement. Can we develop our own gas resources in New South Wales? Yes, we can. Can we do that in areas where it has social acceptance and the environment is protected? Yes, we can. Has that been done in the past? Arguably, no. Will developing our gas reserves in New South Wales give us greater energy security? Absolutely.

The Hon. Dr PETER PHELPS: More importantly, it will help to keep the equilibrium down. If we do not have to buy into an internationalised market with higher rates we can effectively, as AGL plans to do, subsidise New South Wales consumers against the higher prices in that market by reserving supplies. Let us be absolutely clear that AGL is doing that for its own commercial purposes; it is not doing it out the goodness of its

heart. It will be able to supply gas to the people of New South Wales at a significantly lower cost than the international market.

Mr ANTHONY ROBERTS: That is correct. I raise the importance of having an efficient marketplace. An efficient marketplace is one in which a large amount of information is provided and which allows people to compete. That is where having an open and transparent gas marketplace enables those second-level operators that I mentioned to compete against large operators and go directly to customers.

The Hon. Dr PETER PHELPS: That is fair enough. I think you and I may disagree to some extent on the efficiency of government regulation in promoting free and fair markets.

Mr ANTHONY ROBERTS: You have described me as a Tory paternalist in the past.

The Hon. Dr PETER PHELPS: With deep respect.

Mr SCOT MacDONALD: What would be the impact of a gas shortage and what could the Government do in the event of a shortfall?

Mr ANTHONY ROBERTS: This is a great opportunity to highlight to the Committee some of the consequences of a gas shortage in New South Wales. More than one million households in this State rely on gas for everyday heating and cooking. As I said, gas-dependent businesses employ more than 300,000 people in New South Wales. Importantly, there are 33,000 small- and medium-sized businesses that need gas. All these groups will face difficulties if shortages occur in the marketplace. It will be not only those who will be told there is no longer any gas to use but also those who will have to pay a higher price to use the gas that remains.

As members are aware and as I said earlier, New South Wales provides less than 5 per cent of its own gas needs from AGL's Camden project. That project has been operating safely now for 11 years providing all the gas production in New South Wales, and it should be commended for that. The Government is prepared to deal with a gas shortage in this State. As Minister for Energy I have powers under the Energy and Utilities Administration Act 1987 to give direction to producers, transmitters, distributors, sellers and end-users to ration or to curtail supplies. Regardless of who is the Minister for Energy in coming years and what party they represent, they will not come in to work on winter mornings and as their first task sign an order for the closure of large gas-dependent manufacturing facilities around the State, and therefore sending hundreds if not thousands of workers home without pay.

That is why the Government has made the hard decisions and is preparing the State, and that is why it has released and delivered the NSW Gas Plan. That is also why the Government has accepted all of the recommendations of independent Chief Scientist and Engineer. I get increasingly frustrated by politicians saying that we should wait for the science. The chief scientist has laid down a pathway for the safe extraction of onshore gas and this Government is moving along that pathway. While there is always more that we can do to find better ways to achieve that, we can safely say that the scientific research has been done. We are now seeking to improve security, affordability and diversity of gas supplies for households and businesses.

The Government is establishing a strategic framework to best manage petroleum titles to ensure that only the best companies that can reach the highest standards are issued with them. In short, this Government is cleaning up a mess that it inherited. We will ensure that gas extraction in this State is done on our terms and on terms acceptable to the New South Wales community. At the same time, as I said, we are looking at other options to increase gas supply in this State, including expanding existing pipelines and possibly linking the Northern Territory to the East Coast gas market.

I ask that in its report the Committee take note of the serious position New South Wales is facing in respect of gas supply and that it acknowledge the strong actions the Government has taken to address this issue. As legislators we all take this situation very seriously. I appreciate the fact that I have had the opportunity to address the Committee this morning and the fact that it has seen fit to look at a problem that should have been addressed some time ago.

Mr SCOT MacDONALD: Can you tell the Committee about your approach to calls for gas reservation and the probability of there being such a policy?

Mr ANTHONY ROBERTS: There has been a great deal of talk about gas reservation. The Council of Australian Governments Energy Ministers' meeting held in Adelaide on 11 December last year discussed extensively the issue of a national reservation policy for the East Coast gas market. Of course, a national reservation policy would require other States, such as South Australia and Queensland, effectively to sign up to a deal whereby they would subsidise supplies for New South Wales without receiving anything in return. In short, they would be required voluntarily to accept lower prices for gas that they have produced. That would mean less return for gas-producing businesses that have chosen to invest in those States and lower royalties for those States. As noted in the Government's submission to this inquiry, such a policy would extinguish the contractual obligations that have been made to supply gas to LNG export hubs. The council emphatically rejected national reservation as a policy solution to gas shortages in the East Coast market.

The Hon. Dr PETER PHELPS: Hear, hear!

Mr ANTHONY ROBERTS: That was stated explicitly in the communique that resulted from the meeting. The message that New South Wales should take from that is simple: other States are not going to bail us out of our gas supply problems and we must address the issue ourselves. As I have stated previously, hope should not be a strategy for any government. For some simply to hope that other States will sign up to a reservation policy demonstrates that they have their heads and that they are extremely irresponsible.

The first of Queensland's export facilities has come on line and as a result the East Coast market will change rapidly. I believe, and I have put it on the record several times, that we need as much transparency as possible around these export arrangements so that we can best understand the ongoing impact they will have on gas supplies. Nonetheless, we cannot refuse to accept the reality that these exports have started and that they will continue. It is outside the scope of the New South Wales Government's influence to control the amount of gas going overseas and we do not have the power to force other States into a reservation policy. There is no point in wasting our time dreaming or planning for such a scenario.

However, we can take steps to assist projects that will help our gas supply situation. As I said, should the Gloucester gas project be approved, AGL has committed to providing all the gas extracted to New South Wales customers. Should the Narrabri gas project be approved, the gas will also be prioritised for New South Wales customers. As the deputy secretary said, under the NSW Gas Plan only gas projects that make such commitments will be granted strategic energy status to assist in navigation through the approvals process. I am confident that there are always ways to address gas supply shortages. However, I can safely say here today that a reservation policy is not one of the options.

Mr SCOT MacDONALD: Can you explain how the Government is ensuring that any onshore gas exploration or production can be conducted safely?

Mr ANTHONY ROBERTS: That is a very good question. Like the Hon. Scot MacDonald, other Government members are proud of driving New South Wales to use world's best standards. This Government is committed to ensuring that any onshore gas production is conducted at the highest standards and does not pose a threat to human health and safety or cause undue harm to the environment. As members are aware and as was mentioned earlier, yesterday AGL report the detection of BTEX chemicals in flow-back water. As I said, this is a most concerning development. Again, investigators from both the Environment Protection Authority and my department have been dispatched and they will undertake an investigation and report back.

I make it clear that the use of BTEX chemicals in fracture stimulation is strictly banned in New South Wales. AGL has stated that it did not use BTEX in that fracture. Under conditions of its activity, AGL is also required to undertake extensive ground and surface water monitoring to ensure that its activities are not negatively impacting on the environment. As members are aware, AGL's activities have been suspended until government authorities get to the bottom of what has happened. These are the actions of a very strong government and a government which is in control with adequate oversight of the industry and which is ensuring the safety and protection of the environment.

I have made it clear many times on behalf of this Government that we will only allow operators in this State who are able to reach the highest standards that we set for them. We have also moved to make the Environment Protection Authority [EPA] the lead regulator for all coal seam gas activities to ensure that we have a tough and independent cop on the beat.

Certainly, under the previous Labor-Greens treaty of non-aggression Labor allowed this industry, with all due respect, to develop with completely inadequate oversight whilst The Greens silenced the environmentalists on their behalf. It is remarkable that there were not more accidents and environmental incidents under the previous Government's administration. I want to place on record that under the previous administration there would have been no code of integrity for wells to ensure that flowback water was not making its way in to groundwater.

The Hon. Dr PETER PHELPS: What? Macca would not have put in a code of integrity in relation to—

Mr ANTHONY ROBERTS: Quite possibly not.

The Hon. Dr PETER PHELPS: I am astounded.

Mr ANTHONY ROBERTS: Under Labor's watch this water would have been stored in evaporation ponds that would have leaked onto surface water systems. Under Labor's watch BETEX chemicals could have been legally injected into the ground. I have to put it on record that it is thanks to the reforms of this Government that the situation is being adequately monitored and an investigation is being undertaken in a safe and orderly as well as professional fashion.

Indeed, this Government has worked hard to bring a sense of order and sensibility to the industry. There have been more than 60 reforms under this Government to bring industry standards up, to make it plain that unless this industry can demonstrate that it can develop and operate in New South Wales safely then it quite simply will not get off the ground here. The Government is working through the New South Wales Gas Plan to implement all of the Chief Scientist's recommendations and make sure any onshore gas industry develops under our terms.

Again, I thank you for the opportunity to present to you. I acknowledge and pay tribute to the fact that we have a robust democracy and an upper House that is actually able to take on some of the hard decisions in helping to map our energy security for this State.

CHAIR: Are there any questions on notice?

The Hon. ADAM SEARLE: You mentioned the implementation of the Chief Scientist's report. Could you provide on notice a status update on the implementation of each of the recommendations and any time frames for the achievement of those recommendations?

Mr ANTHONY ROBERTS: Certainly.

The Hon. NIALL BLAIR: Minister, you mentioned the potential buyback of some of those leases—the use it or lose it policy. Could you provide the Committee with an update of any of those that have been purchased or surrendered back or any agreements that have been entered into?

Mr ANTHONY ROBERTS: Certainly.

CHAIR: We did not get a chance to ask you much about the liquid fuels, unfortunately. I have a question on notice, which is: Would the Government consider a mandatory strategic reserve policy for New South Wales or will this be left to industry to continue to do it just in time?

Mr ANTHONY ROBERTS: I hope it is not.

CHAIR: Will you take that on notice?

Mr ANTHONY ROBERTS: Certainly. I have to say that is one of the critical things as well that should come out of this, dare I say it. I am not intending to direct you. Our fuel security, petroleum security, is something that needs a large amount of work and leadership.

CHAIR: That is right. We have spent a lot of time this morning talking about gas and it is a very important issue but the fuel situation is developing into something quite interesting as well.

Mr ANTHONY ROBERTS: I think as someone said, if those boats stop it is a month to *Mad Max*.

CHAIR: Given the short time frame for this inquiry the Committee has resolved that answers to questions on notice be returned within seven days. We would appreciate your help in assisting us in those reporting deadlines. Thank you, Minister.

(The witnesses withdrew)

CARMEL FLINT, Campaign Coordinator, Lock the Gate Alliance, affirmed and examined:

CHAIR: Would you like to make an opening statement?

Ms FLINT: Yes. Lock the Gate Alliance was formed in 2010 by a group of landholders who were concerned about the impact of coal seam gas [CSG] mining on their land and water resources. The organisation is dedicated to ensuring that proper precaution is taken and extensive scientific research is completed prior to CSG drilling being approved to ensure that there are not unacceptable impacts to land and water resources. Lock the Gate believes that landholders and communities should have a say in decisions around energy choices that affect their lives and their livelihoods.

The news from the Gloucester project over the last two weeks highlights the problems that arise when scientific assessments, environmental compliance and baseline measures are inadequate. Yesterday it emerged that AGL detected elevated levels of BETEX chemicals in flowback water. However, they sat on the information for 12 days before informing the Environment Protection Authority. This follows anomalous results in tests for fracking chemicals in nearby groundwater and surface water and unexplained variations in aquifer levels following fracking at the site. Operations at the Waukivory pilot project where all this occurred were suspended yesterday.

Despite the Gloucester gas project having been approved in 2011 monitoring did not commence for water at the site until one month before fracking in October last year, so there is no history of multiyear cross-seasonal water quality results to analyse the new results against. Despite the project having been approved in 2011 a detailed water modelling study that was required by the Federal Government has still not be been released for the project. The community simply does not understand the rush to roll out an industry that has a very chequered history of incidents and spills and which simply has not done the scientific groundwork that is required. The same is true when it comes to the economic consequences of coal seam gas.

There is enormous pressure at present from CSG companies and the New South Wales Government to approve drilling quickly because of a purported looming gas shortage in New South Wales. However, the report released this morning by the Melbourne Energy Institute comprehensively debunks the argument that there will be a gas shortage and reveals that a substantial reduction in demand is the more plausible scenario in response to price increases. They posit a scenario of a 50 per cent decline in 10 years. Meanwhile, companies extracting gas resources in the Bass Strait claim that conventional gas resources can provide for the eastern seaboard of Australia indefinitely.

There is undoubtedly a gas price shock that has been caused by liquefied natural gas [LNG] exports linking eastern Australia to global markets for the first time. This price increase is already being felt in New South Wales after a decision by the Independent Pricing and Regulatory Tribunal [IPART] to allow a number of gas retailers to increase prices in response to the export market. The price increases are predicted to have a major impact on the manufacturing industry and on jobs in manufacturing, as well as impacting heavily on cost of living for New South Wales residents. Therefore, LNG exports have been approved at a great cost to the rest of our economy without any measures to mitigate that impact.

It is notable that the three LNG export terminals that were approved in Queensland were approved without any detailed cost-benefit analysis of the impacts on the eastern Australian economy. The impacts of the price shocks, which were highly predictable, were never modelled in detail. This was an extraordinary regulatory failure given that Credit Suisse has since mooted that for each $2 rise in gas prices there is an estimated 0.8 per cent drag on our GDP. It is crucial that genuine intellectual rigour is finally applied to this issue. Ill-considered decisions made without having adequate data on which to base them have led to this crisis of confidence in both the CSG industry and the way it is regulated and managed by the New South Wales Government and other Australian governments.

Rushing to approve more drilling on the basis of a gas shortage scare campaign being run by the CSG industry—the very industry which has caused the gas price shock and its brutal economic impacts—would be a very big mistake. Just as the CSG industry's claims of a looming gas shortage ring hollow, so do their claims that drilling for gas in New South Wales will reduce gas prices.

A report released late last year by the Institute for Energy Economics and Financial Analysis assessed the likely impact of the Narrabri gas project on New South Wales gas prices if it were to be approved. It

concluded that the Narrabri gas project was likely to have little or no influence in driving lower gas pricing in New South Wales and it recommended more research and investment into demand side solutions. In their submission to this inquiry IPART seem to have similarly concluded that drilling for gas in New South Wales will have little or no impact on price because the price is now set by international prices and drilling in New South Wales would have little impact on the international market.

It is also notable that the declining oil price has impacted heavily on capital investment decisions, with Santos recently announcing that it will not commence the Narrabri gas project until the back end of the decade. So even if there was a gas shortage in 2016 to 2018 as argued by some gas companies, the Narrabri gas project would do nothing to plug it. The gas price shock, however, is here to stay and CSG drilling is clearly not a solution to it. The wisest course from our perspective is to diversify and to identify all possible opportunities to reduce the dependence of New South Wales households and businesses on gas and hence reduce their vulnerability to the price shock.

A restructure to reduce gas dependence could be used to reduce business costs and boost the international competitiveness of New South Wales businesses. Implementing measures to ease increases in the cost of living for low-income households should also be a priority. CSG mining is the cause of the gas price shock in Australia, not the solution. If the New South Wales Government pursues a rushed CSG expansion that does nothing to address the price shock then it will be condemning the New South Wales economy to further negative and far-reaching economic impacts that it can and should prevent. What is needed is a detailed review of likely gas demand reductions in response to the price shock.

We have made a number of recommendations in our report for steps that we believe the New South Wales Government should take at this point. We encourage the Committee to adopt those recommendations in your report to the Parliament.

The Hon. MICK VEITCH: Are you able to table that prepared statement for the Committee and Hansard?

Ms FLINT: Absolutely.

The Hon. MICK VEITCH: Thank you. In your opening statement you spoke about the recommendations in your submission. I want to talk about recommendation 7 where you say:

> Legislate for full transparency on all gas supply contracts so that the NSW Government has full knowledge of all commercial transactions relating to gas supply.

Would you explore further with us what you really would like to happen there and how you would envisage that happening?

Ms FLINT: I guess one of the problems at the moment—and I think it is a problem that the New South Wales Government has acknowledged—is that there has been very little transparency about what is contracted in terms of export LNG and to what extent the CSG resources in Queensland are committed to those export terminals. We feel that the New South Wales Government, obviously, in its dealings with gas companies has the ability to require that information about the full extent of those export contracts and that the conditions that bind them are made available so that this Government can make informed decisions around gas supply and pricing.

The Hon. MICK VEITCH: Are you only talking about contracts related to New South Wales gas supply?

Ms FLINT: No, I think clearly it is the export contracts that are crucial and that are driving the rest of the impacts on the eastern Australian gas market so we think the New South Wales Government should be asking for full transparency around the export contracts.

The Hon. MICK VEITCH: You will be asking the Australian Government to put that regime in place?

Ms FLINT: I think the question is if anyone wanted to do business in New South Wales I think the New South Wales Government could demand that information from those companies, companies such as Santos and Origin which operate in both States and are involved in the export terminals. They could make that a precondition of their allowing them to do business in New South Wales. I think that is a fair thing to ask. I

agree, it would be great for the Australian Government to require that kind of transparency and it is something we have needed for some time on this issue. Yes, I think at both levels of government it could be an advantage and produce some more information that has really been called out for by the community.

Ms JAN BARHAM: Can you give us an indication of what would happen if areas such as the Northern Rivers where a community has expressed overwhelming opposition to coal seam gas were declared off limits? What would happen if that goes ahead—if they were approved?

Ms FLINT: If drilling occurred, in terms of the impacts on the community?

Ms JAN BARHAM: Impacts on the community and the sort of response from the community?

Ms FLINT: I think the Northern Rivers community has made it very clear that they do not want coal seam gas drilling in their region. Some of the concerns that they have raised related to the still unresolved health impacts of coal seam gas. We have seen a lot more research emerging from the USA about the health impacts of unconventional gas drilling in the last few months; there is a building body of evidence on that. They are also extremely concerned about the potential impacts to water and water supplies particularly, but also to the issue in terms of the incompatibility between a densely settled area and an industrial invasive gas field. The scale and impacts of gas drilling for communities that are densely settled like that and produce the types of farming products which they do are a big issue for them. So they have a range of issues and a range of concerns.

Ms JAN BARHAM: Are you confident that the recently announced Gas Plan will protect the land and water resources of that area and New South Wales as a whole?

Ms FLINT: No, we are not. We believe, contrary to the Minister's announcements here this morning, from our read of the NSW Gas Plan it does not actually implement all the Chief Scientist's recommendations. There are a number of very important recommendations which it says it will consider and there are others which it does not address at all. In particular, the Chief Scientist said areas needed to be identified that should be off limits that would put water resources and other aspects at risk. Where there are existing exploration licences the New South Wales Government is not proposing anything to address that issue and to identify any prohibitions on gas drilling. They have said that in future with new exploration applications they will look at a process to make sure that drilling is not occurring in sensitive areas, but given that there are large areas of exploration licences already in play, and especially in the Northern Rivers, it does not address that issue at all.

There are a number of other things: the insurance recommendations, the recommendations about rehabilitation bonds that were made by the Chief Scientist. The Government report simply says "We will consider it"; they do not commit to doing it, they do not say how they are going to do it. So I guess the community feels like there are a lot of shortfalls in the Gas Plan. Most notably, it is basically predicated on the argument that there will be a shortage of gas supplies in New South Wales. We do not agree with that and therefore we do not believe that the premise for the Gas Plan is correct and think that there is a large amount of work the Chief Scientist recommended needed to be done before gas drilling proceeded in New South Wales. We think the most important thing is that the Chief Scientist did a review; she did not do science, she recommended a lot of science be done before gas drilling commenced, but the New South Wales Government is allowing Gloucester and Narrabri to proceed before that actual scientific work is done.

Ms JAN BARHAM: That means they are not fully taking into account the Chief Scientist's review and recommendations?

Ms FLINT: We do not believe so, no.

Ms JAN BARHAM: Do you believe that the community understands that this is the case, that there is a lot of work that has not been done, that there are not the assurances—and we have seen the BTEX situation?

Ms FLINT: Definitely. I think the community is rather sceptical of the Gas Plan. The community was happy that the New South Wales Government cancelled the applications that were pending—the large areas of applications. That was a very good decision, but there are a number of other issues with the Gas Plan where the community wanted to see proper, rigorous science before these gas projects were approved and before drilling rolled out, which have not been implemented, and a number of them which there is no clear commitment to implement.

Ms JAN BARHAM: Do you think the community has articulated those concerns strongly enough? I was going to ask you to give a bit more background about a social licence, what that means to the community and what it means to Government and if that is able to be met.

Ms FLINT: Yes, I guess that is a fundamental issue in terms of whether communities are able and should be able in a democratic system such as ours to have a fair say in the energy choices that are made, especially those that directly impact on their lives and livelihoods. There are choices, there are alternatives, there are plenty of options for energy and they are growing and they are becoming cheaper every day and communities do not accept that they have to take whatever natural resource extraction industry this Government wants to foist on them. I think the community is basically asking for a basic level of equity, to have a fair say in planning decisions that affect them. Prior to the last election the New South Wales Government said they were going to hand power back to communities—that was one of the five pillars of Barry O'Farrell's election agenda—and that has not happened; communities are still waiting for that to happen.

So I think there is an opportunity to find solutions, and there are so many solutions there—there are communities wanting to develop community renewable energy projects, there are enormous energy efficiency opportunities, and there is no reason why we cannot have safe water resources, clean food, happy communities and a prosperous economy based on clean energy sources.

CHAIR: You say in your submission in two places that I can see that "coal seam gas mining is the cause of the gas price shock in Australia not the solution". Further into your report you say, "The LNG export industry is causing gas prices to rise dramatically". Which is it? How does coal seam gas exploration and mining cause the gas price shock to Australia when it is only mooted to be occurring in New South Wales at this stage for our State? How do both cause it?

Ms FLINT: The CSG mining and export industry in Queensland by commencing exports has—

CHAIR: We are talking about New South Wales now.

Ms FLINT: But because we have got an eastern Australian gas market the prices in New South Wales are basically determined by the eastern Australian gas market, and we are now hooked into the Asian market because of exports, so prices in New South Wales are the direct result of the export—

CHAIR: Is that not more to do with the fact that our market now is going to be open to international competition and that the building of LNG plants is the cause of that?

Ms FLINT: That is right.

CHAIR: Not the CSG drilling?

Ms FLINT: The CSG mining was done with the whole purpose of developing the LNG port. I guess in my submission I generally try to put those together. I meant both—the CSG drilling for the LNG exports. I am sorry if that was not clear.

CHAIR: You mention in your submission that it is predicted that gas demand will fall and that the amount of gas that is coming online will obviously be excess. Is it not true to say that there will be then, therefore, plenty of gas but the potential for limited supply in New South Wales?

Ms FLINT: It would appear clear that there will be gas for people who are prepared to pay. So there is going to be a price increase—that is already happening—and undoubtedly demand will reduce in response to that price increase. That is the way that supply and demand generally works. Basically the market will adjust to that reality.

CHAIR: You talk about opportunities for measures to find cheaper alternatives to gas. You say, for example, "Many of these measures are already cheaper than using gas and result in lower energy bills in New South Wales for New South Wales households and businesses". Generally speaking, the only two forms of energy available to the ordinary household in New South Wales are electricity and gas. What other ones are there that you are pointing to?

Ms FLINT: Sorry, which part are you referring to?

CHAIR: On page 7, "The opportunity".

The Hon. Dr PETER PHELPS: Nuclear?

Ms FLINT: Solar power. Solar and wind are available and becoming cheaper. There are a lot of appliances that are becoming more energy efficient, such as heat pump space heating and water heating, which is now becoming more efficient than gas. So there are plenty of options. There are also energy efficiency options to reduce energy demand.

CHAIR: We all know and understand solar hot water systems—I have got solar panels on the top of my house and I can understand that—but heat pump systems and related technology generally, as far as I know, and maybe someone on the Committee can correct me, is not available for the retail market.

Ms FLINT: I would direct you to the Melbourne Energy Institute report; it goes into that in detail and says they are available for the market. Reverse-cycle air conditioners are more energy efficient now than gas for heating retail and residential houses and it seems the same with water heating—it is becoming much more—

CHAIR: Just looking at your recommendations starting on page 7 and turning to page 8, recommendation 1 says, "Immediate commission of a thorough and independent analysis of the likely reduction in gas demand in NSW". I would agree with that, and I think you are probably on the same ground that the Minister is on there. Recommendation 2, "Identify low cost energy efficiency and energy alternatives to gas use for businesses and industry". What have you got in mind there? What alternatives, for example, could there be for the explosives plant in Newcastle, which makes explosives for the coal mines and uses something like, at times, 17 per cent of New South Wales' gas? What would their alternative be?

Ms FLINT: Chemical feed stocks are relatively low. According to this report today it is actually more like that 5 per cent for New South Wales—so I would be interested to see where your figures come from—of New South Wales' gas use. We are not suggesting—I do not think anyone is—that we stop using gas. What we are suggesting is that there is not going to be a shortage and that there are plenty of options to ensure that there is not a shortage and reduce our gas demand, if necessary, by other measures. Most gas used in businesses and industry in New South Wales is apparently for process heating and there is a range of temperatures at which that heating occurs, and other energy sources can certainly replace substantial segments of that heating. Again, this Melbourne Energy Institute report goes into that in detail.

CHAIR: At point 3 you talk about the introduction of energy efficiency measures for New South Wales households and businesses. At item 4 you say, "Support installation of electrical heat pump or solar hot water systems". At item 5: "Support replacement of gas appliances with more energy efficient heat pump and solar hot water heaters. Item 6: "Support solar PV for households". Are you not really in those five points saying the same thing over again?

Ms FLINT: Possibly. There is more detail that needed to go in.

CHAIR: I think your recommendation at 8 is a good one; I would agree with that certainly. I think you are in agreement with the Government as well in item 9: "Explore other regulatory options to ensure NSW can source" what you call "conventional gas supplies". Certainly the Government is looking at doing something and you seem to be on the same page there.

The Hon. Dr PETER PHELPS: Does Lock the Gate disapprove of policy in gas mining because of the fact that it is a carbon-based industry or because of the alleged detriment that it does to rural communities?

Ms FLINT: Lock the Gate is primarily concerned because of the impact on rural communities, the direct impacts on water resources and the social structures of rural communities.

The Hon. Dr PETER PHELPS: So you do not object to natural gas per se, or the use of natural gas per se?

Ms FLINT: We do not object to conventional gas supplies, no, because they have a very different footprint; they do not require thousands of gas wells spreading across hundreds of thousands of hectares, so it is a very different issue.

The Hon. Dr PETER PHELPS: Environmentalists who tag onto the Lock the Gate Alliance on the basis that it is a way of defeating carbon-based energy really do not get what Lock the Gate is all about. Is that what you are saying?

Ms FLINT: Lock the Gate is a very diverse organisation. We have member groups who are environmental groups, farming groups and Indigenous groups. We have a very diverse member base and supporter base, but it is very clear that our primary issue is with the impacts on communities.

The Hon. Dr PETER PHELPS: Does Lock the Gate also oppose the imposition of wind farms on rural communities?

Ms FLINT: No.

The Hon. Dr PETER PHELPS: Hold on, but wind farms can be just as disruptive and annoying—

The Hon. NIALL BLAIR: —and invasive.

The Hon. Dr PETER PHELPS: —and invasive, so what makes wind farms so much less objectionable?

Ms FLINT: For starters, wind farms do not put water resources at risk; nor do they deliver anything on the scale of the impacts that coal seam gas has. The footprint does not compare.

The Hon. Dr PETER PHELPS: That is certainly not the view of people around Crookwell and Bungendore.

The Hon. NIALL BLAIR: And Boorowa and Cooma.

Ms FLINT: We have made it very clear that our concern—and that has been the basis on which Lock the Gate was formed—was the impacts of coal seam gas mining on communities and the environment. Lock the Gate is concerned about the science surrounding greenhouse gas emissions and fugitive emissions from coal seam gas.

The Hon. Dr PETER PHELPS: So you are against natural gas.

Ms FLINT: No, we are not against it. We understand the overwhelming scientific evidence about the risks of emissions from fossil fuels. That is an issue that I think most people these days recognise is something that needs to be addressed with issues such as this.

The Hon. Dr PETER PHELPS: You say you cannot foresee any shortage for natural gas in New South Wales. What is the basis for your assessment?

Ms FLINT: The basis for our assessment is a couple of things. It is particularly the report by the Melbourne Energy Institute, which has come out today, which looks at the likely impact of the price hikes that have occurred and what impact that is likely—

The Hon. Dr PETER PHELPS: Why are those price hikes occurring?

Ms FLINT: They are occurring because of the LNG export terminals linking our domestic market to the international market.

The Hon. Dr PETER PHELPS: So domestic gas is being exported overseas, reducing domestic gas availability. Is that correct?

Ms FLINT: No. The primary reason is that the export of gas has linked us to the Asian market and that has driven up our prices to match the Asian market. No-one will sell their gas into the domestic market at prices that are a third of the international price, which they can get if they sell it to the exporters.

The Hon. Dr PETER PHELPS: In other words, the export market has taken supply which otherwise would have been used for domestic purposes into a broader market. Is that correct?

Ms FLINT: It has increased prices. It has driven a price increase. I do not think that anyone knows at this point what decisions the gas companies will take about how much gas they may take from existing conventional gas sources in Moombah and shift it to Queensland as opposed to how much they will get from their gas drilling in Queensland. I think the issue of supply shortages from CSG fields in Queensland is still quite an unknown.

The Hon. Dr PETER PHELPS: How can you possibly say that there are no shortages when you admit that there is a diversion of resources from domestic markets to international markets?

Ms FLINT: I have not admitted that. We have just tripled our production of gas on the eastern seaboard by drilling for vast amounts of gas in Queensland. That is what is slated for export, not conventional gas supplies in South Australia. If the gas supplies are short in Queensland—

The Hon. Dr PETER PHELPS: No, we are talking about shortages in New South Wales. You said there is no gas shortage in New South Wales.

Ms FLINT: There should not be for a number of reasons.

The Hon. Dr PETER PHELPS: We import 95 per cent of our gas—

Ms FLINT: And always have, pretty much, so I cannot see how that is different.

The Hon. Dr PETER PHELPS: How can you say we have no shortages?

Ms FLINT: Why has there not been a crisis for the last 50 or 60 years.

CHAIR: Because we have had long-term supply contracts in New South Wales. Those contracts are coming to an end.

Ms FLINT: That is right.

The Hon. Dr PETER PHELPS: How can you possibly say there is no foreseeable shortage if those long-term supply contracts are going to end and you readily admit there is a foreign market available?

Ms FLINT: Because basically we have just tripled our gas production by drilling for gas in Queensland, opening up these vast gas fields in Queensland. That is what is slated for export. If the gas companies decide to take existing conventional supplies which have been supplying New South Wales to export, then that is an issue. So it is to a large extent of their own making. But clearly Bass Strait has large conventional gas supplies. The gas companies there have said they can supply the eastern seaboard indefinitely, so I do not see a pending supply shortage because I see that the price hikes will reduce demand significantly, and that is basic economics. There are conventional gas supplies—

The Hon. Dr PETER PHELPS: Why would you have price hikes if there is no shortage?

Ms FLINT: Because we are hooked into the export market. Who will supply gas to the domestic market at $3.00 when they can supply it at $9.00 when everyone else is going to get $9.00?

The Hon. Dr PETER PHELPS: So there will be shortages. The reason the price goes up is because there is a shortage of supply at that particular price.

Ms FLINT: It is because we are hooked into the international market. It has nothing to do with supply. It is about the market. We are now in an international market. IPART says quite clearly that no amount of gas drilling in New South Wales will affect the price domestically because we are now governed by the international price.

The Hon. Dr PETER PHELPS: Why does the price of any product go up?

Ms FLINT: The price—

The Hon. Dr PETER PHELPS: The price goes up because there is either an increase in demand or a decrease in supply. Yes? In a freely floating market—

The Hon. ADAM SEARLE: No. There is price gouging by private operators, for example, in network charges.

The Hon. Dr PETER PHELPS: In a freely floating market why does price go up? There is only one of two reasons. It is either a decrease in supply or an increase in demand. Given that demand is relatively inelastic and you claim it is going down, why would prices be going up? Why is it your prediction that prices will go up if you are saying that there is no shortage of supply for the New South Wales market?

Ms FLINT: I have told you. I can tell you again. I have said it. Because we are now part of the international market and because no-one will supply gas cheaply.

The Hon. Dr PETER PHELPS: So there is a shortage of supply.

Ms FLINT: No, this is not a shortage of supply.

The Hon. Dr PETER PHELPS: At a particular price.

Ms FLINT: No. The gas is available for those who are prepared to pay.

The Hon. Dr PETER PHELPS: So your entire argument that there will be a reduction in demand is predicated on the idea that there will be a massive increase in price, which can only come about because there is a decrease in available supply at the pre-existing price level.

Ms FLINT: There is already an increase in price and price triggers demand variations. I think that is a well established economic fact, and there are a number of other issues at play as well which I have discussed There are gas supplies in Bass Strait. There are a number of other issues at play.

The Hon. Dr PETER PHELPS: If you say there will be no shortage of supply for New South Wales, why are we bothering with alternatives? If there is no shortage of supply for New South Wales, as you contend—

Ms FLINT: Because we have a price shock. We have households and businesses that are now dealing with a very real increase in price for their gas supplies and they will be looking for alternatives and it would be good to be able to provide cheaper alternatives to show that we do not have this massive impact on our economy.

The Hon. NIALL BLAIR: Does it make sense that locally supplied gas, locally consumed gas, could be sold at a cheaper price than having to send that gas off to a hub in Queensland to then be sent overseas? Surely the transportation or transmission or exporting costs would have an impact on locally supplied and consumed gas. I understand the argument about the international market. But surely if I grow carrots at home and I can sell them at the front of my house rather than having to drive them to the port to sell them overseas I could sell them cheaper in my front paddock than I could overseas. Does that make sense?

Ms FLINT: The question makes sense, yes. There are a couple of issues. I think the interconnected eastern Australia gas market is one of those. Pretty much, gas that goes into the market can be sold at the international gas price. A number of people have had a look at this.

The Hon. NIALL BLAIR: If a company decides not to jump into that market, if it was to sign a commercial agreement with New South Wales to say, "We will supply the gas from New South Wales in New South Wales", not regulated but an agreement to do so, surely that could be done at a competitive price?

Ms FLINT: I think that is the question. IPART suggests that that is unlikely. The report by the energy—

The Hon. NIALL BLAIR: If the companies say that they are willing to look at that, and they are doing it—

Ms FLINT: The report by the Institute for Energy Economics and Financial Analysis, late last year, looked at the Narrabri gas project and said if they supplied just to New South Wales they would be able to deliver at a cheaper price than the price that we are looking at now with the international—

The Hon. NIALL BLAIR: What about Camden?

Ms FLINT: I do not know about Camden.

The Hon. NIALL BLAIR: What about Gloucester?

Ms FLINT: We are in an interconnected gas market. I think energy suppliers do not have a history of reducing gas prices to help out local businesses and communities.

The Hon. NIALL BLAIR: No, it is a commercial decision.

Ms FLINT: Yes, that is right.

The Hon. NIALL BLAIR: And you heard the Minister say earlier that some of the companies are looking at doing this, not for the love of the people but for a commercial decision.

Ms FLINT: That is right.

The Hon. NIALL BLAIR: Surely if they can produce something locally and sell it locally with certainty of contract and supply, then that is a good, safe commercial decision. Surely that is something that makes sense?

Ms FLINT: But they will be looking for the best return for their shareholders and if they can get the best return by selling it to one of the exporters then wouldn't they want an equal return for selling it into New South Wales? They would expect to; their shareholders would demand an equal alternative.

The Hon. Dr PETER PHELPS: I am concerned about the price of bread. Do you think we should have a reservation of all wheat in Australia to prevent export, because they would inevitably decrease the price of bread for consumers in Western Sydney?

Ms JAN BARHAM: I think Mr Scot MacDonald has a real question.

CHAIR: Order!

The Hon. Dr PETER PHELPS: Why do we not reserve wheat in Australia for Australian consumers?

Mr SCOT MacDONALD: I come back to Gloucester. Gloucester is not linked to any export market because the infrastructure is not there. It is Newcastle and Sydney. Your submission does not even mention Gloucester in the section "CSG mining will not guarantee gas from New South Wales"; there is no other physical way for that Gloucester gas to be used anywhere but Newcastle and Sydney. Why is Lock the Gate rejecting that scenario or not even considering that scenario?

Ms FLINT: It is basically the same issue about the price. The main thing is that clearly all gas suppliers will want to get the maximum price and they now can contract out at the international prices. Why would they supply into the New South Wales gas market at any less is the question and I cannot see that they would. So there will be a price shock and that will affect people.

The Hon. Dr PETER PHELPS: They cannot get to the market because they are not linked in. I put to you an alternative scenario and that is that AGL may wish to have a vertically integrated system so that it can maintain its monopoly over natural gas in New South Wales.

Mr SCOT MacDONALD: Sorry, are you answering that?

Ms FLINT: No. I think it was a statement. I am not sure what it was.

Mr SCOT MacDONALD: I put it to you that a number of consultants have done a number of reports. Axa does one and someone else does one, and they all seem to have slightly different views about where that will leave the price. Even putting that aside for a minute, surely we have a security issue, and I think the Chair mentioned that industry is used to long-term contracts. In the scenarios we are looking at down the track, unless there is indigenous gas it will be difficult to get those long-term contracts that people such as INCITEC and Brickworks value. So yes, you can have a spot market and you can have short-term contracts. There is a good argument that price, even at the high net backs that we are looking at, is still world competitive pricing, so to me the price is another issue. What is your response to the issue raised about security of contract supply, supply certainty?

Ms FLINT: I guess the issue is that it is good to think about the alleged scale of this shortfall, which I gather from some of the documents I have seen the industry is suggesting it is 0.3 per cent so it is a very small amount. In terms of dealing with the issues around that, we think finding secure alternatives is a better approach. If we are talking about security of supply from Gloucester, I think there are a lot of issues, most notably some of the environmental issues that are emerging now. Whether gas can be safely supplied from Gloucester would now appear to be an issue. There is a rising investment uncertainty there, and I understand they still have not made a final investment decision on that project. I think there is a whole raft of issues but the alleged shortfall we are talking about is very small. I do not think anyone has suggested that there will be any issues with the sort of supply generally to deliver to the vast number of commercial businesses seeking it in New South Wales.

The Hon. Dr PETER PHELPS: But at what cost? That is the problem.

Mr SCOT MacDONALD: Even if there is dispute around the size of that, and we have AGL with its Solving for X and the Australian institute says it is immaterial or whatever, if we wake up on a winter morning in 2016 and people have their showers or hot water or whatever, cooking, heating, can you accept that a government has responsibility to take measures to make sure that the comfort, security and affordability of our energy is addressed? It is all very well—

Ms FLINT: Absolutely, and I think in this case clearly the only secure way to do that is to invest in energy efficiency and alternatives because gas cannot ensure that there is not going to be a problem in 2016 because basically Gloucester apparently is not going to make a final financial close decision until later this year. They are not going to be drilling and producing gas in 2016 and Narrabri is light years away. So the answer, given that the purported shortage is very soon and well before these projects would even be up and running, were they to get up and running, is to actually restructure away from gas dependence in a few key areas. That can be done quickly and I believe that is the most secure approach.

Mr SCOT MacDONALD: That does not happen overnight either?

Ms FLINT: No, but it can happen a lot more quickly than trying to—

Mr SCOT MacDONALD: No-one sitting around this table would dispute that energy efficiency is a big part of our response to all our issues but, again, you are looking at two years, three years. State and Federal governments are doing that but in the mean time we have a looming issue, which The Greens are frivolous about. They are not going to take responsibility for it.

The Hon. ADAM SEARLE: Scot, bear in mind that even your own Minister is on the record as saying that we do not know whether there is a looming shortfall because of the lack of transparency in the market.

Mr SCOT MacDONALD: There is some argument as to whether it is 2016, 2017 or 2018—

The Hon. ADAM SEARLE: No, the industry argues there will be a shortfall.

Ms FLINT: Yes.

Mr SCOT MacDONALD: We have the tools there and if we address it properly surely we have a responsibility to do that, including the indigenous gas supply.

Ms FLINT: We think what this Government should do—and it is set out in our submission—is that they should have some genuine and independent assessment of the likely reduction in demand in response to these price hikes, which have already started, to introduce alternatives that can be rapidly rolled out. We think in the short term the thing that would be most useful for them to do, which I think they are looking at, is to review the pipeline capacity for conventional gas supplies from Victoria. That is potentially the fastest option again.

Mr SCOT MacDONALD: That is three years, four years.

Ms FLINT: Gas production in New South Wales is three years, four years. So the only short-term alternatives are to basically look at what is going to happen to demand, bring in energy efficiencies measures and incentivise alternatives for businesses and households.

CHAIR: The time for questions has expired. Thank you for appearing before the Committee this morning.

(The witness withdrew)

(Short adjournment)

JAMES BAULDERSTONE, Vice-President Eastern Australia, Santos, and

PETER MITCHLEY, General Manager, Energy New South Wales, Santos, sworn and examined:

CHAIR: I welcome Mr Baulderstone and Mr Mitchley. Would you like to start with an opening statement?

Mr BAULDERSTONE: Yes. We have a brief opening statement to make. Chairman and members of the Committee: Santos welcomes this opportunity to discuss the operation of the eastern Australian natural gas market and in particular two central questions: What is driving increased gas prices for New South Wales families and businesses? What can the New South Wales Government do to ensure a reliable and affordable supply of natural gas to the citizens of this State? Santos is well positioned to comment on these questions. We are the only supplier of natural gas that has a presence in all Australian States and we have been a major supplier of this essential product to the families and businesses of New South Wales for over 40 years.

The natural gas debate in this State has become increasingly heated, resulting in some important facts being overlooked. Gas is essential to our everyday life. It provides the primary energy source for over one million families and it underpins 200,000 manufacturing jobs in this State. Gas is one of the prime drivers of reducing global carbon emissions. All major countries are looking to gas as the fastest way to lower emissions. As such, the International Energy Agency forecasts that gas will play an increasing role in our lives over the next 30 years with use set to increase globally from approximately 25 per cent of our energy mix today to over 30 per cent by the year 2030. Finally, for 40 years New South Wales has imported its gas requirements—half coming from offshore Victoria and half coming from tight and unconventional resources, that is, Queensland coal seam gas and south Australian fracture-stimulated gas. It is against this background that our submission should be considered.

The answer to what is driving New South Wales gas prices has two parts: first, gas extraction costs have increased due to a variety of factors, including more difficult reservoirs, labour rates, regulatory and compliance costs; and, secondly, New South Wales electing not to efficiently develop its own resources. Due to these delays New South Wales finds itself as the only State in Australia that will not produce more gas than it needs. As is clearly outlined in our submission, the east coast gas market will triple in size by 2016—precisely at the same time New South Wales' historic gas contracts expire. Fortunately for New South Wales the answer is simple: produce its own gas, which will put downward pressure on prices. The basic economic principle of supply and demand—more supply will result in a cheaper price—is as true for New South Wales as it is for the United States, Queensland or the Northern Territory.

Fortunately for New South Wales, it has abundant gas resources. As our submission outlines, New South Wales has one of the largest undeveloped resources on the east coast of Australia. Local projects, such as Santos' Narrabri gas project, could meet up to half the State's demand and thereby would put downward pressure on gas prices. It is interesting that some political parties and affiliated groups have called for a total ban on developing natural gas held in coal seams. It is important to understand what this would mean in practice. I have a chart here of eastern Australian gas reserves. It is a Commonwealth chart of independent information. It highlights that over 85 per cent of the reserves in eastern Australia are held in coal seams. Coal seam gas is not new. Thirty per cent of the gas that we all use today comes from coal seams.

The impact such a ban would have on gas prices to families across Australia and job losses to industry will be hard to quantify. There are some submissions before the Committee that argue that no amount of additional New South Wales gas production will impact price. These arguments are fundamentally flawed. Amongst other errors, they ignore three basic facts. The Queensland LNG facilities are not an unlimited sink for new gas supply. The three projects have a fixed demand due to the size of their processing equipment. Global precedent also shows that recently in the United States there has been almost a halving of gas price due to new supply coming in, in a market 10 times the size of Australia's recently expanded east coast market. Lastly, there are transportation costs. If New South Wales continues to seek to rely on interstate supplies alone, it will pay the additional cost of transporting gas produced in those States for thousands of extra kilometres.

The New South Wales Government has the ability to mitigate future natural gas price rises. Energy users in this State, like all States in Australia, require the Government to put in place regulations that protect the environment, enable coexistence with traditional land use while supporting the safe and timely development of

natural gas projects. This has been done in every State in Australia. I am sure New South Wales will be able to rise to this challenge.

In conclusion, New South Wales has the ability to become self-sufficient in natural gas requirements for decades if it takes the opportunity to develop its own natural gas resources. Alternatively, failing to develop these resources will result in less secure energy supply, higher and more volatile gas prices for New South Wales families and businesses into the future, and will cost the State jobs and royalties which will deliver roads, schools and health care particularly in regional New South Wales. Santos is committed to playing our part, pursuing any development of the Narrabri gas project in a safe and sustainable manner while ensuring the environment is protected so as to deliver energy security for the people and businesses of New South Wales. Thank you. I look forward to your questions.

The Hon. MICK VEITCH: Mr Balderstone, are you able to submit a copy of your prepared opening statement to the Committee's secretariat?

Mr BAULDERSTONE: Absolutely, yes. We have a copy here.

The Hon. MICK VEITCH: That will assist Hansard to get the transcript right. In your submission you talk about the status of infrastructure particularly from Victoria up into New South Wales. For instance, if we were to look at 100 per cent of our gas supply coming through that pipe up into here, that would not be able to meet the demand. Can you in a much broader sense talk about the status of infrastructure in Australia?

Mr BAULDERSTONE: Yes, absolutely. I think the most important thing is to set some baselines here. Our submission, and I think the submission of all of the users of gas in this State, believe that existing demand should continue to be met in New South Wales. Demand means jobs. It means better prices and the economy is better off. The modelling is based on equivalent demand coming into the State. If you look at the infrastructure that is currently built on the east coast, Sydney has always been a major demand centre. Effectively you have 50 per cent coming from Victoria and 50 per cent coming from the north. With the LNG plants, those northern supplies will not be available going forward for Sydney in the foreseeable future. There is a large amount of demand up through there.

You are now trying to rely on Victoria to effectively supply 100 per cent of that southern market. If you look at that southern market peak demand, it is about 2,000 terajoules [TJs] per day. The current constructed infrastructure for processing gas is only about 1,700 so you do not have enough processing in the south to even process the gas. If you look at New South Wales in particular, its peak demand is about 600 TJs a day. The current installed pipeline capacity is around 400. Yes, you can expand those pipelines but you must question yourself: Who is going to invest the hundreds of millions of dollars, if not billions of dollars, to expand infrastructure for what is, in the context of Australia, a relatively small part of the overall east coast market—about 10 per cent?

The Hon. MICK VEITCH: Do you have a dollar figure off the top of your head?

Mr BAULDERSTONE: Yes. Pipelines generally cost about a billion dollars every thousand kilometres, so you are talking about hundreds of millions of dollars of pipelines and again hundreds of millions, if not billions, of dollars in more infrastructure. We are involved in the Kipper-Turrum project offshore in Victoria, and that project is in the order of $2 billion. You are talking very large significant amounts of money to be invested to meet a couple of hundred of TJs of peak demand in New South Wales. There is a much cheaper alternative to supplying this State. That is why this Committee is really important because we are here to talk about gas prices. I again make the point that there is no point in having gas available if it is not affordable. Santos is a company built on supplying domestic gas on the eastern seaboard. We want our customers to be here for the next 40 years as well.

The Hon. MICK VEITCH: On another matter, you mentioned that you have read some of the submissions. Some of the submissions are calling for transparency in all gas supply contracts. The New South Wales Government has full knowledge of all commercial transactions relating to gas supply. Could I get Santos' view on that?

Mr BAULDERSTONE: Yes, certainly. I personally have sat before many inquiries and given many submissions in which we have outlined in this submission and previous submissions the view on the supply-demand balance on the east coast. You see here on the chart, figure 5, that it actually shows the contractual

position coming into New South Wales looking very transparent about that. There is a lot of information out there. I think what people are really looking for is what additional information is coming out of the LNG plants in Queensland? They are very large projects. Some $60 billion is being spent and there is concern around some confidentiality there. But there is a lot of public information being put out by Santos' project, by the BG project and Origin's project about the demand those projects will have, the resources they have to meet those projects and any gas that is going into those projects from third parties.

The Hon. ADAM SEARLE: Mr Balderstone, even the current Minister, who gave evidence this morning, was talking about his frustration about the lack of transparency in the gas market. He compared it very unfavourably with the existing National Electricity Market where you can see who generates how much, how much is traded interstate and at what price. All those things seem to be missing in the gas market, particularly the price at which the companies trade.

Mr BAULDERSTONE: Yes. There is a reason for that.

The Hon. ADAM SEARLE: Could you please elaborate? Why should there not be greater transparency about those things for customers?

Mr BAULDERSTONE: You go back to the US, which is a great example because there is a facility there called the Henry Hub and the US market is so liquid. There are lots of producers, there are lots of pipelines and there are lots of processing plants. Gas is effectively traded like electricity—through a hub.

The Hon. ADAM SEARLE: It is also a country with 300 million people whereas we are country with 23 million people.

Mr BAULDERSTONE: Exactly right. What has happened with the gas industry and how it has developed is that Moomba is a great example with the Moomba-Sydney pipeline. Moomba was effectively developed by two pipelines, one going to Adelaide and one going to Sydney, and they were built based on 20 to 30-year-old long-term contracts. There were not a lot of customers out there. Basically one customer underpinned Moomba and that was effectively AGL. AGL has signed a contract over 20-30 years to create and bring on that gas field.

Because our country is so small—we do not have this big population base or this big base of manufacturers—traditionally gas has been brought on by single-supply, single-customer relationships. That is why you do not see the liquidity. Even if we create a trading hub—there is a trading hub at Wallumbilla at the moment and there is a trading hub in Victoria and there is a proposed trading hub being built in Moomba—the problem with that is that there is simply not enough supply yet coming into the market. But if you saw new shale gas coming in from the Northern Territory, new shale gas coming in from Moomba and New South Wales starting to bring on more gas, you would then have more liquidity in the market and a trading hub could then be set up. You would have transparency going through those trading hubs.

The Hon. ADAM SEARLE: Just getting back to that chart you showed us about the New South Wales-ACT demand, I think your proposition is that there is a gas supply shortfall looming. I know a number of industry participants say this. The national gas forecasting report from AEMO actually projects in the immediate future decreases in gas demand. When you look at is what I think is the case—that AEMO often has overestimated demand in the past—and when you look at that future projection, it may be that this looming shortfall that industry is promoting may not in fact exist; that is, in may be a combination of things, such as suppliers wanting to export the product rather than selling it domestically. But that is not the same as an actual shortage being produced in this country, is it?

Mr BAULDERSTONE: This is a really, really important point about what this Committee is examining. Demand destruction in New South Wales means fewer jobs, it means higher prices and it means going from gas-fired back to coal-fired. All of those things are bad for New South Wales.

Mr SCOT MacDONALD: Sheer genius.

Mr BAULDERSTONE: I have been meeting over the last two weeks with a number of manufacturers who would like to move to New South Wales to build facilities here. They are seeing the experience in the US where increased gas has led to a revolution in the manufacturing industry. Hundreds of thousands of new

manufacturing jobs in the US have been created off the back of new gas supplies. That can happen in New South Wales if we have competitively priced gas.

You asked about a gas shortage. We all know that what that really means is that gas will go to the person who is going to pay the most for it. That is why locally produced gas has such a significant advantage, because transporting gas 400 kilometres from northern New South Wales versus transporting it thousands of kilometres from either Victoria, Queensland or even Northern Territory will add $1, $2, $3, $4 per gigajoule to the price of gas in this State. I argue a couple of things. One, it is absolutely important this State tries to hold its gas demand and if we get the balance right and get the right gas prices in this State, we can see manufacturers moving into this State, which will be great for the economy, great for the workers and great for the royalties that will flow through to the State coffers.

The Hon. ADAM SEARLE: The Melbourne Energy Institute has made a submission and their report suggests that over the next 10 or so years gas demand could actually decrease by up to half. If that is half correct, that would be a massive disincentive to anyone investing.

Mr BAULDERSTONE: Let us examine what they have said. It is unfortunate it came out the night before the inquiry, so we have not had a chance to look at it in detail. They made a number of assumptions. The first assumption that pulls apart their argument is that gas prices will continue to rise and there is nothing anyone can do about that.

The Hon. ADAM SEARLE: I will come back to that.

Mr BAULDERSTONE: That is fundamentally flawed. What they then go on to say is that there will be fuel switching, so there will be less gas power generation, which means more coal. Yes, there will be some renewables coming into the mix, but as we have seen already when you start to pull gas out of the system the cheapest alternative for this country is to go back to coal, so you will have higher emissions. The second thing they assume is that the people who have currently installed heating and cooking facilities in their homes—a large amount of those are in Western Sydney—will be forced to have to retrofit their homes at a cost of thousands of dollars to do that, which they can ill afford.

Thirdly, and the most concerning, is because of the high gas price they put through there, they forecast, which is very clear in their report, thousands of job losses in the manufacturing sector. What their report actually shows is that if this State does not do anything and continues to push down a path of allowing increasing gas prices, you will get the outcome of that report, which is less demand, but the actual point of less demand is all those down results through the economy.

Ms JAN BARHAM: Do you think it is right that the community is right to be concerned that gas consumers overseas are being prioritised over domestic gas consumers?

Mr BAULDERSTONE: It is looking like any resource in Australia, be it coal, iron ore, wool, wheat or cotton. Because the size of the Australian market is so small, it is hard to get the efficiencies of scale here without some form of export. That is why all of those commodities that I have just mentioned export between 70 to 95 per cent of their product. Gas is no different in the economics. It simply needs scale to lower prices. Going forward on the east coast, we are looking at exporting some 60 per cent of the production going forward, which is actually lower than nearly every other resource in this country. So, no, there is no prioritisation going on for export. In fact, Santos has been very clear. We would like to prioritise gas development in this State to the families and businesses to ensure that there is affordable supply going forward.

Ms JAN BARHAM: Can you tell us when you intend to turn off the gas going down the Moomba pipeline into New South Wales?

Mr BAULDERSTONE: There will be no turning off. We did three things simultaneously about three or four years ago. We sanctioned gas our export project, which gave us greater scale in the market to ensure more gas could be brought on cheaper. We then signed a contract out of Moomba that underpinned 3,000 jobs in the South Australian economy because it gave us the scale contract that we needed to go forward. Thirdly, simultaneously, we invested over $1 billion in this State's gas industry to ensure that the legacy customers we have, that we want to have for the next forty years, will continue to be supplied, so we balance our portfolio across all our States. We develop gas in Victoria, South Australia, Queensland, Northern Territory, WA and we hope New South Wales, to ensure there is enough gas into the system.

Ms JAN BARHAM: How much will you reduce it by?

Mr BAULDERSTONE: There is an abundance of gas in the ground. Let me show you a chart in my submission, figure 6. If you look at this chart, these are independently sourced data, it shows you that New South Wales has the largest uncontracted resource potential on the eastern seaboard. You hear lots of stories about Victoria. If you look at the chart down here, Victoria has one of the smallest amounts of uncontracted reserves in place.

Ms JAN BARHAM: Did you say you submitted those with your submission?

The Hon. NIALL BLAIR: Page 14.

Mr BAULDERSTONE: Again, there is an abundance of gas. A simple question for this Committee is does New South Wales wish to bring its gas into the market to ensure families and businesses have an affordable supply?

Ms JAN BARHAM: So you will not be reducing?

Mr BAULDERSTONE: Reducing what?

Ms JAN BARHAM: The supply?

Mr BAULDERSTONE: Santos would love to continue to supply its existing customer base in this State. Our intention is to do that from supplies from New South Wales, Victoria, Queensland and South Australia.

Ms JAN BARHAM: I would like to ask you about a comment you made in the media about the production at Narrabri being at the back end of the decade, rather than 2016. Can you elaborate on that?

Mr BAULDERSTONE: Absolutely. There are a lot of questions around Santos's intent around Narrabri. It is important to realise a couple of things. Gas continues to be owned by the citizens of each State. Even when Santos has a production licence in South Australia, an exploration licence in New South Wales and an offshore licence in Victoria, those gas molecules continue to be owned by the citizens of those States. Santos is fortunate, on behalf of those citizens, to bring that gas into production. That means the Government has a very significant role to play in the time line of any production, be it 2016, 2017, 2018 or 2019.

As you see in my submission, at the moment one of the reasons it is difficult to get a precise answer around when Narrabri will come in is because the time frames around approvals in this State are so significantly different than every other State in Australia. What takes us weeks in Queensland and South Australia takes months in this State. I can bring on gas in 2017 if the Government and other industry groups were aligned to fast-track the project. Again, there are other ways. The gas could come in 2018, 2019, so we are all in this together. The question for this Committee is when does it think the families and businesses will most benefit from the Narrabri gas project coming on stream. The back end of the decade is anywhere between 2016 and 2019, but we need to work together to ensure that can come on stream as quickly as possible.

Ms JAN BARHAM: Does Santos have enough gas to supply its export facility at Gladstone and if there is a shortfall what impact would that have on the indication about the Narrabri project being prioritised for New South Wales?

Mr BAULDERSTONE: Absolutely. We have given many presentations over the years about the gas supply into our Gladstone project, remembering that we are 30 per cent owner of that project. Similarly with gas in New South Wales, we have said time and again our only plan is to build a connection point from Narrabri into the Moomba to Sydney pipeline. I have seen another submission before this inquiry that talks about a Hunter pipeline. We have no plans; we are doing no work on any northern pipeline. There is one route and it is going south.

CHAIR: Reading your submission, a key to this whole process, and you mentioned it earlier in your opening statement, is that the gas export capability of the three LNG plants in Queensland effectively has a capacity limit. Can you tell us what you think that might be?

Mr BAULDERSTONE: Absolutely. Again, there is a fair bit of information out there. We talk about our project in a fair bit of detail. Santos's export LNG project has a capacity limit of 1,200 terajoules a day. To put that in context, the Narrabri project is about 200 terajoules a day. The people who have bought into that project have also bought into the upstream gasfields. They are incentivised to maximise the recovery out of the gasfields that they have purchased. What that means is that there is a fixed amount of demand in that project. You cannot just go from 1,200 to 1,400 or 1,500. A new train is 600 terajoules. For there to be an expansion of our project based upon gas in New South Wales, we would need to source a project three times the size that is currently forecast for Narrabri—200 versus 600.

That is why this argument that no amount of gas can change price is wrong. It is absolutely globally shown—a really good example is the Northern Territory. Again, Santos has an export facility in the Northern Territory. It has had the Darwin LNG plant for 10 years. The northern market gas prices are currently between $4 and $5. The reason they are $4 to $5 with an export link is because that government has prioritised more supply coming in to ensure their domestic customers can have affordable gas. It is no different in Queensland and no different for New South Wales.

CHAIR: That is interesting because you are presenting the argument that you would be allowed to develop Narrabri and perhaps after that other projects, yet the New South Wales Government has said on a number of occasions—I think the Minister said it this morning—that even with the development of Narrabri, for example, with the potential of up to 50 per cent supply capability for the domestic market and the development of AGL at Gloucester, at best, the domestic market would see a 3 per cent reduction in price. Would you argue with that?

Mr BAULDERSTONE: I do not know where those stats come from.

CHAIR: I do not know either, that is why I am asking. A 3 per cent reduction is not worth it.

Mr BAULDERSTONE: What I can show you is precedent, if you look at figure 10 from our submission, which is this one here. Again, people forget about the US. Eight years ago the cost of gas in the US was $13 a gigajoule; one of the highest priced gas markets in the world. As you see there, from 2007 to 2014, the amount of supply has quadrupled in that market and the price has gone from $13 and today it sits below three. No-one predicted that because no-one predicted the ingenuity of those companies to produce gas so efficiently.

I can say that the more supply and the scale of the market enables us to become much more efficient on our cost basis, which means that we can afford to supply gas cheaper. Will that be 5 per cent, 10 per cent, 20 per cent depends. I can also say that if we are looking at sourcing gas for this State from the Northern Territory, for example, that will cost at least $5 extra to bring it from that location just on transportation and processing alone. Again, the answer to the question about how much cheaper it will be, there are a number of factors: how much supply, how efficient you will become and where is the alternative supply going to come from? The range could be significant.

CHAIR: Okay. Turning your mind for a moment to market share in New South Wales, because this is really where it is all going, what is Santos's current market share in New South Wales for gas you produce in New South Wales?

Mr BAULDERSTONE: I can take that one on notice. It is probably in the order of 25 to 30 per cent. We have contracts with AGL and Origin. Remember we are a wholesaler, so predominantly our contracts go into the portfolios of AGL and Origin, who then sell to most businesses and citizens. It is difficult for to us know precisely where every molecule of gas from Moomba or Victoria goes. At the moment we produce no gas in New South Wales, so we do not have any direct supply relationships covering gas in this State.

CHAIR: Can you take that question on notice? Obviously you are trying to become a producer just as AGL is trying to move from being a retailer to a producer. Does that characterise it correctly?

Mr BAULDERSTONE: Historically Santos has been a wholesale producer. We have traditionally sold the majority of our product to downstream companies like AGL. AGL has been producing small amounts of gas at Camden for a while and Origin has produced large amounts of gas from coal seams in Queensland for

20 years. It is good for the market to have multiple producers. Santos is not a retailer and we see ourselves staying in the wholesale market.

CHAIR: So you obviously do not see yourselves moving into the retail side of things.

Mr BAULDERSTONE: No.

CHAIR: You see yourselves increasing the pool of available gas in competition at the production level with AGL and Origin.

Mr BAULDERSTONE: That is correct.

CHAIR: In New South Wales?

Mr BAULDERSTONE: Yes, in New South Wales.

The Hon. Dr PETER PHELPS: Who are the gas retailers in New South Wales and the Australian Capital Territory?

Mr BAULDERSTONE: The major gas retailers are Origin, AGL and EnergyAustralia.

The Hon. Dr PETER PHELPS: What percentage of the market would AGL have?

Mr BAULDERSTONE: It has a significant percentage of the New South Wales market because it was born and bred here. It is Australia's oldest company. It has roughly half of the market.

The Hon. Dr PETER PHELPS: I will put to you something that has been put to me by opponents of coal seam gas activity in New South Wales. It is what I call the "China argument". It says that a slowdown in China to more normal growth rates, the United States becoming a net energy exporter for the first time in about 40 years, and greater capacity in Russia will inevitably drive down the international price. As a result, we do not need to worry about having coal seam gas production in New South Wales because we will be able to tap into a much lower rate than that now available in the international market. Can you address that?

Mr BAULDERSTONE: Absolutely. Figure 9 in my submission compares the current pricing around the globe. It shows that the price of gas in China ranges between $10 and $23 a gigajoule, in Indonesia between $5 and $10, in Japan between $16 and $27, in Vietnam between $10 and $11, and in Australia the price is currently between $6 and $7 and it is forecast to increase to between $6 and $9. Australia has the cheapest gas prices in our region and it is likely to maintain those prices because if you have gas in your country you do not have to spend money on liquefaction and transportation. If people argue that gas can be imported into Australia then the price will be between $15 and $25 a gigajoule. That would shut down every manufacturer in this country. Australia is a wonderful place, but it is relatively expensive and we have a high standard of living. We rely upon cheap energy as a competitive advantage. If we give that away we can kiss goodbye to our manufacturing sector.

Mr SCOT MacDONALD: I refer to page 16 of your submission, which contains a quote from a Mr Buckingham, who apparently could not attend this hearing today. He states:

> Australia is an expensive place to do business, my job is to make it more expensive, and that's what I hope to do.

What is the sovereign risk of that sort of approach and what does it mean for the cost of living and jobs for people in places like Western Sydney?

Mr BAULDERSTONE: I must say I was disappointed when I watched that on YouTube. Anyone can have the pleasure of watching the clip, which is called "Politics in the Pub". It demonstrates what this Committee is all about and it links back to a previous question about a University of Melbourne report produced in concert with The Australia Institute. If you want a scenario that produces an environment that forces gas prices higher, you will have delays, regulation and constant questions around an industry that has been operating safely and sustainably for decades in this country. That forces increased gas prices and it destroys demand. There is no doubt about that. The University of Melbourne paper accurately describes it. However, what it does

not talk about is the consequences of demand destruction. I worked for BlueScope Steel and it had no alternative but to run its plant on natural gas.

Mr SCOT MacDONALD: It cannot run with energy produced from wind farms or solar arrays?

Mr BAULDERSTONE: No, it cannot. It would have to retrofit all the blast furnaces. That would make no financial sense and the facility would be shut down. Yes, there is a sovereign risk issue around new investment, but I think we need to concentrate on our existing manufacturing base, which is wondering what will happen. When I read the submissions I found it interesting that every one of them—Brickworks, CSR, and the Business Council of Australia, which represents hundreds of our major companies—mentions the need for more gas. They do that because they know they need gas to maintain their facilities in this State. That is compelling. You have producers, who employ people, and customers saying that more gas is needed. That is clear in the submissions.

Mr SCOT MacDONALD: Do you have any comments about the cost of living in places like Western Sydney, in particular?

Mr BAULDERSTONE: That is a very pertinent question. The people who can least afford increased energy prices are those who will be impacted by a lack of development of gas in this State.

Mr SCOT MacDONALD: Their lower disposable income is chewed up by increased energy prices.

Mr BAULDERSTONE: Two things will happen: either gas prices will continue to increase because there is no downward pressure from incoming supply, or gas will not be available and they will be forced to change the type of energy they use. That means installing a new stove and a new hot water system, and that costs a lot of money.

The Hon. Dr PETER PHELPS: It is your view, and presumably you have evidence, that domestic consumer demand for natural gas is highly inelastic. Is that a fair assessment?

Mr BAULDERSTONE: Absolutely.

The Hon. Dr PETER PHELPS: A company can simply turn off the gas and flick on the electricity.

Mr BAULDERSTONE: No. It is interesting to look at the gas market.

The Hon. Dr PETER PHELPS: Are you saying that the entire market is inelastic?

Mr BAULDERSTONE: If you are one of the one million families in New South Wales using our product, your ability to fuel switch depends on whether you want to install a new hot water service and the like. There are also two types of manufacturers. People forget that a significant amount of our gas is used for feedstock; that is, it is not a fuel source, it is used to make fertiliser, chemicals, plastic and so on. Those producers live or die according to the price of gas. The third group of manufacturers includes BlueScope Steel, Brickworks, Adelaide Brighton Cement and so on, who use our products to fuel their activities. It is inelastic because if they are forced to spend hundreds of millions of dollars in a tough environment, they do not. They relocate to Queensland and the United States where the gas is cheaper. That is what we are talking about.

Mr SCOT MacDONALD: You referred to fertiliser. Are our farmers now paying or are they likely to pay more for fertiliser because of the possibility of a moratorium and the constraints on exploration and production?

Mr BAULDERSTONE: It is very important that affordable gas is coming into the market. Again, Incitec Pivot will be very concerned about the uncompetitive nature of gas prices on the east coast.

Mr SCOT MacDONALD: We have already lost one plant to Louisiana.

Mr BAULDERSTONE: That is correct. If you are forced to import all of your fertiliser from overseas you are subject to the vagaries of the international market. It is very good to have local manufacturing producing a portion of your local product. For example, we have just signed an extension of a gas contract with Qenos, a

major manufacturer in Port Botany. That underpinned thousands of jobs in Sydney. It is the only remaining plastics manufacturer in the country.

You asked a question about what Santos intends to do. We intend to try to keep our customer base going in this State. We take a long-term view. There are times when we will choose to sell at a cheaper price to a domestic customer to ensure that it is there for the long haul. We talk a great deal about gas prices and we make assumptions about them. Gas prices have halved internationally in the space of three months because the price of oil has gone from $120 to $50 overnight. That means that Santos having a good, strong and solid domestic customer base in this country makes very sound business sense. That is why we want to bring on more gas from this State.

Mr SCOT MacDONALD: I think the Chair mentioned security of contracts and it also concerns me. Someone mentioned that the history is long, secure contracts that do not involve a great deal of volatility. If the New South Wales domestic gas industry were able to get going would there be better security and a return to longer contracts?

Mr BAULDERSTONE: The days of the 20-year or 30-year contract are over. They are difficult to reprice and they involve gas arbitrations and so on. I think the market is moving towards five-year to 10-year contracts. I referred to when the Narrabri project will start and regulation and the Government's role. There is also a role for customers. We are talking to a range of customers at the moment about entering into underpinning contracts out of Narrabri—local customers, retailers and manufacturers—to buy the initial product that comes out of that gas field.

Mr SCOT MacDONALD: They will be foundation customers.

Mr BAULDERSTONE: Yes.

Mr SCOT MacDONALD: Indigenous supply is more likely to lead to more secure contracts rather than riding the spot price, which is volatile.

Mr BAULDERSTONE: Yes. As I said, there is no effective spot market at the moment because there is not enough liquidity in the market.

The Hon. ADAM SEARLE: What about infrastructure?

Mr BAULDERSTONE: To some degree the infrastructure is there, but it has been built around long-term contracts. When you roll off you cannot go onto the spot. There is a bit of spot, but if you are a manufacturer you need a reliable and consistent supply of energy. A spot can go from $1 to $10 and you cannot have that variability. Electricity is different because you can hedge. You probably cannot hedge gas contracts at the moment because there is not enough liquidity in the market.

Mr SCOT MacDONALD: You have touched on transmission and you talk about a price of $4 or $5 out of the Northern Territory. What sort of disadvantage would there be in not having an indigenous gas industry in New South Wales? What would be the disadvantage compared to Queensland or Victoria relative to transmission constraints and cost?

Mr BAULDERSTONE: Figure No. 8 in my submission shows where the current gas resources are held. There is the Gippsland Basin in Victoria, Moomba in South Australia and the Queensland coal seam gas fields. At the moment gas comes from Victoria, Queensland and South Australia. The gas has to come from Queensland to Moomba and then to Sydney, which is 2,000 to 3,000 kilometres. As I said, the rough rule of thumb is that it costs about $1 per gigajoule per 1,000 kilometres.

Mr SCOT MacDONALD: Do you see a migration of gas-dependent manufacturing to other States—Victoria, South Australia or Queensland?

Mr BAULDERSTONE: Manufacturing will always be located where the gas is cheaper. Where it is cheaper is where the right regulations are in place to make sure that you have the ability to bring the gas to the surface at the cheapest price. Also, the less cost you have on having to transport that product the more advantage you have. So if you have got the resource like Victoria, like Queensland and like South Australia you have a very significant competitive advantage over New South Wales.

The Hon. Dr PETER PHELPS: It is a developed resource.

Mr BAULDERSTONE: Correct.

The Hon. Dr PETER PHELPS: New South Wales has got the resource; there is just one problem.

Mr BAULDERSTONE: We have got plenty of gas; it is just in the ground.

Mr SCOT MacDONALD: Are you hearing from your direct or indirect customers via Origin, for example, concerns about the Incitecs of the world's look five or 10 years ahead? What is their attitude to New South Wales?

Mr BAULDERSTONE: I sat on the Business Council of Australia [BCA] Energy Security Forum for the past 12 months, which was a forum of the producers, the retailers and the customers. Every customer is extremely worried about the current situation in the east coast gas market.

Mr SCOT MacDONALD: So moratorium is a dog. It really is.

Mr BAULDERSTONE: Again, there is a choice. Everyone has a choice. Again, as I keep saying, this gas is not Santos's gas. This gas is—

Mr SCOT MacDONALD: It is irresponsible, but I will leave it at that.

The Hon. Dr PETER PHELPS: Only socially and economically irresponsible.

Mr SCOT MacDONALD: Only if you do not care about jobs.

The Hon. Dr PETER PHELPS: Or economic development.

CHAIR: Who implemented the moratorium?

The Hon. Dr PETER PHELPS: I would just like to formally apologise to Santos and all gas customers in New South Wales on behalf of the New South Wales Government for the cowardly attitude which they have taken largely in response to one big mouthed radio shock jock.

CHAIR: After that monologue, are there any questions on notice?

The Hon. ADAM SEARLE: Mr Baulderstone, you indicated in one of our earlier exchanges that supply will gravitate to where it can get the greatest price. With the Queensland export platform now opening up which of the current suppliers to the New South Wales market will have the option of using the Queensland platform and which ones will not?

Mr BAULDERSTONE: Effectively, a liquefied natural gas [LNG] facility is like any other manufacturer. When current gas gets sold to Incitec Pivot, the gas goes in, it gets converted into fertiliser and it is exported or used by local farmers—the energy plant is really no different. The real question is how much gas do they need, and they are always incentivised to produce their own gas from their projects. There is lots of modelling out there that small amounts of gas are required by the project. But I think the more fundamental question is let us say that the gas price goes to $9 in Queensland. If you are a supplier in Queensland—most of the gas is in Queensland, they have got some 35,000 petajoules (PJs) of reserve; New South Wales has got about two. If you get $9 in Queensland, to get the same return you would need to get $11 in New South Wales because of the cost of transportation. So even if they have theoretically got the same price in Queensland, New South Wales would be about a $2 difference just because of transportation.

That is why—which I think the question before was, and it was the right way to think about it—you are always at an advantage if you can have your energy source as close to your plant as possible. When I worked at BlueScope again, the reason BlueScope is where it is at the old BHP Steel plant is because it is right next to the coalmine. Iron ore is across the other side of the country, which was difficult, but they located it there because it is right next to the coal deposits and that gave it a competitive advantage. Gas is no different. That is why Victoria has the highest penetration of gas in manufacturing and homes, because it has a fantastic gas resource

off the coast of Victoria. This State has a fantastic gas resource. It just needs to decide whether it wants to support manufacturing, hold its demand and, I would argue, increase demand to bring high value adding jobs back into the State.

CHAIR: Given the short time frame for this inquiry the Committee has resolved that answers to questions on notice be returned within seven days. We would appreciate your help in assisting us to meet our reporting deadline. The Secretariat will be in contact with you in relation to questions you have taken on notice. Thank you very much for attending.

(The witnesses withdrew)

MATT GRUDNOFF, Senior Economist, The Australia Institute, sworn and examined:

CHAIR: Would you like to start with an opening statement?

Mr GRUDNOFF: I would. Thank you for inviting me to speak to you today. The Australia Institute has taken a strong interest in coal seam gas over many years, publishing papers on the economic impact of the gas industry, particularly the eastern Australian gas market. New South Wales is facing a gas price shock. It is not facing a gas shortage and more supply from New South Wales will not stop the gas price from rising. Rather, the price shock has come about because the gas industry is seeking to sell Australia's gas to Asia where the price is much higher.

The construction of six liquefied natural gas [LNG] trains in Gladstone in Queensland will connect the eastern Australian gas market to the rest of the world for the first time. The higher gas price is not an unforeseen or unintended outcome from the construction of these export facilities, it is rather the purpose of their construction. Like any firm in a market economy, the gas industry wants to sell its product to customers who are willing to pay the highest price. Customers in Asia are willing to pay two or three times more for gas than Australians have traditionally been willing to pay.

As well as a price shock there has also been a massive increase in gas supply. Rather than a shortage in the gas market of eastern Australia, supply is set to triple. The new supply is coming predominantly from coal seam gas [CSG]. In fact, it is the CSG production that made the construction of the export facilities possible. Without new supplies of CSG the export facilities would not have been built and the gas price would not have increased to world parity prices. A doubling of wholesale gas prices makes extracting gas very profitable and the gas producers are keen to produce more but the industry faces difficulties extracting more gas because of health and environmental concerns about CSG.

There are two myths that the gas industry has put up to force a sense of urgency for the approval of CSG projects in New South Wales. The first is that unless New South Wales produces more gas they will face a supply cliff which would see shortages of gas on some days for New South Wales. The second is that the higher gas prices can be mitigated by allowing more supply. As Winston Churchill said, never let a good crisis go to waste. The gas industry, having created the conditions for the price rise, is now using that price rise to push for more CSG production. The industry has claimed that more CSG production will lower gas prices. With domestic gas prices linked to world prices, increased local supply will only lower domestic prices if it also lowers world prices. The relatively small amount of additional supply that New South Wales could produce will not have a material impact on the world price and so it will not lower domestic prices.

A new report that The Australia Institute commissioned from the Melbourne Energy Institute found that demand for gas in New South Wales could halve over the next 10 years. Factors driving down demand include warmer winters, rising gas prices, falling electricity use, energy efficiency and technological advances. Modelling that the industry has used in the past to show that there will be a supply cliff has been highly inaccurate. They have used a form of modelling known as input-output modelling or IO modelling. The Australian Bureau of Statistics has stopped using this type of modelling because it is biased, the Productivity Commission has called it abused and the New South Wales Land the Environment Court threw out this sort of modelling wholesale, calling it deficient. The modelling has also failed to take into account changes in demand due to the increase in price. By maintaining high levels of demand when prices rise dramatically they are able to create a gap between supply and demand. The shortage is then assumed to come from domestic consumers rather than international customers.

So what can the Government do about rapidly rising gas prices? To stop price rises there are two things that the Australian Government can do. Both are very difficult politically. The first is to introduce a gas reservation policy. Such a policy would need the agreement of the Federal Government and the New South Wales, Queensland, Australian Capital Territory, Victorian, Tasmanian and South Australian governments. The second is restriction on gas exports.

Beyond these two very difficult solutions—and highly unlikely solutions—the New South Wales Government can only help gas consumers cope with the price increases. This could include: acting on recommendations such as those from the Alternative Technology Association that would help residential customers to fuel switch from gas to electricity; remove subsidies that encourage uneconomic use of gas; remove subsidies that encourage uneconomic expansion of the gas grid; informing gas customers of the

potential advantages of switching to other fuel sources and applying energy efficiency measures; facilitating the identification and financing of economic fuel switching and energy efficiency projects; and, finally, reducing infrastructure costs by rationalising the gas grid where economically advisable.

The Hon. MICK VEITCH: Could you table the prepared opening statement?

Mr GRUDNOFF: Yes.

The Hon. ADAM SEARLE: You indicated that the price shock is being induced because the east coast market is now connected to the outside world and has the ability to use the Queensland platform to export. Are you suggesting that all of the producers that currently supply New South Wales can now use that export platform or suggesting that because some producers can use it all of them can jack up the price?

Mr GRUDNOFF: They can effectively charge the market price and the market price will go up to the export parity price, which is what our Asian customers are willing to pay minus the cost of getting it to Asia. That effectively becomes the market price and then whether or not you sell to Asian customers or whether you sell to Australian customers you will get that same price.

The Hon. ADAM SEARLE: But if resources were developed in New South Wales that were approved only on the basis that they sold into the domestic market in New South Wales would it not that have an effect on price in New South Wales if they could not sell outside of the State?

Mr GRUDNOFF: No. If New South Wales were to expand supply all that would mean is that other companies could supply more to the LNG facilities for export. So effectively any gas produced in New South Wales, just via the fact that there is no pipeline directly between New South Wales and Queensland, is going to be consumed in New South Wales anyway. But if New South Wales expands gas then New South Wales has to import less from South Australia or Victoria, which frees up gas to be exported.

The Hon. ADAM SEARLE: There is sort of a cancelling out effect?

Mr GRUDNOFF: Yes.

The Hon. ADAM SEARLE: Without reducing price?

Mr GRUDNOFF: Without reducing price, no. The price is set on the world market once they are linked. The first of the LNG facilities has just come on line over the Christmas period, but once all six trains are on line then effectively the gas market is linked. That is because the demand out of Queensland is twice as large as the entire east coast demand. So we are talking about a massive increase or a massive amount of gas going through that dwarfs the amount that the east coast used to consume.

Ms JAN BARHAM: What is your assessment of the economic modelling that has been done for the Narrabri and Gloucester projects?

Mr GRUDNOFF: The initial assessment—are you talking about the modelling done for the Government to get approval for the project? Is that what you are referring to?

Ms JAN BARHAM: Yes.

Mr GRUDNOFF: The process that they went through is the standard process that they go through. Is there anything in particular about the modelling or are you just talking about the general modelling overall?

Ms JAN BARHAM: Just the general modelling. It is interesting that you made comments about types of models that are used and whether or not they are considered the best possible.

Mr GRUDNOFF: There are a number of different types of models you can use. Broadly there are two: there are I-O models, which basically assume that nothing else changes in the economy—effectively, a new project can come in and there is, effectively, an unlimited amount of resources in the rest of the economy to take up that particular project. That is useful if your project is quite small and it is not likely to have any serious impact on the wider economy, on the wider industry. This is the sort of modelling that is preferred by industry because it makes particularly the employment figures a lot larger than they actually are.

But when you are looking at an industry at the moment that is going through quite a large expansion there is not an unlimited amount of labour resources and we found that generally in these larger resource projects when those projects come in they hire workers and they effectively pinch them from other projects and they also pinch them from other industries; they will take them from other industries that need similar skill sets, like the manufacturing industry. Because of that, the actual increase in employment is nothing like what the modelling would suggest.

Ms JAN BARHAM: Did your submission actually question the numbers that were involved? Maybe it was Lock the Gate that questioned the huge numbers of—

Mr GRUDNOFF: We did not talk about the employment numbers; we do talk about the gap—the supply cliffers, as the industry calls it.

Ms JAN BARHAM: Could you explain why it is that the Asian market is willing to pay so much when they know what the domestic price is?

Mr GRUDNOFF: The Australian domestic price? Because they have got a large demand for it, they have got a large desire for it and at that particular price they are able to make a profit. So they will continue to demand it until such time as the gas price gets high enough that they cannot make a profit from it and then they will stop demanding it.

Ms JAN BARHAM: When we have gone to the existing planning assessment system in New South Wales have you got an opinion of how that functions and how well it delivers an outcome in terms of approval for projects?

Mr SCOT MacDONALD: Point of order: Chair, I realise you have ruled before and you spoke about latitude, but the terms of reference are about pricing. We are going way off the mark with planning, I would suggest.

The Hon. ADAM SEARLE: To the point of order: First of all, it does touch on the issue of supply, and a number of submissions, including Santos's—I cannot remember whether it is AGL—have cited the regulatory maze through which applicants have to go as a constraint to supply. So this witness's view, in fact, all the witnesses' views of the planning system, including the Minister's, about the planning and approval system is highly relevant to the issue of supply. I would be shocked if Government members would want to take a point of order on this question.

Mr SCOT MacDONALD: Can I just mention that The Australia Institute's submission I do not think touches on anything remotely like planning.

The Hon. ADAM SEARLE: Each witness is at large. We can ask witnesses to address issues not addressed in their submission that relate to the terms of reference, and the approval system relates directly to supply.

Mr SCOT MacDONALD: I will be guided by the wisdom of the Chair.

CHAIR: I do not think there is a point of order.

Ms JAN BARHAM: It is a waste of my time though. I just want to know, particularly around the issue about the regulation and the increasing concerns about problems that arise—like the one we saw yesterday—if you have got any opinion.

Mr GRUDNOFF: I think that there are a lot of unknowns when it comes to coal seam gas and there are a lot of concerns, both environmental and health. It is a relatively new way of extracting gas and it is quite a controversial one and I think that while there are all those unknowns then it is completely reasonable for any government to take a precautionary approach to introduce regulation to make sure that this is not going to have long-term costs and long-term impacts that could potentially swamp benefit that the production of CSG might create.

Ms JAN BARHAM: No-one is mentioning the costs of the damage in the future risk.

Mr GRUDNOFF: If you look at the people who are most concerned about coal seam gas they are predominantly farmers, and they are the people who if you stuff the water up are the ones who pay. They are obviously the people that are most concerned and I think that it is reasonable for any government to be concerned about something until it is fully investigated.

Ms JAN BARHAM: Can you advise if anyone has done any wholistic modelling of the impact of large resource projects in Australia?

Mr GRUDNOFF: The Australia Institute has done some modelling, particularly of the mining boom and its effect on the Australian economy. In particular it has looked at what is effectively called Dutch disease, which is when you expand something rapidly and you effectively run out of resources to continue to expand, what sort of effects that has on the other parts of the economy. The effects the mining boom has had on the Australian economy include increased wages for those that do know how to extract resources, which attracts other employment from other industries—it does not expand employment overall. We have also seen a rapid appreciation of the Australian dollar—it got up to about $US1.10—and with the fading of the mining boom we have seen that come back down for that reason.

Ms JAN BARHAM: Just to follow up on that: The broader effects on the economy?

Mr GRUDNOFF: A high Australian dollar hurts exporters, particularly manufacturing, agricultural and tourism, as well as education—universities attracting foreign students. They have been the main industries that have been impacted by the resources boom.

Ms JAN BARHAM: Are any of those broader risks and economic impacts being factored into the wildly enthusiastic debate around why we need to go down this economic path?

Mr GRUDNOFF: In gas assessments or broader?

Ms JAN BARHAM: In gas assessments.

Mr GRUDNOFF: Not that I have seen from gas assessments, no.

CHAIR: You say in your introduction that "mining more gas in New South Wales or elsewhere will have very little effect, if any, on gas price as any additional gas mined will still be linked to global gas prices", yet we have heard evidence here today from Santos, and certainly reading other submissions, and also listening to the Government—AGL have certainly said it and so have Santos—that those gas supplies that will be mined in New South Wales will be reserved for domestic production. Would it not be true to say that that would then increase the pool of available gas in New South Wales?

Mr GRUDNOFF: No, because New South Wales will still, as it always has through its entire history, have to import gas. So consequently any increase in New South Wales' supply can simply mean that less gas is imported from Victoria or South Australia and can therefore be used for export. But even if New South Wales were to—

CHAIR: That is not New South Wales gas you are talking about. I am talking about New South Wales gas, an increase in New South Wales gas.

Mr GRUDNOFF: But if you increase New South Wales' gas supply then New South Wales would import less gas. It would use the same amount of gas because the price is set internationally, so it would still demand the same amount of gas; it is just that instead of importing 90 or 95 per cent of its gas it would import less and that gas that it is not importing would then flow to the export facilities for export.

CHAIR: But we also heard evidence that gas coming from Moomba and other places would still potentially also be available to New South Wales. Would we not be getting a more liquid supply situation available in New South Wales and therefore be able to introduce a bit of competition? At the moment we are a price taker.

Mr GRUDNOFF: Yes, and on the world market Australia will be a price taker. So, consequently, the price is being set internationally and so any additional supply in New South Wales or anywhere else in Australia

the gas producer still has the option: they can sell to New South Wales or they can sell to another State in Australia or they can export it.

CHAIR: What is being said is that there will be a cap for the amount of gas that LNG plants can export.

Mr GRUDNOFF: That is very true. The current six strains of LNG are limited, but there are also plans—just on the drawing board—for further LNG facilities that are twice as large as the current Gladstone facilities. If we were to see a massive increase in domestic gas production within Australia we would see gas producers build more LNG facilities in order to export. If they do not then the gas price would actually fall.

CHAIR: Is that not what we want?

Mr GRUDNOFF: But the gas producers do not want the gas price to fall; they built the LNG facilities so they could sell to customers at a higher price. If they can no longer sell to those customers because they do not have export capacity they will build more export capacity to get that higher price. You heard Santos, you hear the gas industry talk about how horrible it is that the gas price is going up. Let us be serious: they built those LNG facilities so they could put their price up. We live in a market economy and I am sure everybody here accepts that it is completely reasonable that a company should try and sell to people who have the highest price—I am one of those people who thinks that that is completely reasonable. But let us not pretend that the gas industry is shocked or upset that the gas price has gone up—that was their aim.

CHAIR: You also say that New South Wales policymakers could effectively reduce gas prices in New South Wales through reservation policy on gas exports, restrictions on gas exports. Yet you say it is not politically viable. Then you say in the next paragraph that there are a number of other effective policies. Can you tell me what they are because you do not tell us what they are?

Mr GRUDNOFF: The other effective policies are basically policies to help customers cope with the higher gas prices. They are not policies that will lower the gas price—I think that horse has bolted. We are effectively now about to be linked or are partially linked to the world market. I do not think there is a lot that can really be done to stop that. Those are the points I laid out in my opening address, that they can look at ways to help customers shift from gas to electricity, that they can—

CHAIR: Let me stop you there. I thought the general trend was to move away from coal-fired electricity. You are saying that we should be going back to it.

Mr GRUDNOFF: I am talking about switching back to electricity, yes, only in that we are talking about what is best for consumers at this point. Because the gas price is going to increase then effectively things like heating for households, for example, it becomes relatively less expensive to use electricity rather than gas.

CHAIR: I do not see the logic there.

Mr GRUDNOFF: I am merely stating the fact; I am not judging.

CHAIR: How do we address the issue of gas-intensive industry in New South Wales then? How do we retrofit them for electricity when they literally cannot use electricity in their processes?

The Hon. Dr PETER PHELPS: Fertiliser.

Mr GRUDNOFF: Certainly that becomes a lot more difficult and they have a lot larger problems.

CHAIR: You cannot make fertiliser out of electricity; it is just not possible.

Mr GRUDNOFF: Absolutely, and that becomes a lot more difficult.

CHAIR: What you are saying is do not produce more gas in New South Wales, migrate all the manufacturing and all the jobs out elsewhere. How do you propose dealing with retrofitting all the houses in New South Wales?

Mr GRUDNOFF: But producing more gas in New South Wales is not going to lower the gas price and it is not going to make it easier for those fertiliser companies. Once you have linked with the world price—and the Government went through an approval process to approve these LNG facilities and they went through that process and in those assessment processes there were appendixes in there that talked about what would happen to the gas prices—it has been known for quite a long time—and they approved this. This has been coming for five-plus years.

CHAIR: What subsidies would the New South Wales Government have to give to households and business to stay in business, I suppose, and also for households to retrofit back to electricity?

Mr GRUDNOFF: I have not looked into how much they would need to spend. I was merely pointing out what the New South Wales Government could do to help in this situation.

CHAIR: You say in your conclusion that any additional gas mine—and this is what you are hinging on—you are basically saying that any amount of gas Australia will produce will go out inevitably to the world market.

Mr GRUDNOFF: As long as the world price is high, yes.

CHAIR: I do not accept that. The New South Wales Government can do things about it if it wants to.

Ms JAN BARHAM: So can the Commonwealth, can they not? The Commonwealth can restrict.

Mr GRUDNOFF: Yes, they can.

The Hon. ADAM SEARLE: The Commonwealth can simply restrict exports if it wanted to.

Mr GRUDNOFF: I said that in my opening statement, but I do not think it is politically feasible at this time. I cannot see either of the major parties agreeing to that. They may do—I am not a politician; you guys are probably better placed to answer that question, but from my perspective it seems highly unlikely.

The Hon. Dr PETER PHELPS: The Greens could win government. How are you on your micro?

Mr GRUDNOFF: Reasonable.

The Hon. Dr PETER PHELPS: Let us say you have a situation where there is no gas production in New South Wales and you have to rely entirely upon the international price. The price of gas in New South Wales will be the international price, will it not?

Mr GRUDNOFF: Are you talking about the rest of Australia, or are you talking about no gas production in New South Wales?

The Hon. Dr PETER PHELPS: New South Wales.

Mr GRUDNOFF: So Victoria is now international, is that what you mean?

The Hon. Dr PETER PHELPS: You have contended that the price of gas in the market is directly linked to the international price.

Mr GRUDNOFF: Correct.

The Hon. Dr PETER PHELPS: So if there is no gas production in New South Wales supply would have to come from a market that is working at the international price, correct?

Mr GRUDNOFF: Yes, so long as the Australian market is linked to the rest of the world.

The Hon. Dr PETER PHELPS: Let us assume that 100 per cent of our requirement could be met from what might be called the domestic price of domestic gas in New South Wales which could be produced and sold at a price level lower than the international price. If 100 per cent of the production came from New South Wales, the average price in New South Wales would be lower than the international price, would it not?

Mr GRUDNOFF: No. The east coast of Australia when gas was first mined in Australia two centuries ago until now, before it was linked to the international market, supplies the entire market. It is now since we have connected to the rest of the world that the price has gone up.

The Hon. Dr PETER PHELPS: I think you are misunderstanding me. Say, for example, a company decided, on the basis of a commercial decision, that it did not want to export, that it simply wanted a vertically integrated system of gas production which it could sell to customers in New South Wales at a price lower than the international price, that it made a conscious decision not to engage in the international market. If that supplier could then sell in New South Wales then the price would be lower than the international price, would it not?

Mr GRUDNOFF: Correct. A company can sell at any price it chooses to a willing customer. That is how a market economy works.

The Hon. Dr PETER PHELPS: If AGL indicates—as we have heard, AGL has 85 per cent of the market in New South Wales—that it has no interest whatsoever in engaging in international export operations but merely seeks to have an indigenous supply resource in New South Wales which it can use to sell at below world market rates, I am not questioning their decision but that is a valid decision if they want to make it, is it not?

Mr GRUDNOFF: Certainly. I imagine their shareholders would question that decision.

The Hon. ADAM SEARLE: But they would not be prepared to sell it domestically for less than the external market price.

The Hon. Dr PETER PHELPS: They do. This leads to my final point. If a company has decided to do that and only requires 50 per cent of its gas to be imported at international rates but it can produce 50 per cent at below international rates, surely the average cost of that gas resource in New South Wales would be lower than the international market, would it not?

Mr GRUDNOFF: Certainly. If you could find a gas company that was willing to convince its shareholders to take a cut for the sake of its gas customers, then yes, definitely, it would be a lower rate.

Mr SCOT MacDONALD: I go back to your reply to Ms Jan Barham about resources and the impact and I think you said this in your submission. Can I just challenge you on that? I think the RBA put out a good report towards the end of last year. Are you saying that our economy, our country, did not benefit from the resources economy?

Mr GRUDNOFF: No, I did not say that.

Mr SCOT MacDONALD: I thought you did.

Mr GRUDNOFF: No. I said we have done research that looked at the impact of the resources boom on the economy, including the negative impacts. But I did not make any comment on the net impacts of the resources boom.

Mr SCOT MacDONALD: When you say "negative impacts", some industries did better and some did worse for various reasons. Do you agree with the RBA assessment in I think September or October last year that our employment is stronger, our wealth is stronger, and our assets are stronger by virtue of the resources industry?

Mr GRUDNOFF: Certainly, the resources boom—

Mr SCOT MacDONALD: In the macro sense.

Mr GRUDNOFF: In the macro sense, certainly the resources boom has delivered very large benefits to some parts of the economy.

Mr SCOT MacDONALD: And some suffered.

Mr GRUDNOFF: And some suffered, yes.

Mr SCOT MacDONALD: I think we all understand that.

Mr GRUDNOFF: It is called the dismal science for a reason. As economists we can find good and bad in everything.

Mr SCOT MacDONALD: Would you agree that it is difficult for a government? The alternative is to go picking winners. If we choose not to export, effectively you are picking winners. You will say that sector of the economy should be expanding and that sector of the economy we pick not to expand. If we choose not to export we are effectively picking winners and more than likely driving our net wealth down.

Mr GRUDNOFF: Correct.

Mr SCOT MacDONALD: I turn to the last sentence of your submission, which states:

> An effective course of action is for NSW policy makers to protect NSW gas consumers from this inevitable price shock.

Frankly, I do not think anyone disagrees with that. I think we all see that there is a change from a very small domestic industry, with 20-year or 30-year contracts and that sort of thing, to basically being a world parity situation. Again, is that necessarily bad in your view?

Mr GRUDNOFF: It is bad for gas consumers. It is very good for the gas industry. So again it is not that it is good or bad in absolute. It is good for some sections of the economy and it is bad for other sections of the economy. I am sure you have submissions from people who it is good for and you have submissions from people who it is bad for.

Mr SCOT MacDONALD: Again, I am on the same page. If we intervene, we are picking winners. We are saying that the gas industry should not make an expanded contribution to the economy and we will have to protect other sectors, so to speak. It is protectionism.

Mr GRUDNOFF: Are you talking about intervening for businesses or intervening for households?

Mr SCOT MacDONALD: I am talking about industries. If we put restraints on exports, if we put restraints on supply, surely you are effectively engaging in protectionism and picking winners.

Mr GRUDNOFF: Certainly, if you were to do that for industry and commercial interests you are picking winners, and the Government should be extremely careful in any kind of industry policy of that nature. If you are talking about residential customers, then I think the Government has a broader role than just what is necessarily the most economically efficient thing to do. It should consider, for example, poorer households and protecting them from these sort of price increases.

Mr SCOT MacDONALD: You are promoting, as other people have—I think, Lock the Gate—more efficient electrical alternatives to gas use. How do we do that without distorting the length of time, the cost to the general taxpayer? Are you sure in your mind that that would be a net positive for the economy?

Mr GRUDNOFF: If electricity becomes a cheaper option, as it is likely to do for various things like heating or cooking or whatever it might be, and the barrier for lower income households to switching is simply the upfront capital cost, then I think there is a role for government to help them get over that barrier.

Mr SCOT MacDONALD: Reading yesterday or the day before Richard Dennis railing against Queensland contributing $2 billion to infrastructure up there for the resource industry, what is the difference between the Queensland economy propping that up—I am not saying they are but that is his argument—to propping up PV or wind or other efficient technologies?

Mr GRUDNOFF: One is helping households and one is helping industry. While I would be reluctant to introduce policies that protect industry, because in a market economy the main driver is efficiency, households are very different industries. Households have children, households can be low income or high income and there is a different role for government in that. There is no unemployment benefit for an industry.

The industry does not go on unemployment benefits when its demand goes down. We do have unemployment benefits in Australia when people become unemployed. People are very different to businesses.

The Hon. Dr PETER PHELPS: So what you are saying effectively is that we need to subsidise people, government needs to extract money from taxpayers to subsidise people to fix a problem which was created because of over-regulation by government reducing supply in the first place.

Mr GRUDNOFF: I do not accept that over-regulation reduced supply and that is what caused the price increase. I am not quite sure how to answer your question.

The Hon. Dr PETER PHELPS: The state of CSG in New South Wales is a clear example of where impediments to the production and supply of coal seam gas have been absolutely the problem of government.

Mr GRUDNOFF: The price is set internationally so what you are effectively saying is New South Wales regulation has caused the international price to be higher, and I do not accept that.

The Hon. Dr PETER PHELPS: Except New South Wales producers have said they will not operate in an open international market; they want to operate in a closed market.

Mr GRUDNOFF: If you can find a firm that is willing to sacrifice its shareholder funds to boost its customers, you have probably found a firm that will not be in business or a management that will not be in business for very long because those shareholders will not be happy.

The Hon. Dr PETER PHELPS: AGL has been in business for 150 years or so.

Mr GRUDNOFF: I do not know what AGL's plans are or what they are saying they are going to do, but I am fairly confident, given past economic history, that business stays in business when it keeps its shareholders happy. If it wants to sell gas at less than what it can get then it will make less profit than what it would and its shareholders will be very upset at the management and that management will find that it will get voted out.

CHAIR: I think there are structural issues around your basic assumption that all the gas in Australia will ultimately leave Australia on ships through Gladstone to China.

Mr GRUDNOFF: Not all gas would do that.

CHAIR: That is what is underlying your argument in the way you are placing it. You are saying all gas in New South Wales. We listened to Santos say they were not planning on sending any gas north if they developed the Narrabri field. You are saying that ultimately Santos is making a bad economic decision and it will go out of business.

Mr GRUDNOFF: Not at all. Santos is able to sell at the domestic market price.

The Hon. ADAM SEARLE: Santos did not say they were going to sell it for less than the international price.

Mr GRUDNOFF: They are selling to Australian customers at the same price that they can sell to the LNG facility.

The Hon. ADAM SEARLE: They could sell at the international price.

CHAIR: They were inferring that through increased supply of gas in New South Wales inevitably what would happen is the price would go down.

Ms JAN BARHAM: Only when it has reduced costs, when transportation costs are reduced.

CHAIR: No, it was not just reduced transportation costs.

Ms JAN BARHAM: That is all he said.

CHAIR: They also quoted the example of the Northern Territory.

The Hon. ADAM SEARLE: This can all be usefully discussed in our deliberative.

The Hon. NIALL BLAIR: The shift from utilising gas consumption and appliances, particularly in a domestic sense, as you say in your submission, to more efficient electrical appliances—how realistic is it in the current climate, in 2015, to achieve that? Let us talk about the environmental impacts of disposal of all of those appliances. The energy involved, the waste involved in disposing of those, plus the move back towards coal-fired power generation to run those more efficient appliances. Has there been any modelling to back up that that would be a more efficient way to go, or is this solely about you saying that using cheaper electricity in more efficient appliances would, in your economic terms, be a cheaper alternative than consuming gas for residences?

Mr GRUDNOFF: Correct.

The Hon. NIALL BLAIR: How realistic is that? I understand you are an economist and that is great. We can work with the numbers. But can you honestly say that you could ever realistically see that policy implemented in Australia in 2015 in the current political and environmental scenarios that we see across our States, that we could honestly argue for the gas cylinders that supply the gas into my cooker—I do not live in town so I have cylinders—can you honestly say to me that you could prosecute an argument that that is the way we should be going on this State?

Mr GRUDNOFF: I am not prosecuting an argument that we should go either way. I think that when the gas price goes up—

The Hon. NIALL BLAIR: But your conclusion is saying that.

Mr GRUDNOFF: When the gas price goes up relative to the electricity price, consumers will make decisions about switching fuels. Whether you want them to or not, that is the decision they will make. My concern is that if low-income households do not have the ability to put up the upfront capital costs, the Government might want to consider—

The Hon. NIALL BLAIR: So we should be subsidising them to go down a path that environmentally could be a lot more detrimental than the current situation of consuming gas, be it coal seam gas or traditional gas?

Mr GRUDNOFF: Are you talking in terms of greenhouse gas emissions?

The Hon. NIALL BLAIR: Yes, or even the disposal of those appliances? The energy costs—

Mr GRUDNOFF: I completely agree it is an unfortunate situation but the gas price is going to the export parity price. We have made decisions; we have gotten to this point—

The Hon. NIALL BLAIR: The last witness talked about the cost per 1,000 kilometres—

The Hon. ADAM SEARLE: A dollar—

The Hon. NIALL BLAIR: A dollar a gigajoule?

The Hon. ADAM SEARLE: Was it gigajoule or petajoule?

Mr GRUDNOFF: Gigajoule.

The Hon. NIALL BLAIR: Have you factored that into your modelling?

Mr GRUDNOFF: I have not done modelling—

The Hon. NIALL BLAIR: Transportation costs?

Mr GRUDNOFF: Transportation costs—it is true that there will be variations in price regionally. So if you are close to a gas field you will get it a little bit cheaper than people who are a long way from a gas field.

The Hon. NIALL BLAIR: No, you said we will be linked to the international price.

Mr GRUDNOFF: That is correct.

The Hon. NIALL BLAIR: But if I am next door to the gas field where it is being produced—this is a contradiction—you are saying we will be linked to the international price?

Mr GRUDNOFF: Correct.

The Hon. NIALL BLAIR: Now you are saying we will not be linked to the international price because if you are closer to it you will get it cheaper?

Mr GRUDNOFF: Sorry, I said we would be linked to the international parity price, which is the international price minus the cost of transportation.

The Hon. ADAM SEARLE: So the variation.

Mr GRUDNOFF: The variation. The increase in price, the doubling or tripling of wholesale gas prices, the big effect is happening because we are exporting overseas. There might be small variations—

The Hon. NIALL BLAIR: In New South Wales we do not have the infrastructure, one because we are only producing out of Camden at the moment?

Mr GRUDNOFF: Yes—

The Hon. NIALL BLAIR: So we cannot export that to other States.

Mr GRUDNOFF: —which by the way is the only place that New South Wales has ever produced gas.

The Hon. NIALL BLAIR: I understand that.

Mr GRUDNOFF: We used to export 100 per cent before that. New South Wales has always exported the vast majority of its gas.

The Hon. NIALL BLAIR: Exported?

Mr GRUDNOFF: Sorry, imported the vast majority of its gas. It has always paid that transmission price.

The Hon. NIALL BLAIR: Thank you, you have reiterated my point. Let's say that we wanted to try and get the gas that we are producing at Camden into the international market; how do we do that?

Mr GRUDNOFF: You would not because you have got customers close by, a large base like Sydney. Instead, you would put Mumbai gas into the LNG facilities.

The Hon. NIALL BLAIR: Would those customers then be paying the international market price that you are talking about?

Mr GRUDNOFF: Effectively they would pay the market price, which is determined by the international price.

The Hon. Dr PETER PHELPS: Assuming that AGL does not want to undercut the market price?

Mr GRUDNOFF: Yes, assuming that AGL does not want to undercut the market price.

CHAIR: We will stop at that juncture. Thank you for appearing before the Committee this morning.

(The witness withdrew)

(Luncheon adjournment)

TIMOTHY FORCEY, Energy Advisor, University of Melbourne Energy Institute, affirmed and examined:

CHAIR: Would you like to make an opening statement?

Mr FORCEY: Yes, I would like to make an opening statement as well as table two documents, which I will refer to as I go through my opening remarks. The first document is a copy of the Melbourne Energy Institute report and the other is a list of what I call exhibits.

Documents tabled.

Thank you for the opportunity to present research by the University of Melbourne Energy Institute examining the future of gas demand in New South Wales. For a few years the Energy Institute has published leading analysis of electricity demand and today most of us are familiar with the surprises that came from that sector. For decades Australian electricity demand seemed to rise directly with increasing population and economic growth. Business-as-usual forecasts persistently indicated continuously rising demand for electricity; however, starting in 2009, instead of rising, the demand for grid-supplied electricity across eastern Australia began to fall—a trend that continues still. Dollars were spent and infrastructure built that is now underutilised. Electricity demand fell for many reasons, including increasing prices, the economic availability of new technologies, and energy efficiency and greenhouse gas reduction initiatives.

The Energy Institute analyses not only electricity but also gas and what we observe about gas particularly in New South Wales looks similar to what happened with electricity. Today we present a scenario where gas demand in New South Wales does not continuously increase with population and economic growth but, rather, over the next 10 years New South Wales gas demand falls to half of what it has been in recent years. This is not a forecast rather a scenario but a possible future outcome that stakeholders should consider versus business-as-usual forecasts. To develop this projection we undertook the most detailed examination of New South Wales gas demand that has so far been published. We present our own insights, many of which build on the work of others. If Committee members refer to exhibit one, they will see a list of 32 organisations whose recent work our report comprehensively brings together.

Our detailed examination divides New South Wales gas demand into the 11 categories listed in exhibit two. Though sometimes limited by the availability of public data, we went into as much detail as possible within the buildings, manufacturing and electricity generation sectors. Our report describes what could happen in each of these 11 demand categories but I only have time to tell members about the highlights here so if I refer members to exhibit three, which is figure one in our report. It shows fossil gas demand aggregated for the manufacturing sector in green, gas used in buildings in red, and gas used in electricity generation in blue. Historical gas use is shown over the last 14 years and projections plotted for the next 10 years. There is also a black dashed line, showing a business-as-usual forecast, which is derived from information published by the Australian Energy Market Operator at the end of 2013—they have just updated it.

First, let us consider the blue columns on the top: gas used in electricity generation. Most commentators agree that burning gas to generate electricity in New South Wales will rapidly fall away. This is because rising gas prices make gas uncompetitive with coal for electricity generation. Even a future carbon price would not bring gas back into this market. The renewable energy target and falling electricity demand also erode the former position of gas in this sector. Next, the red bars show gas used in buildings. This falls away too. Like electricity generators, businesses and residents using gas in buildings do not have to accept rising gas prices because they have cheaper options today. These options, some of which are pictured in exhibit four, come in the form of modern, highly efficient electrical devices such as heat pumps and induction cooktops.

Our report refers to recent work by the Alternative Technology Association [ATA] that found that today some residents of New South Wales could immediately see an economic return and save thousands of dollars by buying a reverse cycle air conditioner and shutting off their gas heater. I have personal experience with neighbours and acquaintances in Victoria disconnecting from the gas grid—the ATA found that disconnecting is even more economic in New South Wales. The ATA report also sees no economic need for any new homes or suburbs anywhere in eastern Australia to be connected to a gas grid. So this raises the question of whether we need two grids: electricity and gas reaching though our suburbs. As we saw with the uptake of solar PV and LED lighting, public and business awareness will grow as the appliances pictured in that exhibit are more widely marketed and also as people see their gas bills increase.

Lastly, let me address gas used in manufacturing, which in exhibit three is represented on the graph by the green bars. As in the other sectors we project gas use to decline. Rising gas prices will drive some gas-intensive businesses out of business and cause others to scale back on their use of gas either by improving energy efficiency or by switching fuels to electricity bioenergy, and even back to coal. So to summarise, please now refer to exhibit five. There we list the traditional things that increase gas demand: population and general economic growth and successful marketing of gas appliances.

Also, the electricity price shocks we have seen over recent years caused some consumers to think that gas might be a cheaper option. But gone is the carbon price that could have driven gas to partly displace coal for electricity generation. However, the second part of exhibit five shows that there are far more factors that will reduce gas demand in New South Wales. Of prime importance are rising consumer gas prices. LNG exports have and will continue to cause wholesale gas prices to increase and, just as importantly, transmission and distribution charges, which in many cases make up the largest part of a consumer's gas bill, have gone up as well. These charges will spiral higher as some gas customers disconnect, leaving fewer and fewer gas customers remaining to bear the cost of gas network maintenance and operation—some call this the gas death spiral.

Other important factors that will reduce fossil gas demand are energy efficiency measures such as building insulation, progressively warmer New South Wales winters, community concerns about the environmental and social impacts of unconventional gas production, programs to reduce the gas leaking from distribution pipework, and even gas-related health and safety concerns such as the risk of carbon monoxide poisoning in the home. This ends my opening statement. We hope our research leads to decisions that drive the best outcomes for the people of New South Wales.

The Hon. MICK VEITCH: At the top of page seven of the report entitled "The dash from gas. Could demand in New South Wales fall to half?" it talks about some things the Federal and New South Wales governments and local councils could pursue to ease the transition to higher gas prices. I would like to explore a couple of those—for example, the last dot point: "reduce infrastructure costs by rationalising the gas grid where economically advisable". Will you explain how you see that operating?

Mr FORCEY: That one would be speaking to understanding where gas is being used and if customers do come off those opportunities are taken to rationalise and reduce costs. There is a big gas grid out there and if it can be reduced, if customers do come off then that would be a cost saving.

The Hon. MICK VEITCH: The third dot point: "remove subsidies that encourage uneconomic expansion of the gas grid"?

Mr FORCEY: As I understand it, and here I am relying on information reported by the Alternative Technology Association and the Grattan Institute, for example, governments have generally and historically supported the expansion of the gas network, and still do so. We do see signs in Victoria—where I come from—of the Victorian Government expanding the gas grid. What this report from the Alternative Technology Association is saying is that there is no economic reason now given the new technologies that exist with these heat pumps etcetera—when I say "new" they had heat pumps in America in 1970 when I was there but the efficiency continues to improve to such an extent—and given the improving efficiencies with these technologies that are now on the market and the rise in gas prices these reports, in particular from the ATA and the Grattan Institute, are seeing no economic value for expanding the grass grid into further suburbs. So there will be an opportunity for savings there if those prevents were looked at and their economic benefit.

The Hon. MICK VEITCH: Can you tell the Committee what the factors have led to the so-called over investment in the gas network infrastructure?

Mr FORCEY: I suppose when I speak of infrastructure I might be talking about anything that has gas in it. One case in point would be gas power stations for generating electricity. On that chart that I presented that is the blue uptake where there is a big increase in the use of gas for electricity generation in New South Wales—power stations at Uranquinty and Tullawarra, and maybe even Smithfield if you go back a bit. Those power stations were built for probably maybe three reasons: they thought gas was going to be cheap, they thought electricity demand was going to go up, and they thought we might be interested in some greener options compared with coal.

What has happened now is gas is not going to be cheap; electricity demand is not going up, it is going down; and the carbon price has gone so the interest in greener options might not be as high as what the folks

who made those decisions had in mind. Those investments were built and they have been underutilised. I understand the recent sale at Colongra was recently purchased by Snowy Hydro for about half the price that was published when it was constructed. So that is one example of gas infrastructure that is not terrifically highly utilised. The other concern would be to the extent that the gas grid gets pushed out into future places, if it is not used very much then someone is going to have to pay the cost for that.

The Hon. ADAM SEARLE: Your report forecasts a potential halving of demand for gas. The Australian Energy Market Operator also has a gas forecasting report. It does forecast a decrease in consumption over the medium term and very little increase in even the medium and longer term. Why are your predictions so much more dire? Why is your assessment of future demand less than the market operator?

Mr FORCEY: On the graph that I handed out as an exhibit and also in figure one I do have a black dashed line at the top, which was AEMO's forecast that was published just as a spreadsheet—back then they did not even do national gas forecasting of reports. At the end of 2013 it was a spreadsheet and if you dug in there you could find these numbers. That is what plots out there. We have not had time to update this report to show the latest AEMO national gas forecast that was produced I think on 17 December.

The Hon. ADAM SEARLE: I think I only have the October ones.

Mr FORCEY: But I did go through there and look at what they had in the past versus now—I do not think AEMO publishes the old versus the new forecast—but I dug that out and around the year 2019 or thereabouts AEMO has reduced their forecast by 17 per cent. So if they do that a couple more times they will be coming pretty close to what we have got here in this University of Melbourne scenario. Why is it so much different? Even AEMO is a bit inconsistent in what they publish because they publish electricity planning information and there they are really saying that there is not going to be much gas used for electricity generation.

The Hon. ADAM SEARLE: So their gas forecast is an add-on?

Mr FORCEY: They have not really reflected that, even in the recent gas publication.

The Hon. ADAM SEARLE: Okay.

Mr FORCEY: I do not know what the reasons are for that, but if I look at their electricity stuff they are saying no gas for power generation, which would bring their forecast down even further. They do talk about things like this recent work by the Alternative Technology Association [ATA], which just came out in October. To be fair to AEMO, they did mention in their report, "Oh, we see that stuff. We will have to take that into consideration in the future." They are not taking on board some of the things that we have seen or what we looked at.

The Hon. ADAM SEARLE: Is that simply because of when their material is published?

Mr FORCEY: Yes, that is right. They said that they will take a broader look at things next time round. There will be another such forecast from AEMO, I guess, about in a year's time, so probably towards the end of this year.

The Hon. ADAM SEARLE: And they only update it once a year?

Mr FORCEY: That is what they normally do. I suppose pressure can be brought to bear to have different things done.

The Hon. ADAM SEARLE: What has been the historical accuracy of their demand forecasts? Some of the submissions we have received suggest they have not in very accurate and have overestimated consumption.

Mr FORCEY: Electricity is falling and still there were these business-as-usual forecasts. It fell again and there was still the business as usual. The track record in electricity was not good. You take things like photovoltaic [PV]. It was only a couple of years after we started to see PV panels quite widely on the roofs of homes that AEMO started to write some special reports on PV and to take that into account, so I would expect that things that ATA is saying about heat pumps and things and that I or the University of Melbourne Energy

Institute is saying about heat pumps, AEMO will take that stuff into account. But maybe they will wait until they actually see it happen in the marketplace to a significant extent.

What I would recommend to this Committee is that you ask whoever is involved with producing gas scenarios or projections, like AEMO, that they look and a range of scenarios. I mean it is nice to get just one answer from a crowd like AEMO, but the world is not really that simple. A few different scenarios could be looked at. Okay, we will not assume that anybody switches to a heat pump. Hey, let us assume that a lot of people switch to a heat pump. What is the difference? Just try to understand what is important.

The Hon. ADAM SEARLE: Do you think AEMO is sufficiently independent, or do you think it is sort of quite heavily influenced by, shall we say, the industry stakeholders, or do you not have a view?

Mr FORCEY: Or should I say a view? Here today I am really mostly meant to be reporting on this report.

The Hon. ADAM SEARLE: Sure.

Mr FORCEY: But I did work for AEMO for two years.

The Hon. ADAM SEARLE: Okay. That is worth knowing.

Mr FORCEY: I think that what I saw going on was that if stakeholders had an interest, they could communicate with AEMO and try to see some things happen, so they were open to stakeholders communicating with them.

The Hon. ADAM SEARLE: Gas companies would have an interest in talking up the public acceptance and use of their product, would they not?

Mr FORCEY: There are Santos' gas companies and there are folks who sell gas heaters who are also part of the gas—

The Hon. ADAM SEARLE: Family?

Mr FORCEY: Business. One of the things that the ATA talks about is that there are mistruths out there. If you are buying a gas heater, you will go onto a website and it will say, "The most efficient way to heat your home". Not technically correct. I am not an expert on the Australian Competition and Consumer Commission [ACCC] and other things like that, but there are regulatory authorities, et cetera. One of the ATA's recommendations is that we get more truth out there amongst that sort of advertising, but then there also could be a role for government and other organisations to get information out to people so that they can understand the economics of what the ATA is talking about.

The ATA is saying that—I think there was the example before if you are living with LPG—there are thousands and thousands of dollars that the ATA is saying you could be ahead, if you switched. LPG obviously is more expensive than gas off the grid and certainly you should be looking at the heat pumps for hot water, heat pumps for heating your home, a reverse-cycle air-conditioner and an induction cooktop, or whatever, and you could potentially be saving thousands of dollars. People do not know that yet. This report just came out. I think we all have a lot of work in front of us to try to get some information out to people.

Actually, I took a quote from the New South Wales Government's website and put it on page 12 where it talks about an air-source heat pump water heaters—"… are highly efficient, using around 70 per cent less electricity than other electric water heaters " but it does not compare them to gas—and then it explains how they technically work similar to a fridge. So there is good information on the New South Wales Government website and we probably need a bit more of that.

Ms JAN BARHAM: Can you elaborate on the factors that will influence a decline in demand in terms of the annual fossil gas demand that you have spoken about?

Mr FORCEY: Yes. I think I have probably talked about gas for electricity generation enough. On the industry side, yes there are three things. I think inevitably there will be some businesses close. Say you are not terribly profitable right at the moment: if you are a big gas user, that is a big part of your bills. When gas prices

go up, there will be some companies that will close. I think that is going to be inevitable. We might actually see more stories in the news about that than we ever saw when the electricity side when electricity prices went up. I do not know there was a single company that said the electricity price was their number one reason for why they—

Ms JAN BARHAM: There have been a few stories and I think it has been interesting that they have not had much attention.

Mr FORCEY: Yes, okay. I think there will be more. I am not here to talk about gas prices. We are looking at what the commentators are saying. Also, prices double and triple and then we also see higher prices on the distribution of gas as well. That will be one thing that will happen—some businesses will close, so gas demand will go down. That needs to be taken into account. But that is basic economics. The price goes up and so some demand is going to be going down either for that reason or another reason, which is the energy efficiency of course.

There have been the energy efficiency opportunity programs and other things—and I think New South Wales is still running some of those—and you will find that some companies identified some actions and took some actions, but with other things they looked at they could not make the economics work and so they put it on the table. On ours, they see your gas prices going up and the economics to make an energy-efficient modification, that might make sense for them and so they will do this, thanks. The other opportunities are fuel switching—not necessarily for everybody, not necessarily for BlueScope Steel—but there will be other crowds out there they can use a heat pumps for some for their heating, they could be looking at bioenergy and—

Mr SCOT MacDONALD: Coal.

Mr FORCEY: And there will be some that will switch back to coal. That is going to happen. There would have been companies that spend a lot of money on fancy gas co-generation facilities and it will be cheaper to go back to coal. It is going to happen. And then the—I do not know if I had any other reasons, so there are three reasons why industrial demand could go down. On the residential, we talked about heat pumps a bit.

Ms JAN BARHAM: Yes, the heat pumps we have heard before—that comment about it.

Mr FORCEY: But any home energy improvement, like ceiling insulation, is going to reduce gas demand. There still seem to be quite a lot of Australian homes that do not have, say, just ceiling insulation. That sort of stuff continues to get rolled out and is recommended on the New South Wales Government website for people. That is good to see.

Ms JAN BARHAM: I am hoping to identify that there is not great information out there in terms of comparative analysis and choices for people for residential purposes, and it sounds, likewise for industry, that it might be the case as well. Is that right? I mean, why are they not new businesses?

Mr FORCEY: I think the New South Wales Government website even has case studies from certain businesses and some of those energy-efficiency things, so that is probably pretty good. We do refer to a report that will be issued some day by IT Power for ARENA, the Australian Renewable Energy Agency. There is a table back in there where they have done a lot of work looking at industry and saying, "What sort of heat do they need?", because not all heat is created equally.

There is 150-degree heat and there is 2,000-degree heat so they did a lot of work to look at the different industries and to look at the levels of heat that they use. Then they identified that there is low-level heat for which you might be able to do with a heat pump or you could do with bio-matter or something like that, or even low-level geothermal. That is an excellent report that has not yet been published. There was an early review of it at a conference and that is where I got my information as well as from talking to the folks involved, but that will hopefully be published out of ARENA soon, some day.

Ms JAN BARHAM: Do you think that gas demand in New South Wales is being overestimated?

Mr FORCEY: It certainly was with AEMO from a year ago and now they have reduced it 17 per cent, which is moving in the right direction. We see your scenario not as some extreme, crazy, how-low-can-you-go sort of thing. We did not aim for 50 per cent. A lot of our assumptions on these things pull from the other

resources, whether it is Deloittes or the IT Power thing I just mentioned, or whatever. We put those numbers in there.

Coincidentally, it came out as 50 per cent—nice round number—but you could come up with scenarios for a lot lower numbers if business has difficulties. One point was made about gas for feedstock. On figure 5 on page 10 of our report, we actually do break out the methane that is used by Orica for fertiliser manufacturing. You can see that it takes about seven petajoules a year, which is like about 10 per cent of all the gas used in industry and so therefore it is a smaller fraction of all the gas used in New South Wales. But we do not show any decline in that, for example.

Ms JAN BARHAM: That is constant, is it not, across that graph for the last 12 years?

Mr FORCEY: It is just constant across, so that is one thing we just assumed did not change. That is the gas they use for feedstock. There is an equal amount they use as fuel. If anything happened to those major chemical facilities, then you could see gas demand of course at less than 50 per cent, or there may be a more aggressive uptake of any of the different parameters we have looked at. It might move faster. Hot water is an interesting one. It looks like a lot of people switched probably from the off-peak electrical hot water in New South Wales to gas so you see an increase in the use of gas for hot water. You could just kind of see that stop if people had the right information because the best economic option is the heat pump now, or solar. Solar is good in New South Wales—better in New South Wales than it is in Victoria, for example. You could pretty much see that sort of switching to gas hot water stop.

There was a question about retrofitting homes. We are not saying that you could run out and do this next year. We took a 10-year outlook and we looked at how long do these appliances last—10 years, 15 years? We assumed a 5 per cent changeover rate over time, which means that you would change them all over in 20 years or something. We are not saying run out and do it tomorrow or necessarily before they are worn out, but actually the ATA says there are some cases where you might even throw out something that is only five years old. LPG would be a good example, if you have the opportunity to move on to a heat pump. The thing about reverse-cycle air-conditioners is that they are not only heaters but also they are air-conditioners. We just put one in because we needed better air-conditioning at our house. This winter I am going to be testing it versus the ducted gas and possibly publish a paper.

Ms JAN BARHAM: Personal experience.

The Hon. NIALL BLAIR: Tax deductible.

Mr FORCEY: Ah! I will have to keep receipts.

CHAIR: I suppose your primary assumption or your primary driver for the decline in gas consumption is going to be the move to, effectively, world parity pricing.

Mr FORCEY: That is an assumption going in, absolutely.

CHAIR: And that that is going to continue Did you factor in, or did the studies you looked at factor in, any sensitivity for the fluctuation of international pricing of gas?

Mr FORCEY: I have not really seen that, no. There are a lot of studies on pricing. I think our initial one cited about eight different references that are out there, if you want to read Asel Tasman, Sinclair Knight Merz [SKM] or whatever.

CHAIR: No, I do not.

Mr FORCEY: No. Obviously this crude oil thing has caught everybody by surprise, but what impact it will have on gas prices, some folks will be commenting on that. We did not look at that.

CHAIR: That is an interesting interface, is it not, the price of oil and non-traditional sources of energy, especially the United States.

Mr FORCEY: Yes.

CHAIR: It is very interesting. You talk about the falling cost of alternatives to gas also which will lead to decline in gas demand. What are those alternative energy sources? Which ones are falling?

Mr FORCEY: Here is one, solar-PV, for example. I was at a lady's house on the weekend and she had just disconnected from the gas grid. So how did she do that? She bought a three kilowatt PV system, and the cost of those is going down. There was just an advertisement on the television last night that it is like 70 cents a watt or something, which is amazing. What has that got to do with hot water or gas? Okay, so what she is doing is, as soon as the sun comes up, that clicks on her hot water heat pump, which heats her water. She is using solar energy to heat her hot water but it is not the traditional sort of solar hot water people are used to seeing. Then of course as soon as the water is heated up, she has her rest of the day to use that solar for other things. Maybe she is going to buy an electric car next, I am not sure.

Certainly I understand that in New South Wales the feed-in tariffs will be coming down for solar so there will be a lot of people saying, "I'm not getting much money for that solar. What can I do with it? I can heat my water using an efficient heat pump." I will say this in case you did not pick up on those pictures that went around. The way the heat pump works and why it is so efficient—it is not like a wall heater you see on the wall in a church or something like that. It is a heat pump, which means it pumps energy from the outside world to where you want it. It existed in America in 1970 but they were not that efficient back then.

They work a lot better in the Australian or New Zealand climate than they work in New York. Of course it uses electricity to run the compressors and the pumps, but the water heater is able to grab 3½ free units of renewable heat from the outside air and use that to heat the water. That is making it many times more efficient than the old-fashioned type of electric water heater and the same thing for a reverse cycle air conditioner or heat pump.

I have just purchased the seven star—there is one seven star. It means it is the highest rating unit on the Australian market and it is able to grab five units of free renewable heat from the outside world for every one unit of electricity that I have to pay for to heat my house. Today in Australia you get renewable energy certificates for a hot water heat pump so that is recognised and accepted. In the United Kingdom you actually get renewable energy certificates for reverse cycle air conditioners to heat your place. That is not the case in Australia.

CHAIR: I suppose the assumptions underlying these studies are that all of these substitutions for energy sources are equally interchangeable? Yes? No?

Mr FORCEY: Substitutions for energy sources? Everything will have its place.

CHAIR: That is right.

Mr FORCEY: Like the industrial study, I was saying you will not use a heat pump to get to 2,000 degrees. Everything will have its place.

CHAIR: Okay.

Mr FORCEY: It is hard to put a heat pump in an apartment because they need to be able to have the outside heat exchanger, the big fan so it can suck the heat from the outside world. If you are in an apartment, you might be stuck having a very inefficient electric heater, so you would probably use off peak to get cheaper rates.

CHAIR: As far as New South Wales is concerned, if the sort of scenario you are painting is correct, do you see a net increase in industry and jobs in New South Wales or a net decrease?

Mr FORCEY: The only thing I can say is that rising gas prices will probably cause some business somewhere to shut down.

CHAIR: You are not going to feed into the preservation of jobs with your substitution scenario?

Mr FORCEY: Those jobs will be lost. You could talk about what other opportunities there are for the centre of excellence on photovoltaic-fed [PV] heat pumps. A lot of people will use their brains to come up with other businesses. Who would have thought the PV business would be the size that we see today. Bioenergy. The

last part of our report talks about the City of Sydney study. It looked at a certain radius around Sydney and said how much bioenergy is out there and they were not chopping down all the forests or anything. This is municipal solid waste. You have gas that you can get from landfill and sewage treatment plants. They added all that up. It is a huge amount of gas. Is it 50 petajuoules or something? They are using biogas in Denmark and Germany now because the price is right and maybe also they do not like the Russian gas for some reason.

You talk about diversifying energy sources. Bioenergy is something that Australia could be fantastic at because there are a lot of crop residues that can sustainably be converted to bioenergy. That is something people are looking at. City of Sydney looked at it really thoroughly. There would be heaps of jobs in that if the economics turn out to be right. The Melbourne Energy Institute was looking at some research. You asked if fertilisers could be made from electricity. Yes, they can. You can make fertiliser from air, water and electricity. That is all renewables-based. The Japanese are very keen on that. I think they are doing some research at the University of Melbourne as to how can we use renewable energy to make the hydrogen and the ammonia that is then your fertiliser. You do not need fossil fuels for that. Sure, it is a cost issue.

The Hon. Dr PETER PHELPS: Thanks very much for the paper. It is very good. Is this a prediction or is this a scenario?

Mr FORCEY: It is a scenario. It is an upfront and clear scenario.

The Hon. Dr PETER PHELPS: The a priori assumptions that you make for this scenario may well not come to pass.

Mr FORCEY: Yes. Any scenario, any forecast has that problem. The further into the future you are forecasting, the trickier it becomes.

The Hon. Dr PETER PHELPS: Let us change one variable in the expected decline in demand. Let us say that the wholesale and retail gas prices do not rise by a significant amount or stay the same. The decline in demand, which is largely driven by price, which you predict, would not come to pass, would it?

Mr FORCEY: If the prices do not go up, those changes that are driven by prices going up would not happen.

The Hon. Dr PETER PHELPS: You state here that the primary motivation is an expected significant increase in wholesale and retail gas prices.

Mr FORCEY: Yes.

The Hon. Dr PETER PHELPS: So all the additional dot points are, if you like, additional factors but the primary driver of this decline in demand in your scenario is the significant increase in wholesale—

Mr FORCEY: It is absolutely huge. What else has changed? Technology changes are important. Warmer winters are happening; that is important. Community concerns may drive them one way or the other, not strictly on economics. All those things are important. We have not separated out what part is just price. I guess one thing we are recommending is perhaps there are a set of scenarios that the Government would like to see that should be drawn up with whatever assumptions and then have somebody try to give you a range of scenarios and then you would have a better view of the world and be able to try to understand what is important.

The Hon. Dr PETER PHELPS: It is possible that the Australian Energy Market Operator's [AEMO] extrapolation could be correct if its assumptions were to come to form?

The Hon. ADAM SEARLE: Which still predict a significant decline in demand.

Mr FORCEY: Yes, the latest AEMO ones are 17 per cent lower. As I said, 2020 versus the black dash line. I suppose I have to study in a lot more detail the stuff that got published on 17 December. Then again, I probably would not be surprised to find that not all their assumptions are laid out there. They do surveys of companies and they are able to access some confidential company information that we do not have. They are not necessarily able to publish everything they have got there. Yes, there is a—

The Hon. Dr PETER PHELPS: Could I postulate an alternative scenario, that being that there is a large-scale commercial expansion of liquefied natural gas [LNG], coal seam gas [CSG] activities in New South Wales, which is able to feed into if not a majority at least a substantial bulk of the New South Wales domestic market, thereby decreasing the reliance upon gas bought at international parity pricing. In that scenario, would the price, if not reduced back to current levels, at least be significantly reduced compared to a situation where you had to rely entirely upon international parity priced gas?

Mr FORCEY: We just looked at the price levels, so prices are doubling or tripling. It would be interesting to do that study and to try to separate out the various factors: how much is warmer winters, how much is technology changes, how much is community attitudes.

Mr SCOT MacDONALD: Does the institute look at energy poverty, energy accessibility and affordability?

Mr FORCEY: The University of Melbourne does and the Melbourne Energy Institute brings that in as well. Certainly we have folks that work in energy poverty.

Mr SCOT MacDONALD: Can you make any comment about how that has been tracking over the past few years?

Mr FORCEY: No, not the area that I looked at and it is not in a report.

The Hon. ADAM SEARLE: The best you can do is ask him to take it on notice.

Mr FORCEY: I am sure there are others at Melbourne uni that could help you out.

Mr SCOT MacDONALD: There is quite a lot in your submission and someone else's about fuel switching. What has been the Australian experience with fuel switching? You make the argument that there is probably no need for any future housing developments to be part of the gas network, and things like that. What is our history and track record of fuel switching?

Mr FORCEY: Like I say, I think one of the reasons we are seeing gas for hot water growing—that is one of those bars there—is because people used to be heating their hot water with the off-peak electricity. The whole government set-up with assistance or subsidies or programs changed and maybe people were looking for greener alternatives, so they thought gas would be greener than coal. I think there has been a big switch away from the off-peak electricity to gas. Yes, it seems like fuel switching can happen if people have a reason they think they could or should switch. Appliances do run out or wear out after 10 or 15 years.

Mr SCOT MacDONALD: I guess I am asking—and you started to answer it—is fuel switching relying on government largesse, programs, grants, subsidies, rebates, or whatever?

Mr FORCEY: I suppose in the past sometimes it has. What these reports are saying is that the economics make sense now and it may just be better information and knowledge for people to know what the alternatives are and not erroneous advertisements by certain suppliers.

Mr SCOT MacDONALD: If we had to make a recommendation, maybe we should touch on the accuracy and have a better understanding or more information about what is the best way to cook or heat or to consume it at home. I am interested to see the urban heat island effect.

Mr FORCEY: I probably picked that up from Jemena, your gas distributor, operator gas system. Maybe I did. Anyway, they had a consultant like Core Energy do a lot of work, because Jemena always has to resubmit for whatever tariffs they will be eligible for. There is a heck of a lot more information out there.

Mr SCOT MacDONALD: Coming out about the urban heat island effects?

Mr FORCEY: Yes. I will come back to that—I will do that first. I think I probably got that reference to the Core Energy work where they might have made an assessment about the warming winters and then the urban heat island effects. Sure, as areas get more built up—

Mr SCOT MacDONALD: Dense.

Mr FORCEY: —as people tend to live in built-up areas, then we all keep each other warm with the concrete. The point that you reminded me of about Jemena, sometimes you run into a place where you cannot get the data because it is confidential, or only the AEMO has the power to get the data. There are other places I saw, such as data published from Jemena was huge. Suburb by suburb, people can get in there and do a heck of an analysis and try to understand what is happening.

Mr SCOT MacDONALD: About energy?

Mr FORCEY: Yes, about how much gas is used in this suburb, et cetera. Some consultants have tried to use that with certain statements such as, "Yes, the number of new connections continues, but people seem to be using less per connection than they used to." That is really interesting.

Mr SCOT MacDONALD: Do you think that affects the balance of fixed charges and usage charges?

Mr FORCEY: Absolutely. As the volume goes down—

Mr SCOT MacDONALD: You need clear price signals and price transparency for people to make those sorts of decisions, such as the true cost of the network, understanding what that part of your bill is?

Mr FORCEY: The lady who disconnected on the weekend, she had really pretty much eliminated her gas use and was wondering what was still on the bill. I said, "That is your fixed charges." They had gone up from 50¢ a day to 62¢ a day. That is a 24 per cent increase, thank you very much, on 1 January, for fixed charges. She said she would ring up the gas company straightaway and disconnect.

Mr SCOT MacDONALD: Yes, that is an increase but is that a more accurate reflection? In the past was there some cross-subsidisation?

Mr FORCEY: I have not studied that area yet to fully understand the tariffs in Victoria and other places as to how they are being set.

Mr SCOT MacDONALD: Urban heat island effect screams out Marrickville to me.

Mr FORCEY: It probably comes from a top energy industry consultant.

Mr SCOT MacDONALD: I am thinking of a particular suburb that is very good at telling other people how to live—while generating a lot of heat—without trees or parkland, environment.

The Hon. MICK VEITCH: You have to stay away from geographic discrimination, Scot; it is going to do you in, mate.

Mr SCOT MacDONALD: Thank you.

The Hon. NIALL BLAIR: You made a comment that no-one saw what is happening with fuel prices or oil prices. Do you want to expand on the impact that a very low oil price versus a high oil price is going to have on some of these scenarios that you are looking at?

Mr FORCEY: No, only blue sky because I think we will see any number of the consultants get stuck into this and a lot of stuff is published. You might say oil prices have gone down, therefore, gas will remain cheap and try to construct a scenario like that. But you can also construct the other one, which is it does not make any difference. In the LNG industry, there are long-term contracts, et cetera, some linked to oil, but maybe not. I will leave it to others. There will be a heck of a lot of money spent picking this one apart. You will hear both stories. You will hear it said that it will decrease gas prices in one and that it will not make any difference.

The Hon. NIALL BLAIR: Is the point more the difference between the two, the sweet spot? I know an irrigation farmer, for example, who has large gas cylinders as well on his pump sites. He knows when diesel is at a certain price and when gas is at a certain price. He can flick between the two or he can blend the two together to maximise the output and minimise costs. I am heading down another path here.

Ms JAN BARHAM: No solar?

The Hon. NIALL BLAIR: You cannot get a solar system big enough to run a big diesel motor like that efficiently enough to get the returns you need. It is the same as windmills versus solar arrays. Many farmers would love to go to solar arrays, but they do not generate enough energy to lift the water to the height and in the volumes they want.

Mr FORCEY: There was an ad for very cheap solar systems on the television the other night. But the price of oil and therefore the price of diesel has gone down, so solar conversions are probably going to be put off for a while.

CHAIR: Thank you very much for appearing today.

(The witness withdrew)

TIM NELSON, Head of Economic Policy and Sustainability, AGL Energy Limited, affirmed and examined:

The Hon. ADAM SEARLE: I disclose that I buy both and gas and electricity from AGL.

Mr NELSON: A valued customer.

CHAIR: That is a material disclosure. So do I. Mr Nelson, do you wish to make an opening statement?

Mr NELSON: AGL is a corporate entity and one of the larger energy retailers in the country with nearly four million customers. The company is one of the biggest non-government-owned operators of renewable energy power stations. It is also one of the largest thermal generators using principally coal and gas. It is not a large gas producer and is in fact a short retailer over the long term. What does that mean? It means we have a much bigger retail portfolio than we have gas production capability.

I will re-emphasise some of the points made in the submission. It comes down to a couple of key points. New South Wales currently produces only about 5 per cent of its gas demand and Victoria and South Australia have a large amount of surplus gas. However, the pipelines that transport it, such as the Eastern Gas Pipeline, are constrained. Expansion is occurring, but they will not be able to satisfy New South Wales demand in their own right. We know there is insufficient gas in the northern States to satisfy the LNG demands of the new export facilities at Gladstone and domestic demand. While there is surplus pipeline capacity bringing it from the north, all of the surplus gas is in the south. That is the problem in a nutshell.

The Hon. MICK VEITCH: Thank you for your submission. I will ask some questions about statements you have made on page four relating to gas price transparency and competition. Some submissions mention and the Minister himself this morning referred to the need for greater transparency in gas supply contracts. What is AGL's view about greater disclosure with regard to contracts and pricing?

Mr NELSON: The market is in transition. Historically, there was a lot of gas relative to the domestic demand. Most of the contracts struck were very long bilateral contracts between producers and retailers or shippers. Over the past few years we have seen that demand and supply balance change significantly. We have seen some degree of regulatory response to that, such as the creation of the short-term trading market and various hub-type developments where gas is traded on a more short-term basis. It is probably too early to tell whether that has been sufficient to give some users and other stakeholders the degree of short-term transparency that they want. We are certainly monitoring them and we have welcomed them to this point, but they have been in operation for only a short period. Further refinement of those types of trading hubs would always be worthy of consideration.

The Hon. MICK VEITCH: You talk about the pipelines being monopoly infrastructure. I am interested in your views about the problems or issues that that causes.

Mr NELSON: It is a big contrast with electricity. With electricity, if you own transmission assets they are all regulated. There is no provision through the national competition framework effectively to have coverage of those pipelines revoked in a competition sense. Where there are issues of transient market power, you will see problems. When I say "transient", we are seeing these markets change very significantly for the first time. Demand for the gas on the East Coast is tripling. Peak demand is going up about two-and-a-half times. As that plays out you have short periods when the gas is in one location but the pipeline capability to transfer it somewhere else is also somewhere else. What is required is both short- and long-term thinking about how pipeline operators are dealing with their pricing structures to ensure consumers get the right price.

The Hon. MICK VEITCH: Are you encountering any issues accessing the pipelines?

Mr NELSON: Not specifically. It is an issue that we believe should be closely monitored because it is very different from the electricity industry. With electricity, retailers are operating in the National Electricity Market [NEM] and they can use derivative contracts. However, ultimately the transmission side is operated completely independently of the contracts dealing with supply. The gas scenario is very different. Not only must we deal with the owner of the gas but we must also do a separate deal with the pipeline operators to the extent that they are not covered by the requirements of a piece of monopoly infrastructure.

The Hon. MICK VEITCH: The Minister said this morning that the industry was very "opaque". What would AGL see as an improvement in achieving the transparency that we would all like?

Mr NELSON: It is a good development that the Australian Energy Market Operator [AEMO] is now doing a statement of opportunities for gas—it has traditionally been focused on electricity. Where participants have information that they think would add to that transparency, they should share it where it is commercially sensible for them to do so. We released a paper in March last year articulating a short-term daily production supply curve with our estimated cost of production for all the fields on the East Coast. If you are a user, retailer or producer, that type of material will allow you to gain insight into how the market will play out in terms of pricing pressures. It is one of those situations where if information exists that is not commercially sensitive AEMO has a role to play in publishing it.

The Hon. ADAM SEARLE: You talked about an increase in demand. However, the AEMO national gas forecasting report describes a decline in gas consumption in New South Wales over the past few years and projects further decline over the next five years and even longer. We have also received a report from the Melbourne Energy Institute that postulates more dramatic declines in demand in New South Wales. If one or both of those projections is correct, the gas supply cliff that your working paper describes might not occur. In fact, it is likely not to occur. That would be the case, would it not?

Mr NELSON: I draw the Committee's attention to the March 2014 working paper entitled, "Solving for X—the New South Wales Gas Supply Cliff". I do not like the elaborate titles given to many of the working papers, but my boss enjoys them.

The Hon. ADAM SEARLE: We will simply call it the "gas supply cliff".

Mr NELSON: Interestingly, the paper has been accepted for publication in a peer-reviewed academic journal with a much more benign title—"The East Coast Gas Supply Cliff". I am much happier with that. The modelling we did shows that we are anticipating a 20 per cent reduction in domestic gas demand over the next couple of years. Our short-term projections are not much different from what you have heard previously. That is driven by a couple of things. We do not think that power generation from gas will play a significant role at all in the short term. Gas has priced itself out of the generation market. Depending on what you think about that, ultimately it is likely to comprise more coal-fired generation. The interesting thing in looking at the aggregate demand picture is that while we have a domestic demand of 20 per cent we will still see the tripling because of the scale of the LNG projects. They are of a significant scale well and above the traditional 700 petajoules per annum domestic demand on the East Coast.

The Hon. ADAM SEARLE: You are talking about the Queensland projects?

Mr NELSON: Yes. They are looking at something in the order of 1,400 or 1,500 petajoules. That represents a tripling of overall demand for gas. When I refer to demand I think of it in the same way as a power station in, say, New South Wales; that is, it is a demand for gas. LNG projects are a demand for domestically available gas.

The Hon. ADAM SEARLE: I think we are using the same terminology. Queensland is experiencing a massive increase in gas production, a lot of which we understand—although we do not really know—is being sold overseas. That is not really demand; that is domestic requirement.

Mr NELSON: It is contracted demand. Whether or not it is being used here or overseas, ultimately it is not available for domestic use.

The Hon. ADAM SEARLE: There is a massive increase in the amount of gas being produced in this country.

Mr NELSON: It is a very significant increase in supply, but it is not sufficient to meet the expanded LNG requirements, even though there is a reduction in domestic demand. Our modelling has included a little bit of estimation in regard to price elasticity. However, because of the very significant change we are seeing for the first time, we do not really know what all of those price pressure points are for various types of manufacturing and commercial activity because they have never been seen before. That is one of the things that has concerned us as a business; that is, the loss of business for ourselves and the New South Wales economy at those various price points. We do not know what they are now. Various individual businesses would know what they are for

them, but it is impossible for us to know. We have used some estimates of price elasticity that have seen some reduction in commercial and industrial use, but then we also have the power generation factor.

The Hon. ADAM SEARLE: Your paper states that you are happy for the gas you are producing to be provided exclusively to New South Wales rather than exported.

Mr NELSON: Yes.

The Hon. ADAM SEARLE: Are you undertaking that you will sell that gas into New South Wales at less than the export price?

Mr NELSON: The further south you go the wholesale price will decline. That is, if I had gas in New South Wales and I wanted to get it into Queensland—

The Hon. ADAM SEARLE: To sell overseas?

Mr NELSON: Yes. I would have to pay for it to be shipped. By definition, the wholesale price should be lower in New South Wales for commercial and industrial customers than in Gladstone simply because of that pipeline cost. It is an opportunity cost. From a business perspective, again we are very long retail. What that means is we have got more retail obligations than we have long-term supply capability. Because we only produce 5 per cent of New South Wales and we are a very large retailer what we need to do is to try to provide more gas into that market for our own purposes, which is to supply those customers. It is not in our interests to sell that gas at a price that makes those customers go out of business because we do not have any liquefied natural gas [LNG] capability. If we do not sell it to those domestic customers where it is effectively gas that gets into a very long queue longer term it is not worth as much to us.

The Hon. ADAM SEARLE: With the export capability in Queensland that is now opening up is there not a risk that all sorts of gas suppliers will gravitate towards charging the higher price? Maybe they will not charge exactly the same price. Maybe it will be that price less the on cost, if you like, of having to transport it to Queensland but they will all be hovering around that international parity price.

Mr NELSON: Absolutely there is significant wholesale pricing pressure and we are seeing that both as a producer but also as a retailer who is trying to renegotiate supply contracts. I cannot go into the commercial terms of those contracts but I can tell you that producers are obviously trying to get a much higher price than they have had traditionally.

Ms JAN BARHAM: The Minister this morning revealed that AGL was issued a stop work notice at Gloucester and now it is being reported that the licence has been suspended. What does this mean for the project's future and why did AGL fail to alert the Environment Protection Authority [EPA] to the BETEX finding for almost two weeks?

Mr NELSON: I can go into the very general elements but, not being an environmental scientist, I will leave a lot of the specifics to questions on notice if that is okay. In broad terms, one of the samples from the flowback water showed a reading of BETEX. That reading was then subsequently investigated. It was found that it posed no material risk to human health or the environment. That said, we went through a whole bunch of processes to try to look at what was causing that reading. The moment that we were at that point, which was some days after the initial reading was revealed, we notified the EPA. That was, I think, yesterday. I might be wrong.

Ms JAN BARHAM: Twelve days later or something.

Mr NELSON: Then we subsequently voluntarily—

Ms JAN BARHAM: I know from a local government perspective with a sewage treatment plant that the minute that you have a reading that indicates a breach of a licence condition or an arrangement—

Mr NELSON: It was not a breach of the licence.

Ms JAN BARHAM: No, but I am saying for a sewage treatment plant it is. You have measures that you have to reach. Similarly, is it not a known issue that you would automatically report?

Mr NELSON: That is why we voluntarily supplied that information. I think it is really important to note there that no conditions of any licence were breached, is my understanding.

Ms JAN BARHAM: But is it not a prohibition in New South Wales?

Mr NELSON: In addition—

The Hon. ADAM SEARLE: Let him finish his answer.

Ms JAN BARHAM: I have limited time and he is saying things I do not need to hear.

The Hon. NIALL BLAIR: He is allowed to answer the question. Give him time to answer the question.

CHAIR: If you give him a chance to answer the question you may get an answer.

Mr NELSON: It is obviously a significant issue of interest to both this Committee and the community. I am very proud to work for a company that at the moment that we knew that it was something we needed to do further work on we eliminated the issue around material risk to human health or the environment, we notified the regulator, notified the public and notified our shareholders and now we are working with the EPA to resolve what the issue is. I am very proud to work for a company that takes that type of approach.

Ms JAN BARHAM: If you decide to go ahead with the Gloucester coal seam gas [CSG] project in the fourth quarter of 2015 how quickly will you be able to build the pipeline and gas field and approximately what date will the gas come on line?

Mr NELSON: We would be looking at gas well beyond the point of what we have identified as the shortfall in New South Wales being 2016-2017. We would be looking more into that latter part of this decade.

Ms JAN BARHAM: Your submission suggests that there is a 21-day shortage in the winter of 2016?

Mr NELSON: Technically as an economist I have got to tell you it is called unmet demand. What it means is that we cannot find a way that the market can physically see that solved. The reason that is important, as a point of clarity, is that what a shortage implies is that there is not enough gas at any price. We know that there will be some commercial behaviour that will at least try to address that in some type of market way. The critical question that we cannot answer in our own minds and certainly you cannot model is how that will play out in real life. It ultimately means there is not enough gas for the users who are prepared to pay for it.

Ms JAN BARHAM: What would happen in that situation?

Mr NELSON: Based on the current regulatory structure an email would call for emergency shippers. Obviously, if it is at that point there would not be any. Then you would be in a situation where you would be required to invoke emergency powers and effectively curtail industrial users based upon a schedule that the network operator would look at.

Ms JAN BARHAM: That is where you have priority about who gets restricted?

Mr NELSON: That is right. In my experience, having worked for AGL during the 2007 issue and then also working for the New South Wales Government 12 years ago during the Moomba issue, generally what happens is that we know that the emergency services—hospitals, those types of things—are obviously very well protected and it is those large industrial users who tend to be asked to voluntarily curtail to ensure that the system can be stably maintained.

Ms JAN BARHAM: Santos suggested this morning that there was too much regulation of coal seam gas and it was getting in the way of developing gas resources. Does AGL believe that there is too much regulation?

Mr NELSON: No, I would not characterise it as an overly regulated industry. I would say that some of the regulation that is in place is world's best practice. I think that it is incumbent upon producers like AGL to

ensure that we are not just meeting the standards of the government but we are meeting the standards of the broader community. I think that is one of the things that you have seen from us in the past couple of years. We have put lots of emphasis on transparency with things like our water portal and had lots of transparency around our assumptions around the way we think the market will be supplied through things like working papers and economic analysis. I do not characterise it as over regulated and I think the industry needs to continue to put all of its efforts in to ensuring that we are explaining these issues adequately to the community.

Ms JAN BARHAM: You think that the concept of a social licence is in place with the community and AGL?

Mr NELSON: I think it is something that we are continuing to work towards every day. What is really important is that the community feels that they are getting the right information. I think that over the past couple of years we have certainly done a much better job in my own mind of providing that requisite information. We get lot of positive feedback. We certainly get some feedback that is not so positive. If I give you a personal view, I think it is quite a significant improvement over the past couple of years in the way that the industry—and I characterise that more broadly than just us—has attempted to communicate very complicated scientific aspects of the industry in ways that lay people—and I include myself there, I am not an environmental scientist or a hydrogeologist—find relatively easy to understand.

Ms JAN BARHAM: What about the community concerns about the long-term and the unknown effects? How can that trust be maintained when we have issues like what happened yesterday and the concerns of the community around their future and the potential to contaminate water supplies?

Mr NELSON: To be very, very clear, in my mind yesterday has nothing to do with contamination; it has to do with understanding what is going on with that particular sample. But I think the point you raise around wanting to continue to try to provide the information which gets to that point where the vast majority of people in the community understand the issues and are prepared to move forward with the industry is something which we are working towards every day.

Ms JAN BARHAM: It would appear that you are not being successful in terms of the large amount of opposition in New South Wales at the moment.

Mr NELSON: There is certainly opposition but there are certainly a lot of people who support the responsible development of the resource to ensure that those businesses that we supply as a retailer can continue to have gas to employ all of those people to make all of the things which we all enjoy in everyday life. It is that balance that we are trying to make sure that people understand, which is both the industry as a production element and also the industry as 1.3 million connections both residential and commercial and industrial who need gas on a day-to-day basis.

CHAIR: AGL has committed in the past and still commits in your submission to not exporting any gas that may be produced from Gloucester outside of New South Wales and yet you come down not wanting a gas reservation policy in New South Wales. If you are prepared to commit 100 per cent of your production why would you not want a gas reservation policy?

Mr NELSON: My view and certainly I think the view of AGL is that if we were going to talk about a gas reservation policy we needed to talk about it 10 years ago before we saw the development of the LNG capability. Our modelling shows that there is simply not enough gas to meet both the LNG industry's requirements and the domestic situation based upon current production.

The Hon. ADAM SEARLE: Physically not enough gas?

Mr NELSON: Physically not enough gas. Even if you were to look at some type of reservation policy you would have to then tell people who own gas that is contracted to put that gas out of Gladstone. You would have to literally force them to put that gas into the domestic market.

The Hon. ADAM SEARLE: The public own the gas though, do they not?

Mr NELSON: That gas that is being developed under licence is owned by the producers of that gas.

The Hon. ADAM SEARLE: Is it?

Mr NELSON: Yes. They have to pay royalties on that and the question really for policymakers is whenever you intervene in a market and you mandate somebody with a particular property right doing something that they disagree with then you are going to have an impact on investor perceptions of the industry.

The Hon. ADAM SEARLE: What happens if they cannot get an export licence?

Mr NELSON: There is no such thing as an export licence.

The Hon. ADAM SEARLE: What if the Commonwealth Government creates one?

Mr NELSON: It is an interesting question. At the moment with the way that regulatory structure works reservation can only be done by States and so a reservation policy that would effectively solve New South Wales gas supply issues would require one of the other States that has more gas compulsorily directing that into New South Wales.

CHAIR: That was not the point of my question. My question started with talking about AGL's current commitment to reserve gas for New South Wales. At no stage was I suggesting that we could con, convince or bribe any other State to cut their own economic throat. I am assuming that you get the Gloucester project up, Santos gets Narrabri and, God forbid, you are even allowed to develop Camden even further despite what our last Premier did to you. Then with the supplies also coming up through the eastern gas pipeline we would still manage to have enough gas to supply our peak load requirements, et cetera. Why would New South Wales not reserve your supply and Santos's supply for itself?

Mr NELSON: It is a good question. I can only say that given we have made the commitment I think it would be simply a regulatory commitment over and above something we have already made to the stock market. Under continuous disclosure obligations we have made that commitment and therefore investors are expecting that gas, should it to be produced, to go to our retail customers in New South Wales.

The Hon. MICK VEITCH: It is sort of a self-imposed reservation.

Mr NELSON: I guess you could describe it as a self-imposed reservation policy.

The Hon. ADAM SEARLE: Or self-regulated.

Mr NELSON: Self-regulated.

CHAIR: It is a strike in time, really. That is really what it is all about. In a paragraph on page 3 you say that the economic contribution of the Gloucester gas project to New South Wales would be in the order of a billion dollars out to 2035 and may well decrease gas prices in New South Wales out to 2025 by 8 per cent. Do you have an idea what the royalties flow from that sort of production process would be over, say, 2025 to 2035?

Mr NELSON: Not off the top of my head but it is a question I am more than happy to take on notice.

CHAIR: That would be good. It would be interesting to see what the net contribution would be in relation to that. Santos said they were not building any pipelines to go north; they were going to cut across to Moomba and then send it south. How is Gloucester going to be worked into the system as far as supply is concerned?

Mr NELSON: It will be through Newcastle.

The Hon. Dr PETER PHELPS: Would it be fair to say that AGL's business model is as a retailer of gas to domestic consumers, with no interest in export whatsoever?

Mr NELSON: Yes. You could characterise us as having absolutely no financial interest in any of the export facilities.

The Hon. Dr PETER PHELPS: If CSG were to be expanded in New South Wales your utilisation of produced gas would be for the domestic market within New South Wales and the Australian Capital Territory. Is that fair to say?

Mr NELSON: Yes.

The Hon. Dr PETER PHELPS: If you can produce gas for a wholesale price—which, of course, you would do internally in terms of it is an internal accounting mechanism—for less than the international parity price for gas, that means you could retail it for a cheaper price than would be the case if you had to rely exclusively or, at the current time, 95 per cent on gas contracted from outside of New South Wales. Is that correct?

Mr NELSON: It would certainly end up being cheaper because of the avoided pipeline costs, at a minimum, and then you would have the decision as a retailer—obviously, being in the business of selling gas you want to make sure your customers can continue to operate but, by the same token, you want to ensure you are maximising your own profit as well.

The Hon. Dr PETER PHELPS: Let me put to you two wildly different hypotheticals: the situation where you are entirely reliant upon buying gas at international parity price or a situation where you meet your entire demand from your own production and use the mechanism of vertical integration. Surely in that second situation you would be able to retail at a lower rate than you would in the first situation. Is that correct?

Mr NELSON: Absolutely. The modelling that was referred to in the submission in the previous question is talking about one project and what it would do to wholesale gas prices in New South Wales—it is 8 per cent. Therefore, if you go to the extreme of that scenario where you have got 100 per cent of your gas being produced domestically, obviously the price impact would be significantly higher than that.

The Hon. Dr PETER PHELPS: Let us get to a more realistic situation. Every petajoule you produce domestically through your own vertical integration offers you the ability to give retailers a cheaper gas price than would be the case if that domestic production in New South Wales is not available. Is that correct?

Mr NELSON: That is correct.

The Hon. Dr PETER PHELPS: By the same token, given that there is, you would admit, limited ability for price gouging, given the ability of domestic and commercial consumers to find alternative sources of energy. Would that be a fair thing to say?

Mr NELSON: It depends upon the market segment. I would clarify this by saying it is not price gouging—

The Hon. Dr PETER PHELPS: Supernormal profits.

Mr NELSON: The ability to switch from one technology to the other in household circumstances is even different within household segments. So for households that do not face any capital barriers at all—that is, wealthy households—they could go out tomorrow and have a very positive return on their investment by doing things like putting in a solar PV unit with a feed-in tariff, switching their particular heating to a reverse-cycle air conditioner—some of the things we heard about in the previous discussion.

The Hon. Dr PETER PHELPS: Who are the people who suffer then? They are obviously people who do not have large disposable capital which they can access at a moment's notice to change their energy consumption patterns. Would that be correct?

Mr NELSON: Yes, they are facing capital barriers.

The Hon. Dr PETER PHELPS: In other words, the poor cop it in the neck when governments decide to pick and choose?

Mr NELSON: Vulnerable customers have a much more difficult decision because of those capital barriers. When you get into the commercial and industrial segment there are some commercial customers who could be considering alternatives today, but then there are a lot of other industrial customers—basically, the economics of the alternatives, even with a higher gas price it is still the most economic option except for coal and therefore the decision they would make would be based upon the degree to which they are export/import competing or not and their ability to absorb any of those higher prices.

The Hon. Dr PETER PHELPS: One final question, and this is perhaps the important question of these hearings, and it is based on every question I have asked today: The greater the quantum of gas produced in New South Wales the greater the ability retailers have of de-linking that price from international parity pricing. Is that correct?

Mr NELSON: Yes.

Mr SCOT MacDONALD: I was interested to hear that you worked for the Government at the last time when Victoria had that blowout.

Mr NELSON: It was not Victoria; it was when the Moomba facility went down around new year 2001 or 2002.

Mr SCOT MacDONALD: Then you were subsequently working for AGL when—

Mr NELSON: In 2007.

Mr SCOT MacDONALD: What was the issue behind that one?

Mr NELSON: In 2007 it was a particularly cold winter event that no-one in the market anticipated and so there simply was not enough gas in the physical gas, there was not enough production capability based upon what people had nominated or what companies had nominated was required and therefore for a very short period of time—I think it was three days—around 30, 35 per cent of the CNI load was voluntarily curtailed.

Mr SCOT MacDONALD: We are looking at your scenario of 21 days—maybe it is right, maybe it is wrong. In your experience, having worked for the Government, having worked for AGL, and we are now possibly looking at a bit more extended time, what would be the impact—and I appreciate there is a priority—what are some of the impacts that you can articulate? Economic activity? People standing down? Possible job losses? How does the Government deal with this? It is an emergency activity.

The Hon. ADAM SEARLE: Point of order: Mr MacDonald's question is completely unintelligible.

Mr SCOT MacDONALD: I would like to hear about the emergency—the 21-days emergency scenario that we are looking, as induced by a Greens ALP moratorium.

The Hon. ADAM SEARLE: Point of order: I will take an objection to that.

Mr SCOT MacDONALD: It is your policy.

The Hon. ADAM SEARLE: That is not correct. You are being cheap. Ask a proper question.

Mr SCOT MacDONALD: Under that moratorium, under that 21 days, what is the sort of emergency scenario we are looking at?

Mr NELSON: The difficulty, I think, with what our model shows is that unlike previous times where you have had very short-term interruptions that have had sequential days, what I think is problematic with this type of scenario is that because we know the gas market is so weather-driven it will not be 21 days in a row if our forecast was right—ours is a core case.

The Hon. ADAM SEARLE: It could be less.

Mr NELSON: It could be less, it could be more; we just do not know because we cannot predict the weather this far out and we do not know how other participants will respond and all of those things. That is the caveat on the modelling. But what we can say is that to the extent that there are these issues where you just have this unmet demand, they will not be sequential, and that is the thing that I worry about on behalf of our customers in the sense of their business planning. But if it is three days in a row, like we experienced in 2007, you can tell your staff we cannot operate for three days but everyone is back on deck on Monday. When you are dealing with these very short-term issues where there is just not enough gas, that is going to make it much more difficult for some of the larger customers to plan adequately, and I think that has probably been reflected in

some of the other public commentary from some of the business groups and the customers. They are concerned about two things, in my mind: price primarily, but then secondly it is this security of supply; it is knowing that I have a contract and that contract will be honoured no matter what.

If I had to summarise what is different between what we are forecasting here—and it is a forecast, we do not know for sure it will happen—a forecast this time around, you are in a situation which is a little bit unprecedented and it does make it much more difficult for those customers to adequately plan for it.

Mr SCOT MacDONALD: So, in summary, you could have some serious economic personal disruption to the people of New South Wales?

Mr NELSON: Yes.

Mr SCOT MacDONALD: From a Greens ALP moratorium.

CHAIR: It seems we have come to the end of the questions. Thank you very much, Mr Nelson, for coming. You have taken one question on notice from me. If you could please respond to it within seven days, given our tight deadlines? The secretariat will be in contact with you anyway to remind you.

(The witness withdrew)

(The Committee adjourned at 3.24 p.m.)