STANDING COMMITTEE ON ESTIMATES AND FINANCIAL OPERATIONS

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Hon Mark Nevill (Chairman)
Hon E.R.J. Dermer
Hon Muriel Patterson
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Hon E.R.J. DERMER: I understand that you have read the advice provided about committee proceedings and that you have signed it.

Mr HARRIS: Yes, I have. I gather the committee wants a familiarisation on and general background of the natural gas industry in Western Australia. My background is in resources and energy. In the Office of Energy, I am senior manager in the industry development division, which focuses on the domestic gas industry. Export of natural gas is primarily handled by the Department of Resources Development and the Department of Minerals and Energy. The Office of Energy's main focus is on the domestic industry, so that will be the focus of my presentation.

I will provide a brief overview of gas resources in the State, looking at where the gas comes from, how it is transported and so on. I will also address gas demand in the State and what drives the market - demand from residential and industry sectors - and where it is used in the State. I will look in some detail at gas pipelines, because the transportation system for gas is fundamental to the market, given that most of the gas comes from the North West Shelf, which is some distance from the main market in the south west. I will then briefly address market liberalisation. My primary role in the Office of Energy is further deregulating the energy market in Western Australia - opening up opportunities for new players in the market - and hopefully reducing the price of gas for end consumers. I will also speak briefly about natural gas resources. I had a number of overhead slides prepared, but we could not get a projector. I am happy to provide copies of the slides for the committee. That will give a better visual indication of the location of the resources.

As I said, briefly, the main source of natural gas in the State is off the North West Shelf of Western Australia. The major producer is obviously the North West Shelf joint venture, operated by Woodside Offshore Petroleum Pty Ltd, but there are a number of other producers operating off the North West Shelf. They feed natural gas into the main transportation system from the North West Shelf, which is the Dampier to Bunbury natural gas pipeline. There are other pipelines in the State, including that taking natural gas from Karratha to Port Hedland, which is owned by BHP and which will feed its DRI project when it is completed. It currently feeds the Pilbara Energy project's gas-fired power station at Port Hedland. That pipeline has a large capacity and could be used for other industries developing in Port Hedland.

The other major pipeline coming south is the recently constructed goldfields gas pipeline. At the moment that takes gas from south east of the Burrup from Apache Energy, among others. It feeds gas into the BHP's gas-fired station at Newman and down to Kalgoorlie, where it feeds gas to the goldfields joint venture power station at Parkeston as well as Western Mining's power stations in the northern part of the goldfields.

Hon SIMON O'BRIEN: So, that comes down the centre of the State?

Mr HARRIS: Yes.

Hon E.R.J. DERMER: It services mines such as Wiluna.

Mr HARRIS: It takes in Wiluna. There are many goldfields and some nickel projects along that route that are now converting from oil-fired generation to gas-fired generation, which is proving to be a saving in costs along that route.

Western Mining, which has its four major mines along the goldfields gas pipeline, has converted all its diesel-fired power stations to gas-fired power stations. There is the new large power station at Kalgoorlie run by Goldfields Gas Power, which is a joint venture between Normandy Mining and Trans Alta, which is a Canadian energy utility. The other major pipeline, which is quite old, is the Western Australian natural gas pipeline, which was constructed in 1971. It goes from the Geraldton region to the south west. The gas comes from around Dongara. It was built originally to supply Alcoa and some other consumers in the south west and was recently bought by CMS Energy. Western Australian Petroleum was previously the operator of the WANG pipeline. It decided it wanted to get out of the business of running pipelines and offered it for sale early this year. CMS, an American gas transportation utility, was the successful bidder.

The Perth basin area - around Geraldton and Dongara - is the second major gas producing area in the State. Its reserves are not as significant as those at the North West Shelf, but it has a long term supply of natural gas.

We have four major gas gathering areas off the North West Shelf. The largest, which is dominated by Woodside - as operator of the North West Shelf joint venture, covers the Cossack, Goodwyn and North Rankin fields. Woodside is by far the dominant supplier of gas to the domestic market, beginning its supply in 1984 with the construction of the Dampier to Bunbury natural gas pipeline. The medium size fields are Harriet, Tanami and Campbell, just to the south of Goodwyn and North Rankin. Further to the south are the Griffin and Chinook fields, and further to the south of that is the Tubridgi/East Spar field.

I should mention briefly the liquefied natural gas part of the industry, although I will not go into detail because that area is not covered by the Office of Energy. It is an export industry covered by the Department of Resources Development under the Woodside state agreement. LNG is certainly a major contributor to the economy of Western Australia. Western Australia's LNG accounts for 11 per cent of the world's total trade at 7.5m tonnes per annum. The North West Shelf joint venture partners are looking to expand their LNG production on the Burrup peninsula with the development of trains four and five, which will double the production by the year 2003 to about 14.5m tonnes per annum.

Hon SIMON O'BRIEN: The notes on LNG include the following -

> . . . thus a market opportunity would appear to exist for the expansion of Western Australian LNG production by as many as five LNG trains...

Mr HARRIS: At present there are three trains. A train is a production term; it is a series of processes. They are in a long horizontal line. The gas comes in and is processed. Out of the far end it is liquefied. Each train is independent. Its production is about 3.5m tonnes. It is in a modular form. When the company wants to expand it, it is not required to add to the train, it simply builds another. It is just a term, a process.

Hon E.R.J. DERMER: Basically it is a sequence of production steps in a chain. There are three currently and they are looking at building two more?

Mr HARRIS: Yes.

Hon E.R.J. DERMER: It comes in from the offshore facilities as a mixture of gas and distillate, and each is then separated. Then the basic gas - methane - is frozen and then condensed and pressurised into a liquid form. It is separated into propane, butane and methane.

Mr HARRIS: The principal component in natural gas is methane. Propane and butane form the basis of LPG. Just as petroleum gas is separated, they are separate products. We export liquefied natural gas, basically as methane and it is used in power generation. It is the basic form of natural gas. Propane and butane can be used for purposes other than burning for energy. Methane is burned for energy by power stations and so on, and that is its primary use when we export it to Japan and Korea.

Hon SIMON O'BRIEN: What is LPG?

Mr HARRIS: That is propane and butane, which are extracted at the North West Shelf. However, that does not apply to all of the product. Because Wesfarmers has an LPG plant at Kwinana, the producers must ensure that some LPG products go in at the top end of the pipe to be extracted at the plant. The operator of the DBNGP, which is AlintaGas at the moment, must ensure it has the right gas quality going in the top end. AlintaGas Trading must supply that LPG so that Wesfarmers can extract it at the bottom end in sufficient quantities.

Woodside set up its own LPG extraction plant at Burrup last year. Previously it did not extract LPG itself. Therefore, it has an LPG plant and it exports LPG. About 90 per cent of the gas coming down to the south west is still methane, which is the basic product of natural gas.

The main gas suppliers in the domestic gas industry are: Woodside, on behalf of the North West Shelf joint venture partners; Apache Energy; BHP Petroleum; Boral Energy - which has a small deposit just south of Geraldton; WAPET - which previously had the field at Dongara but CMS bought that when it bought the WANG pipeline, and it still has deposits on the North West Shelf; and a smaller company, Consolidated Gas, which has a deposit just south of Geraldton.

Hon E.R.J. DERMER: I understand that the Karratha operation, which is the main producer, is a conglomerate of eight different companies, including Woodside.

Mr HARRIS: Woodside is the operator. The joint venture includes Chevron, Shell and everybody else. All the major oil producers are in it - BHP, Chevron, Shell, Mobil, and some Japanese companies.

Hon E.R.J. DERMER: But basically Woodside manages it?

Mr HARRIS: Woodside is the manager and operator and has shares in its own right. Its main rival -WAPET - also has three or four. There is a shared ownership as part of the WAPET joint venture as well. WAPET's main undeveloped field at Gorgon is massive, and the company is looking to develop it into an LNG export field. It will need to bring gas onshore to process. It is having talks with Woodside about sharing facilities. I know the Government is keen for the two parties to work cooperatively to rationalise facilities rather than build new facilities.

Hon E.R.J. DERMER: Where is the Gorgon field?

Mr HARRIS: Just to the south west of the main Rankin-Goodwyn field.

Hon E.R.J. DERMER: They are jointly using the facilities at Karratha.

Mr HARRIS: Yes, that is being considered. The gas would come onshore at Karratha, even if it were done independently of Woodside. I understand it will be a wholly export joint venture involving LNG. However, it does have some gas quality problems. There is a lot of CO_2, which would have to be extracted at source.

The domestic demand for natural gas has been constant but rising slowly in the latter part of this decade from about 1993 onwards. It is expected to jump significantly post 2000 because of the number of resource development projects under consideration that are expected to get the go-ahead. Those projects will be large consumers of gas. No-one is sure whether projects such as the mid west iron and steel project and some of the DRI projects will go ahead. We have conservative estimates with different scenarios ranging from base to optimistic in order to work out future demand. However, even with the base scenario, there is a significant growth in demand in Western Australia.

Hon E.R.J. DERMER: How do the delays in the DRI project that we read about in *The West Australian* on the weekend impact on consumption planning?

Mr HARRIS: It might knock it out six months or so, but not significantly. The project will go ahead, but it might be delayed slightly. Its consumption is significant as a single project at 170 TJ per day, which is big. However, in terms of our forecasts, it will not make much difference. It will push it out, but not much.

Hon E.R.J. DERMER: You would be looking at a delay in cash flow for six months?

Mr HARRIS: It is wholly private sector operated; it involves North West Shelf Gas' supplying to BHP.

Hon E.R.J. DERMER: So it does not directly impact?

Mr HARRIS: No. The main revenue for the State is the royalties on the DRI project, which are significant.

Hon E.R.J. DERMER: The delay is in getting it up and running?

Mr HARRIS: The forecast average growth rate for final energy use of gas is 8.1 per cent, which is significant. It is estimated that natural gas will become the single largest final energy used by 2000. That is compared with petroleum, LPG, wood, coal and so on. It will be the largest single fuel by the year 2000. It is currently sitting at 27 per cent of final energy use and is expected to reach 40 per cent by 2009-10. Natural gas for electricity generation is increasing and is supplanting oil, particularly in the mining areas. Because of the establishment of the goldfields gas pipeline, the mining companies are switching from oil to gas to fire their generators for electricity.

Hon SIMON O'BRIEN: You say that at current usage levels we have natural gas supplies for 93 years. What about petroleum or oil resources? How much do we have?

Mr HARRIS: Oil would probably not be as high as that. I do not have a figure. The North West Shelf is a good producer of oil, but its main production is gas. Oil is usually a bonus on the North West Shelf. It is mainly a gas field with condensate. It is a light oil, not a heavy crude oil, and it is used for petroleum product production. In 1995-96 it surpassed Bass Strait in petroleum production. Everyone is looking for the next major oilfield off the North West Shelf but no-one has found one. However, there is significant oil production.

Most of the gas used domestically in Western Australia is used in manufacturing in one form or another. Our residential consumption is small compared with that of the Eastern States. For example, 50 per cent of Victoria's consumption of natural gas is for domestic purposes - heating and cooking. In Western Australia, that figure is less than 5 per cent. So, 95 per cent of our domestic gas is used in industry. Alcoa is probably the single largest user of natural gas in its alumina refineries in the south west.

Hon SIMON O'BRIEN: Is that because the pattern of use in the domestic environment is different in Perth and Melbourne, or do we have more industrial users?

Mr HARRIS: It is a bit of both. We have many more industrial users. We have more mineral resources than Victoria and gas is used to process those resources, particularly alumina, and it is used for electricity generation far more in Western Australia than in Victoria. Victoria uses a lot of cheap brown coal, and our coal is not as plentiful or as cheap to extract. So, gas is a good competitor for use in electricity generation in Western Australia compared with Victoria.

In addition, gas arrived far more recently on the scene in Western Australia for domestic households; Victoria has had it for longer. It is probably not as saturated into the domestic market. There is a healthy growth rate in the residential sector. The figures I have indicate that the use of natural gas has grown at an average of 8.7 per cent in the domestic sector compared with 4.6 per cent for electricity. It appears to be outstripping electricity in the domestic residential sector. The forecast growth in the next 10 years is 3 per cent for natural gas compared with 2.4 per cent for electricity. Again, it appears to have grown more quickly, and will continue to do so, than electricity in the domestic sector, but it is levelling off.

The State has four main pipelines: The Dampier to Bunbury pipeline, the main one from the

north west to the south west; the goldfields gas pipeline, which goes from the middle of the Pilbara to Kalgoorlie; the Western Australian Natural Gas pipeline, which goes from just south of Geraldton to south of Perth - to Alcoa; and the Pilbara Energy pipeline, which goes from Karratha to Port Hedland.

Capacity is measured in terajoules per day, which is a measure of the energy value. By far the largest capacity pipeline is the Dampier to Bunbury pipeline, which carries about 470 TJ per day on average. The next largest is the Pilbara Energy project pipeline, which goes between Karratha and Port Hedland can carry 178 TJ per day. As I said, that pipeline has a large capacity. It is currently using about 12 TJ per day, which is less than one-tenth of its capacity. At the moment it supplies the power station at Port Hedland. It will move close to its free-flow capacity when the DRI project comes on. "Free-flowing" gas is not compressed. Gas can be compressed to increase the capacity. There are a series of compressors along the pipeline to compress the gas as it travels along the pipeline. The compressed capacity of the Pilbara Energy pipeline is over 300 TJ per day. Even with the DRI project, which uses about 170 TJ per day, and the power station, which uses about 12 TJ per day, it will still have a capacity of about 120 TJ per day. That is significant capacity for future development in Port Hedland.

Hon SIMON O'BRIEN: I am familiar with the term kilojoule. How much more is a terajoule?

Mr HARRIS: A lot. Kilo is 1 000; mega is one million; giga is one billion; and tera is one trillion. When we talk about terajoule, it is 10 to the twelfth. When we talk about domestic consumption, we are talking in kilojoules, and with industrial consumption it goes to terajoules.

Hon SIMON O'BRIEN: I also saw reference to petajoules.

Mr HARRIS: Peta is 10 to the fifteenth; it is the next step up from a trillion. The bigger the numbers, the prefix changes. Some of the figures in the paper are presented as petajoules. When we are talking about state consumption, that is the only figure we can use.

Hon E.R.J. DERMER: I assume that the last figure in the executive summary is petajoules per annum?

Mr HARRIS: Yes.

Hon SIMON O'BRIEN: That is a staggering number.

Mr HARRIS: Yes.

Hon E.R.J. DERMER: I note what you said about the Pilbara Energy pipeline being at 10 per cent capacity and the projected impact of the HBI project increasing it to its capacity. Is there a limit to what you can achieve by compression?

Mr HARRIS: It is over 300 TJ per annum with compression for Pilbara Energy.

Hon E.R.J. DERMER: What would be the free-flow maximum?

Mr HARRIS: It might be just short for the DRI project. Its free-flow capacity is 178 TJ. I understand that about 11 or 12 TJ are currently used and it needs about 170 TJ for DRI. It will take it to about 181 TJ, which is just pushing the limit for free-flow capacity. It might need compression. I do not know to what stage they go to with compression. The engineers will be able to work out the optimum compression.

Hon E.R.J. DERMER: The optimum compression is 300 TJ?

Mr HARRIS: The maximum is over 300 TJ.

Hon E.R.J. DERMER: But the compression can raise that above 300 TJ?

Mr HARRIS: Yes.

Hon E.R.J. DERMER: If we were expecting the demand for natural gas to double by 2009-10, I presume that means a doubling from the 1995-96 figure of 278 petajoules?

Mr HARRIS: Yes.

Hon E.R.J. DERMER: Would the current pipeline capacity be enough to accommodate that level of use in the State?

Mr HARRIS: It varies with each pipeline. The goldfields pipeline is certainly underutilised as well. It is using less than half of its capacity at the moment. With compression, the Pilbara Energy pipeline would have significant extra capacity. The Dampier to Bunbury pipeline would not have very much. It has just been expanded by 35 or 40 TJ per annum. The mid west iron and steel project - if it goes ahead - will be serviced by a looping of the Dampier to Bunbury line. Looping is the next stage after compression and is used when the benefits of compression are exhausted. One can start building loops on the pipeline to provide extra capacity. It is not a full parallel pipeline, but additional sections. That will service Geraldton.

Hon SIMON O'BRIEN: That is an extra supply element rather than storage?

Mr HARRIS: It is extra pipeline, but it is not a separate pipeline - it is connected. Even so, the State is planning to seek expressions of interest next year for further pipeline capacity to the south west. Pipeline operators have expressed interest in constructing another pipeline to the south west. The State has given an undertaking that it will call for expressions of interest to construct pipelines to the south west by the middle of next year. The Office of Energy will probably be managing that public process.

Hon E.R.J. DERMER: So, by mid next year we are looking at a request for further expressions of interest in a north-south pipeline?

Mr HARRIS: Yes. At this stage we will probably leave it up to the market to determine what size that pipe will be. The State might set a minimum, but we will probably leave it to the market to determine the optimum size.

Hon E.R.J. DERMER: I want to pursue the concept of looping. When we consider a pipeline, we imagine the pipeline has a particular capacity from point A to point B. As you have explained, one can increase that capacity by almost 100 per cent using compression. We looked at the example of the Pilbara Energy pipeline and increasing its natural capacity from 170 TJ to beyond 300 TJ. If I have a pipeline going from Dampier to Bunbury, at some point along the line I can increase the capacity by inserting a loop. One maintains the capacity in the areas where the pipeline is not looped by using compression. Like any other pipeline, it would be affected by the capacity it has at its least capable area; that would dictate the overall capacity of the pipeline to carry the gas. Therefore, if we are looking at that pipeline being currently close to its capacity and requiring a loop to service the major Kingstream Resources project - hopefully it will go ahead - we would need to use compression to make the looping worthwhile to maintain the maximum capacity overall. I have gained the general impression that we are getting to the stage of total utilisation of the pipeline. That is without the Kingstream Resources project being on line.

Mr HARRIS: It is close to capacity at the moment.

Hon E.R.J. DERMER: Given that general understanding, when would you expect the Kingstream Resources demand to occur?

Mr HARRIS: I do not know; I am not familiar with the time frames for that project. It is a question of when they get the finance, and I understand they do not have it yet. It is certainly not certain that it will go ahead.

Hon E.R.J. DERMER: We cannot pin down that one. How long would it take from a mid 1998 request for expressions of interest in building a second pipeline for the pipeline to be realised?

Mr HARRIS: Our aim would be to have additional capacity by 2000.

Hon E.R.J. DERMER: That is a second pipeline?

Mr HARRIS: We are not saying it will necessarily be a second pipeline. If the Kingstream Resources project does not go ahead, it could be looping. However, the State will be calling for expressions of interest in providing additional capacity to the south west. I am sure we will get a range of responses. There are many scenarios whether or not the Kingstream Resources project goes ahead.

Hon E.R.J. DERMER: The expressions of interest will be for additional capacity?

Mr HARRIS: Yes. I am sure some of the people putting in bids will be bidding for a second pipeline and others might choose to bid for looping.

Hon E.R.J. DERMER: You will need the second pipeline if the Kingstream Resources project or any other processing project of a similar scale needs to be serviced by that pipeline?

Mr HARRIS: Certainly. If the Kingstream Resources project goes ahead, that will take care of most of the looping on the pipeline at least at the top end. We would then probably need a

second pipeline to service the south west.

Hon E.R.J. DERMER: If we need a second pipeline, how long it will take to build? How long did the first stage take?

Mr HARRIS: It took a couple of years. With improvements in technology and construction techniques, it could be done in 18 months to two years.

Hon SIMON O'BRIEN: Is that the whole project or just the construction phase?

Mr HARRIS: The whole project. When we call for expressions of interest next year our aim is to have additional capacity available to the south west by the end of 2000. I know we are pushing it, but we think it can be done within two years.

Hon E.R.J. DERMER: That would be mid 2000?

Mr HARRIS: By the end of 2000.

Hon E.R.J. DERMER: That is 18 months to 24 months for the construction phase -

Mr HARRIS: And the bit in between of selecting a bidder and so on.

Hon E.R.J. DERMER: When we talked about the Pilbara Energy pipeline you made the situation very clearly to the uninitiated like me. We talked about the free-flowing capacity being 170 TJ and how compression could increase that to 300 TJ or beyond.

Mr HARRIS: Yes.

Hon E.R.J. DERMER: What is the capacity of the Dampier to Bunbury pipeline?

Mr HARRIS: When I say "capacity" of the Pilbara pipeline, that is simplified; we are talking averages. Even with the Dampier to Bunbury pipeline, it is over 500 TJ per day. However, it is hard to give an exact figure because there are different reliabilities. Gas delivery is measured on how certain a supplier is that it can deliver. People who need nearly 100 per cent reliability pay a premium for it in transport costs. If a consumer wants certain delivery of gas, AlintaGas can guarantee X amount. If it wants less reliable delivery, AlintaGas can transport X plus Y but with less reliability. The different users all have different needs. That is why we talk about averages. If a user pays for a less reliable service, it is the first to be cut off if something goes wrong. Western Power, for example, takes some at the tranche 1 capacity, but it also take some at the tranche 3 capacity.

Hon E.R.J. DERMER: What is the consumption figure?

Mr HARRIS: About 500 TJ per day maximum.

Hon E.R.J. DERMER: I appreciate the complexity of this.

Mr HARRIS: I can probably provide a closer figure, but I would have to talk to AlintaGas. It is close to that number. On average, the current transportation is 470 TJ per day.

Hon E.R.J. DERMER: The capacity is 500 TJ and the average consumption for the 1997-98 financial year is 470 TJ?

Mr HARRIS: It is close.

Hon E.R.J. DERMER: I am grateful for the explanation about the average figures. So, is the 500 TJ capacity on the Dampier to Bunbury pipeline with or without compression?

Mr HARRIS: With compression. It has commissioned its ninth compression station.

Hon E.R.J. DERMER: Is there scope for further compression?

Mr HARRIS: Not a lot. One can always compress and get a little more. It is a question of economics.

Hon E.R.J. DERMER: It would be a question of the economics of providing the compression.

Mr HARRIS: The benefit is not as great the more one compresses. It reaches an economic limit.

Hon SIMON O'BRIEN: The current average capacity is about 470 TJ per day. Obviously that has some compression?

Mr HARRIS: Yes.

Hon E.R.J. DERMER: The 470 TJ was the average consumption?

Mr HARRIS: The amount transported is 470 TJ per day. The current capacity, which is being compressed at station nine, is probably just over 500 TJ per day.

Hon E.R.J. DERMER: So, a great deal more compression will then start to become cost prohibitive and that limits the amount of compression?

Mr HARRIS: At the early stages compression is quite economical. The first compressor provides a big increase in capacity. However, the more one adds, the less one achieves until it reaches the point where it is not worth bothering. Then looping becomes the next economic thing to do until one reaches the economic end of that line. A second pipeline is the next option.

Hon E.R.J. DERMER: The capacity controlling factor would be the point on the line where capacity is at its minimum. There are nine compression stations evenly spread along the pipeline. One gets a boost in compression immediately after the station and it falls away again until the next station and then it kicks up and falls away again. In other words, the maximum compression is between the sequence of the loops.

Mr HARRIS: Yes

Hon E.R.J. DERMER: One would then achieve an overall capacity equal to that immediately after the compression. That is the gist of it?

Mr HARRIS: Sort of.

Hon E.R.J. DERMER: The looping can increase the compression. If we are looking at 500 TJ without looping, what is the estimated figure for the maximum one can achieve with looping?

Mr HARRIS: The looping will deliver another 170 TJ to the mid west iron and steel project. There would also probably be some surplus capacity.

Hon E.R.J. DERMER: That is a single loop?

Mr HARRIS: No, it is a series of loops. That is at the top end of the pipeline.

Hon E.R.J. DERMER: That is the top end looping. It would be done before the gas was being taken off?

Mr HARRIS: Yes. It might have some extra benefit for post Geraldton as well. Looping at the top end does increase the capacity to deliver to the south, even past Geraldton.

Hon E.R.J. DERMER: Most of the extra will be taken out of the pipeline just before Geraldton for the Kingstream Resources project should it go ahead?

Hon SIMON O'BRIEN: How much more material do you have for us?

Mr HARRIS: The committee might be interested in the deregulation process. As members are probably aware, the Government has announced the 100 per cent sale of the Bunbury to Dampier pipeline. The Government has called for expressions of interest from bidders and it expects to complete a sale by the end of this year. The Government will put to Parliament a Bill to sell the pipeline, and regulations for the access regime will be changed to accommodate a new pipeline owner. I understand the Government has had about 40 expressions of interest in purchasing the pipeline. A gas pipeline sale steering committee consisting of the Office of Energy, the Department of Resources Development and Treasury has been established. It is chaired by Ian Baker, the Chairman of AlintaGas, and it will manage the sale process. My involvement is primarily in the legislative and regulations area for access to the new pipeline. The regime governing open access will have a two year transitional phase to 2000. AlintaGas's pipeline access is governed by the gas transmission regulations.

Hon E.R.J. DERMER: The legislation was passed in 1994.

Mr HARRIS: Yes. Our intention is to have those regulations repealed and to substitute transitional regulations for the new owner. They will be substantially the same, but will take into account that AlintaGas will no longer be the owner. We will also take this opportunity to move towards the national access code for gas transportation pipelines, which this Government will agree to be consistent with by 2000. So, there will be a transitional phase for two years to 2000, when we will move to the national access code. All States will have signed and passed

complementary laws for that by next year. I am not sure of the timetable for passing the laws.

That process was started in 1994, with the signing by the States of the intention to move towards free and fair trading gas. It is a national agreement between all States and the Federal Government. The national access code is the outworking of that initial agreement. It is not finalised yet, but we have had a draft code for public consultation and that will be finalised by next month. The Office of Energy has been involved in that process. We hope to have a law passed early next year to make this State's laws consistent with those in the rest of Australia in relation to access codes for transmissions pipelines.

To some extent the current deregulation schedule will also be governed by our signing of the national access code. We currently have access on the Dampier to Bunbury line and the AlintaGas distribution system with consumers taking 500 TJ per annum or more from a single site. That access threshold will move to 250 TJ from 1 January next year to 100 TJ per annum by 1 January 2000. As I said, the gas market in Western Australia is dominated by industry. At 100 TJ per annum - we are talking about open access to all AlintaGas' transmission and distribution pipelines - that opens up 94 per cent of the gas market in Western Australia.

Hon E.R.J. DERMER: That is a progressive regime from 500 TJ?

Mr HARRIS: That is a move from 500 TJ to 250 TJ to 100 TJ in 2000. At 100 TJ, it is 94 per cent of the gas market. Therefore, 94 per cent of the market will be open to competition. That is significant. That is very different from Victoria, which has 50 per cent of the market below that level.

The Government has not indicated a timetable for moving beyond 100 TJ, but it has indicated that it will do so. New South Wales has indicated it will go down to the domestic level; that is, total deregulation of domestic gas. Theoretically, residential consumers will be able to buy from whoever wishes to supply gas, and that is not currently the case. AlintaGas currently has an effective franchise over residential supply in the south west. As we move towards the national access code, the State will look increasingly at moving beyond 100 TJ per annum, but that has not yet been determined.

Hon SIMON O'BRIEN: Under the national access code, that will apply when the various Governments agree, but gas producers may not be distributors. That is, they will be forbidden from having pipeline ownership as well.

Mr HARRIS: There must be some form of legal separation. Theoretically, they could have the same parent owner, but they must be "ring-fenced". I am not sure how far that goes. Naturally I agree that there is a problem in having a gas producer owning a pipeline.

Hon SIMON O'BRIEN: There is a supplier - for example Woodside - and a consumer, but in between there is the main transmission system. What are the issues in relation to who owns the means of transmission? That will very much dictate the end price of the gas.

Mr HARRIS: Yes.

Hon SIMON O'BRIEN: Is the means of transmission to some extent capable of being owned by the supplier or the customer, or is it a separate part of the chain and how does it work?

Mr HARRIS: It is currently owned by a transmitter and trader - AlintaGas. It is both a transmitter of gas and a trader. It is currently ring-fenced into separate business units with fire walls between the different businesses. They are not supposed to talk to one another. Some people in the industry are not convinced that that works. However, we must have some form of ring-fencing; that is, at the very least there must be separate accounting and profit structures. Otherwise there can be cross-subsidies between businesses.

Hon SIMON O'BRIEN: Hon Mark Nevill has recently compared the cost with the end user per terajoule of gas arriving via the goldfields pipeline to the price via the Dampier to Bunbury pipeline. I believe the goldfields pipeline was substantially more expensive. There might be some very good reasons for that.

Mr HARRIS: It is more expensive and there are a number of reasons for that. First, it is a different pricing structure. The pricing structure for the Dampier to Bunbury line is governed mainly on what is called a postage stamp tariff. No matter where one sends a letter in Australia it costs the same amount. The same applies for the pipeline: One pays the tariff from the north west to the south west, and anywhere south of compressor station nine - Pinjar - is one price. It is an average price, not a cost reflective price. The further gas goes the more it costs to transport. Because most of the market is in the south west, the price is determined on an average. Some people benefit and some lose. People in Bunbury are the beneficiaries - despite the fact that it costs more to supply Bunbury than Perth, they both pay the same price. The goldfields gas pipeline is not priced that way; it is priced on a per kilometre basis. The further away, the more one pays. That decision was taken at the time by the people who built the pipeline in consultation with the Government. There are different pricing systems around the world. We cannot say one is necessarily better than another.

Hon SIMON O'BRIEN: Do economies of scale work? I imagine the south west market would be a lot larger than the goldfields market.

Mr HARRIS: The Dampier to Bunbury pipeline has a greater capacity, so there are economies of scale. It was underwritten initially by Alcoa, which took a large capacity from day one and that kept down the price. It has always paid a form of full haul tariff. However, what it pays is confidential; that is a private arrangement with AlintaGas. The goldfields pipeline has a smaller diameter; it cannot carry as much gas, even fully compressed. Its economies of scale are not as good.

Hon E.R.J. DERMER: That was at 300 TJ as opposed to 500 TJ per annum?

Mr HARRIS: The goldfields capacity is less than that; that was Pilbara Energy. The goldfields pipeline is about 80 TJ. It is not a big pipe compared with the Dampier to Bunbury pipeline. It is a far smaller pipe that travels as far - the distance is almost the same as the Dampier to Bunbury pipeline. One would expect the price to be higher.

Hon E.R.J. DERMER: It is ratio to the distance travelled compared with the capacity?

Mr HARRIS: Yes. At Newman, where BHP takes off gas, it would pay about $1 per gigajoule for transportation. At Kalgoorlie it moves to about $3 per gigajoule. It is based on distance: The further one goes the more one pays.

Hon E.R.J. DERMER: You mentioned that the price for gas off the Dampier to Bunbury pipeline is averaged. Therefore, the people further down the pipeline pay more.

Mr HARRIS: Yes.

Hon E.R.J. DERMER: Is that averaging in the 1994 regulations?

Mr HARRIS: Yes; the pricing is based on those regulations.

Hon E.R.J. DERMER: If we were to look at a review of the regulations following the sale of the pipeline, that averaging price requirement would be up for review as well?

Mr HARRIS: Yes. However, the Government is saying that the price will come down. The Government will also fix the price for two years before we move to the national access code. At the moment, the average cost is about $1.25 per gigajoule delivered to the south west. By the middle of next year, the Government will knock about 10¢ off that. That is still an average full haul price to the south west.

Hon E.R.J. DERMER: That averaging policy for the pipeline will persist for two years?

Mr HARRIS: Yes. Under the national access code, we will move towards a regulator. As members know, regulators determine prices. Regulators tend to be at arm's length from government because that is the nature of regulation for open access. If they are doing their job properly, regulators should be independent from government. After 2000 we will have a regulator, so I cannot say what will happen then.

Hon E.R.J. DERMER: We can anticipate that the averaging policy will continue until the sale and until 2000, when the transition phase will lead to the appointment of a regulator?

Mr HARRIS: I am sure that Alcoa and others will put a strong case to the regulator that the average should continue.

Hon E.R.J. DERMER: The current regime is designed to achieve competition with third parties having access to the gas from the pipelines that they can then distribute. Those third parties can operate in diminishing scale as we go down to 100 TJ per annum as at 1 January 2000. The intermediate steps are 500 TJ and 250 TJ. If I wanted to service a particular town in the south west with gas as a private third party operator, I could purchase 500 TJ per annum from AlintaGas and resell that to individual companies or domestic users at a price that I negotiate with my customers. The service I am providing is the irrigation from the main pipeline through to the individual customers.

Mr HARRIS: I do not think that is possible in the current situation. It could be done when we move to full deregulation. These current levels are at a single site. It is a single take off point

from the Dampier to Bunbury line from which one could take 500, 250 or 100 TJ per annum. Of course, we also have the AlintaGas gas distribution system. Those levels also apply to the distribution system at a single site, unless one is taking gas directly off the transmission pipeline at a single site and then reticulating it - building a distribution system - that is theoretically possible.

Hon E.R.J. DERMER: There is no-one doing it currently?

Mr HARRIS: No. One would connect to a distribution system. It is more expensive to connect to the transmission system than to the distribution system. There is a proviso that it is at a single site at the moment. For example, if a company has locations at Welshpool and Osborne Park, they are regarded as two separate locations and the company cannot add its consumption together to get to the 100 terajoule, 250 terajoule or 500 terajoule threshold.

Hon E.R.J. DERMER: If I were involved in manufacturing and had a need for gas in Osborne Park and Welshpool, I would be able to access as a third party only from the sites that consumed more than 500 TJ?

Mr HARRIS: Yes. It has been done that way because AlintaGas has had a monopoly position. We are gradually moving away from that. However, because of that it has also had the take or pay contracts with North West Shelf Gas for which it is still paying. They were signed in 1980. That staggered process is, in some ways, protecting AlintaGas' financial position. We are trying gradually to ease it out of that and into a totally competitive situation. However, that cannot be done by sending AlintaGas broke; we do not want to do that.

Hon E.R.J. DERMER: What is a take or pay contract?

Mr HARRIS: It means one buys the gas from the supplier and pays for the gas whether or not one uses it. The original SECWA contract was about 393 TJ per day.

Hon E.R.J. DERMER: It is contracting to a minimum consumption rate?

Mr HARRIS: I was not involved, but it was based on a forecast consumption at that time that was overly optimistic in the resources boom of the 1980s. SECWA was landed with excess gas.

Hon E.R.J. DERMER: It was contracted to pay for that regardless of whether it was used?

Mr HARRIS: It is still paying for it. Most of the contracts do not run out until 2005.

Hon SIMON O'BRIEN: When did the contracts start?

Mr HARRIS: They were signed in 1980 and SECWA took first delivery in 1984. In 1995, the Government disaggregated the contract. It was one contract between SECWA and North West Shelf Gas. SECWA was the monopoly purchaser of gas. It purchased gas from North West Shelf Gas and then on sold it to Hamersley, Alcoa and others.

Hon E.R.J. DERMER: Vince Walsh of the Office of Energy produced a document dated August

this year. Given that there is one main source of transmission to points south serviced by the Dampier to Bunbury pipeline, the idea was to achieve competition through a relationship with third party suppliers feeding off that pipeline. That regime was to achieve greater minimum consumption to allow one of the third party operators to come in.

Mr HARRIS: That is right.

Hon E.R.J. DERMER: I was trying to visualise how the third party operators were notionally expected to compete and whether there is anything like that happening today.

Mr HARRIS: The theory is correct. Currently most consumers in the Perth metropolitan area are customers of AlintaGas. Once those thresholds come down and they are eligible for open access, they can go directly to the supplier of choice, whether it be North West Shelf Gas, Apache, Boral or whoever. Rather than buying from AlintaGas, they can buy direct. They must pay the cost of gas at source plus transportation. However, they will cut out the middle man - AlintaGas - as trader. We do not get to know the ins and outs of it, but once the manufacturers have reached the threshold, they shop around for suppliers. They also talk to AlintaGas. At the very least, they get a better deal from AlintaGas.

Hon E.R.J. DERMER: They present AlintaGas with the prospect of its providing a better deal or seeing them move elsewhere?

Mr HARRIS: That is right.

Hon E.R.J. DERMER: If I were running a power station using 300 TJ per annum, could I then on sell the remaining 200 TJ?

Mr HARRIS: Theoretically, yes.

Hon E.R.J. DERMER: I would be paying for my own irrigation to on sell the remaining 200 TJ?

Mr HARRIS: Again, the business to whom you on sold it must meet the threshold criteria. Just because your power station met those criteria at a single site, it could not pass on gas and become a reticulator within the distribution system.

Hon E.R.J. DERMER: I would need to produce my own distribution system to go into competition with AlintaGas?

Mr HARRIS: Yes.

Hon E.R.J. DERMER: That would be an enormous cost.

Mr HARRIS: It would not be economic to do that. It is a very carefully managed process. The Office of Energy has been closely involved in determining those levels. AlintaGas would have liked them higher and slower. We have tried to push them as quickly as we can. It is reaching a balance between what keeps AlintaGas viable but competitive. We are trying to open up competition. It is a managed process.

Hon E.R.J. DERMER: AlintaGas must be viable within the parameters set by its earlier take or pay contractual obligations.

Mr HARRIS: We are mindful of that. The State entered into that arrangement and it would be not be fair to leave AlintaGas in the lurch.

Hon E.R.J. DERMER: It is possible for a third party to buy in excess of 500 TJ. If it is not using that, at the cost of its own irrigation it could on sell the remainder to make up that 500 TJ, but in practice that is not happening. The advantage for the third party, if it were using the 500 TJ, is that it could then either buy from AlintaGas or the supplier direct.

Mr HARRIS: Yes.

Hon E.R.J. DERMER: It could then bargain with AlintaGas or develop a direct contract.

Mr HARRIS: Yes.

Hon E.R.J. DERMER: With whom would that be?

Mr HARRIS: The supplier of gas or a trader, although we do not have many at the moment.

Hon E.R.J. DERMER: Today it would be a direct contract with the consortium operating at Karratha.

Mr HARRIS: Yes, or a number of others. We expect that when the market develops we will have a number of traders. AlintaGas is the main trader at the moment. America has had gas deregulation for some time, and it has energy or gas traders who do not own assets but who buy and sell electricity and gas. Because they can put together deals, they get a good price. A manufacturing establishment in Welshpool, say, would ask the market to supply it with gas: Who can do the best deal? A number of people would compete to get that business. That is how we envisage it.

Hon E.R.J. DERMER: Earlier we discussed the capacity of the Dampier to Bunbury pipeline with a view to the increase in demand and the increased capacity as a result of looping. I gained the impression that looping would be a specific project to increase the capacity. The pressure is stronger at the earlier stage of the pipeline than later. It appears - again looking at the projection of more than doubling the State's capacity from 1995-96 through to 2010 - that there is a reasonable probability that there will be a demand for a second pipeline.

Mr HARRIS: There probably will be.

Hon E.R.J. DERMER: Vince Walsh presumes that the second transmission line is not feasible, if not undesirable. Therefore, the available avenue for competitive advantage is by way of the third parties having access to the main transmission line. It appears that within a short time, once there are two pipelines, that would open up a much wider range of opportunities for competition.

Mr HARRIS: Time frames are an issue. I am not sure in what context Vince Walsh said that the

second pipeline was not warranted.

Hon E.R.J. DERMER: He did not preclude it.

Mr HARRIS: Mr Walsh was saying that transmission pipelines are generally regarded as monopoly infrastructure. It is a natural monopoly; that is, it is difficult to duplicate it and almost uneconomic. It is easier to give third parties access than to duplicate. It is far more costly to duplicate than opening it up to better usage. That is what we are trying do with the Dampier to Bunbury pipeline - making better use of it by opening it up to third party usage.

However, there comes a point after compression and looping when it becomes more economic to construct a second pipeline. We will call for expressions of interest from the market next year to determine whether the market thinks there is room for a second pipeline rather than the Government's saying that there is a need based on its projections. As I have said, those projections call for a doubling by 2010. We want to let the market determine that. Governments these days do not do many of the things they used to do; it is more advantageous to let the market decide. We will let the market determine whether it thinks a second pipeline is warranted and what its optimum size should be.

Hon E.R.J. DERMER: It is the economies of compression as opposed to a second pipeline?

Mr HARRIS: Yes.

Hon E.R.J. DERMER: Under the heading "Deregulation of energy in Western Australia", the Walsh paper states -

> In energy the natural monopolies are taken to be the transmission and distribution systems. In other words, the wires and pipes. For a number of reasons (social, environmental and economic) it may be not considered desirable or even feasible to duplicate this infrastructure through competition. Instead, competition is promoted by opening up the use of infrastructure to third parties; in other words, to the end use consumers and suppliers.

Mr HARRIS: That is what I was trying to say: Generally energy transmission systems are regarded as natural monopolies; they are hard to duplicate. Certainly one would not want to build too many electricity transmission lines in parallel. There are also social as well as environmental reasons for that.

Hon E.R.J. DERMER: With our example of the Dampier to Bunbury pipeline and the point about the Government's opening up expressions of interest and gauging the willingness of otherwise of groups to pursue various options, the issue appears to be evolving to the point where the free-flowing capacity of the pipeline is getting close to capacity. Individual projects and other increases in demand will have to be met either by increased compression -

Mr HARRIS: We have just about reached that now.

Hon E.R.J. DERMER: The only remaining option is looping, and then we are looking at the

relative economies of looping to reach the demand required as opposed to a second pipeline.

Mr HARRIS: Yes.

Hon E.R.J. DERMER: The Government is approaching that by raising a question in the marketplace about increased capacity rather than specifying looping or a second pipeline.

Mr HARRIS: Yes.

Hon E.R.J. DERMER: If a second pipeline is created, policies relating to competition would then need to be entirely revisited to meet the new circumstances.

Mr HARRIS: It would add a new dimension because the pricing and access regimes for transmission pipelines generally assume they are monopolies. Once there are two pipes in competition, a regulator might say that is enough competition to determine prices. I am not a regulator, but they could see it that way.

There is another issue with the second pipeline; that is, the gas quality issue. If built, the second pipeline could carry a different gas quality than that carried by the Dampier to Bunbury pipeline. I said that the Dampier to Bunbury pipeline has gas that it must feed to Wesfarmers. Because Wesfarmers has a contract to be supplied, gas going in the top end must meet a certain specification. To some extent that rules out some gas from the North West Shelf.

Hon E.R.J. DERMER: It does not have sufficient propane and butane?

Mr HARRIS: One does not need the propane and butane to run a power station. There is some advantage in having a second pipeline with a lower gas quality specification. That could supply gas for power generation and non-domestic uses, because that gas quality is slightly different from industrial use gas.

We have not framed the expressions of interest process yet. Again, we might leave it to the market to determine whether it comes up with a different gas specification. That is another option that would make it very interesting for industry. It could certainly get cheaper industrial gas down here if it did not have to meet the rigorous existing gas quality specification.

Hon E.R.J. DERMER: If the market believes that the second pipeline is a viable option, surely we would then need to review the regulations governing competition thoroughly?

Mr HARRIS: That would be post 2000 and would come under the purview of a regulator. The regulator might decide that there was enough competition. The regulator would have to be careful that they were competing and that there was no collusion. I am not sure that regulators would be convinced that there was enough competition.

Hon E.R.J. DERMER: They might be offering a different service.

Mr HARRIS: That is correct: They might not be in direct competition.

Hon E.R.J. DERMER: Until when is AlintaGas locked into the contract with Wesfarmers to supply propane and butane?

Mr HARRIS: I think it is about 2005. I do not know the contract.

Hon E.R.J. DERMER: That is your understanding without knowing the definite figures?

Mr HARRIS: I understand that is true, but I have not seen the contract and will not be allowed to see it.

Hon E.R.J. DERMER: If I were interested in buying the pipeline from AlintaGas and were considering whether I was likely to be confronting a price regulated situation or a second pipeline, I imagine that would impact on the price I would be prepared to pay for the second pipeline. These things will be happening at the same time.

Mr HARRIS: The pipeline will be sold this year. The new owner will certainly not be prevented from expanding. In fact, that was made explicit because obviously pipeline bidders will want to know their rights when they buy the pipeline. If they wanted to expand, they would be able to do so.

Hon E.R.J. DERMER: The new owner would be able to do so.

Mr HARRIS: It could build a second pipeline; the new owner would not be prevented from doing so.

As the Minister said in the press statement about the sale of the pipeline, the Government is looking to expand the current easement from 30 metres to 100 metres. The current easement - the land either side of the pipeline that is used for access and compression stations - is 30 metres from top to bottom. The Government is looking to expand it to allow for additional pipelines from the north west and the south west. I am not sure how many would fit in that 100 metres, but it is certainly more than two. I would not like to put a figure on it, but there could be three or four pipelines in that area.

Hon E.R.J. DERMER: I imagine that the final price AlintaGas might receive for the sale of the pipeline would be heavily impacted on by potential buyers and their projections about a second pipeline and a new competitive regime that might follow.

Mr HARRIS: Bidders will factor that in. They probably have an advantage over anyone coming second; they will have a knowledge of the market and the economies of running pipelines. It could pre-empt anyone by building its own. If it committed to building one early, it would push out the date for a third pipeline a long way.

Hon E.R.J. DERMER: We could achieve a second pipeline without any competition?

Mr HARRIS: Yes. Again, the regulator would have to take that into account and ensure the pricing was not monopolistic. That is the job of regulators: To ensure that the owner does not take advantage.

Hon E.R.J. DERMER: There is a regulatory requirement. Because it is currently a monopoly situation, the price that AlintaGas is able to charge has a relationship to the cost of providing the service.

Mr HARRIS: Are you talking about the price to transport or sell gas?

Hon E.R.J. DERMER: As a consumer at Bunbury, I pay AlintaGas for gas and the transmission.

Mr HARRIS: AlintaGas deals as a trader and buys capacity on the pipeline, just like anyone else. Because it is a ring-fenced business trader - it is a separate business unit to the pipeline - it must pay the same price as anyone else to transport gas. It then sells the gas, but it must pay the same transportation costs.

Hon E.R.J. DERMER: AlintaGas might be selling the gas to its ring-fenced trading arm or anyone else. Is there a regulation requiring that the price AlintaGas charges for the transmission be calculated on the basis of the actual cost of the transmission, given that it is currently in a monopoly situation?

Mr HARRIS: The price was determined not by AlintaGas but by government when AlintaGas was first set up in 1995. It was determined by the Energy Implementation Group, which was established under the auspices of the Minister for Energy. It comprised various public officials and experts, who went through the cost of constructing the pipeline and running it. It also looked at pricing structures in America and elsewhere. It came up with a regime based on the postage stamp tariff and determined a price for three years from 1 January 1995 to the end of this year. As at the end of this year, AlintaGas must go through a redetermination of that price, which is currently $1.25. Every indication is that the redetermination will drop it by about 1¢ or 2¢.

Hon E.R.J. DERMER: Who does that?

Mr HARRIS: AlintaGas does the redetermination and generally the Office of Energy looks at it. We do not have formal powers. We advise the Minister and he sets the price. Under the new regime, we will move towards an independent regulator where the Minister does not set the price.

[The witness retired]

THE COMMITTEE ADJOURNED