

UNCONVENTIONAL GAS EXPLORATION AND MINING — MORATORIUM

Amendment to Motion, as Amended

Resumed from 13 June on the following motion, as amended, moved by Hon Alison Xamon —

That this house —

- (1) demands that the government place a moratorium on all unconventional gas exploration and mining in Western Australia until such time as it can be assured that such activities will —
 - (a) have no impact on local land users, including —
 - (i) no reduction of available agricultural land;
 - (ii) no reduction in local groundwater levels;
 - (iii) no saltwater contamination of groundwater;
 - (iv) no chemical contamination of groundwater; and
 - (v) no uncontrolled methane leakage from drilled locations.
 - (b) be governed by government regulations that ensure that —
 - (i) absolute transparency is provided to the public about which chemicals are used in all unconventional gas drilling and hydraulic fracturing (“fracking”) activities;
 - (ii) rigorous independent testing is conducted on all chemicals before they are used in unconventional gas exploration, drilling and fracking operations to ensure no adverse impacts on groundwater, human health and the environment; and
 - (iii) any liability for contamination of groundwater, land or community assets be borne by the company conducting the operations rather than the state and people of Western Australia.
- (2) calls on the Minister for Environment to direct the Environment Protection Agency to thoroughly investigate and review the risks of hydraulic fracturing technology and to assess all current and future proposals to undertake hydraulic fracturing in Western Australia.

to which the following amendment was moved by Hon Jon Ford —

To delete all words of the motion after “government” and insert —

ensure the Environmental Protection Authority has assessed extractive activities associated with unconventional gas exploration to establish there are no unacceptable environmental and social risks associated with these activities

HON PHILIP GARDINER (Agricultural) [2.08 pm]: Last time I spoke on this motion, after I made my brief introduction, I was explaining the difference between coal seam gas and tight and shale gas exploration and production, which is the unconventional form of gas exploration and production that is occurring in Western Australia. Coal seam gas is the form of unconventional gas being exploited in the eastern states. Much of the publicity has come from coal seam gas exploitation and exploration. The Nationals have just been involved with the Department of Mines and Petroleum in conducting two sessions in Dongara and Eneabba. Another is to be held this coming Friday in Gingin. At these sessions, the facts of fracking are exposed in a more complete way so that people have a better foundation on which to make their judgements. From these two public meetings we found that one of the great difficulties for any government in dealing with issues that raise intense emotion and interest is the credibility of those who are talking about it.

One of the sad observations that I made from the two public meetings that took place in Dongara and Eneabba last Friday is that the credibility of politicians, or we as parliamentarians, the oil and gas industry, the petroleum industry, and even the agencies that support the government in administering policy and making it work, is, regrettably, low. It had nothing to do with the particular individuals at those meetings. The speakers from the agency were outstanding. They were at the top of their field. They dealt graciously with those who asked very strong questions. They were able to handle all the import of the issue that was relevant, gave the facts as best as they knew and added to the body of knowledge of the area.

When people, especially the landowners and especially those at Eneabba, have been exposed to a whole lot of information that causes them great anxiety, be it right or wrong information, it is very difficult to correct perceptions and to give them an understanding of the facts that may be different from their current

understanding. It is a sad commentary because somehow we have contributed to our own lack of credibility. I would love that to be different because it does not have to be like this. One of the great difficulties we have relates to water. People who came up to me at the end of the Eneabba meeting said, “Why can we not be sure that we have a baseline of any water that is prone to be affected by the exploration and use of fracking so that we can see whether there is any change in quality as a result of it?” That was such a sensible suggestion. That is not meant to understate the measures that the Department of Mines and Petroleum is already carrying out. We need to be aware that the department is there to regulate mining environmentally—it is not there to give it a free run—and to ensure that the laws that we have are complied with. During the course of that regulation as it applies to unconventional gas drilling, if I can use that term again, different parts need to be approved by the Department of Mines and Petroleum, which also has an environmental section so that the approval must take place prior to any activity occurring. The environmental management plan has to be signed off, a land access agreement has to be signed off and a number of other aspects have to be signed off before a single bore is drilled at any particular site.

I know that the department’s role in these things is to focus on the most serious risks. In the past—this was raised at these meetings—the Auditor General put out a report that indicated that a number of the regulatory activities for which the department is responsible were not fully regulated so that there was noncompliance. When that was examined, it was almost entirely in the areas where the resources required for regulation may not have been sufficient to cover every segment of regulation but where the risk was warranted, the risk was regulated. That is one of the key elements that we as a government need to understand. There are risks every way we turn. The materiality of the risks is relevant for government in ensuring that there are mitigation measures. I have growing confidence in the fact that the department responsible for mines and petroleum is dedicated to ensuring that the risks are understood and prioritised and that, as a result of that prioritisation, the relevant focus is given.

There are other laws that limit what the Department of Mines and Petroleum can do. When there is a blending of agencies, such as the Department of Water, one finds that they have different strengths. The Department of Water is able to take a stronger direction in what needs to be done about the quality and testing of water much more so than that of mines and petroleum. When we start linking agencies together, the risk mitigation is strengthened. One of the things that has emerged from these public meetings about fracking is that new ways and new interactions are happening to give comfort both to the landowner and to the government through directing the industry to undertake certain measurement procedures.

As members would know, I have a keen interest in global warming. Global warming is largely about greenhouse gases, of which one of the greatest is carbon dioxide as a first-off greenhouse gas, which contributes to the emergence of water and everything else in the atmosphere, contributing to global warming. Although gas is not a panacea to cutting out any contribution to greenhouse gases and carbon emissions, it does make a major reduction. There are those who perhaps overstate the importance of what is called fugitive gas. This is the methane gas that comes out of the seals of the bore where the casing goes down but gas may escape between the earth and rock and the soil of the casing. Some who had some knowledge in this area suggested at these meetings that extremely few wells have that fugitive gas escaping. But, of course, there is a totally incomplete system for measuring it anyway. So any assertion, by both those who say that there is a lot and those who say that there is a little, can be only fictitious, because there is no factual base. It is important for each side of the argument in this industry to grasp the desire to improve the base of knowledge we have rather than push an interest for whatever vested outcome is sought. And that brings me to the core issue about a moratorium. I cannot see a moratorium doing anything to build the base of knowledge on this. Given the regulation that is already in place—we need to take some note of this, because we are talking about an agency that is saying that we have regulation; it may not be perfect and can always be improved, as can everything, but there is regulation—it means that there is a moratorium on every bore before it is drilled. Is that a moratorium? The reality is that it is a moratorium, because no bore can be drilled until approval is given by the agency. Those who are advocating a moratorium already have it. They need to be looking not at the moratorium aspects of it, but at the risks first. As I stated at the meeting, I have looked at the risks; in fact, I have changed my mind on the risks, because I thought the risks were huge when I was exposed to the film *Gasland* to which I referred when I first spoke on this matter last week. *Gasland* was a propaganda documentary to suit a certain end interest. It certainly convinced me for a time.

Hon Jim Chown: I didn’t think you were that gullible!

Hon PHILIP GARDINER: Sometimes I am, Hon Jim Chown, as I obviously was in this case.

Hon Wendy Duncan: But he does his homework, though.

Hon PHILIP GARDINER: I thank Hon Wendy Duncan. I did check. When I checked, nearly every assertion in that documentary was false. I say that with anger because it convinced not only me, but also many others who did not have the time to check.

Several members interjected.

The PRESIDENT: Order, members! We were going very well until a couple of other members decided to help Hon Philip Gardiner make a speech. I think he is very capable of making it on his own.

Hon PHILIP GARDINER: We need to be curious. Curiosity is one of the attributes that humans have. We cannot cut that channel off, because if we do, it affects the judgements that we make. I think it is important that we keep on being curious so that we can run each thing down the burrow until we reach the end of the burrow and satisfy ourselves of the facts. That is why I think that a moratorium will not achieve what I think the industry, environmentalists, the agency and the state want. We must remember that this resource of unconventional gas will last us for about 300 years. This does not include the offshore gas that we are already selling and exporting. We already have a resource for 300 years. I am sure that renewable energy will take over in 15, 20 or 30 years as technology improves and the costs reduce. But, in the meantime, from my perspective—I know many others disagree with me about global warming—it is important to have something that is less carbon polluting than the other carbon fuels that we use. The sooner we can do that, the better. It will also be cheaper for people in this state. Those of us who have normal energy use in our homes and everywhere else that gas is connected can similarly benefit from just the economics of it.

Although the people who are concerned think for some reason that a moratorium is the right way to go, they need to recognise that before every bore is drilled, there is an effective moratorium in place. The more fruitful exercise that I have tended to favour is that we need to identify each of the risks and then work out whether we understand the best mitigation measure that is in place; and, if it is not good enough, let us see what we can do to improve it. Let me give one of the clear risks that was pointed out. I will go through what happened. After the meeting at Eneabba, I spoke to a woman whose family owns land on which a bore exists and on which there will be a vertical frac. A vertical frac is just a hole going straight down into which the explosive or whatever causes the frac will be lowered. It will explode horizontally. There is no horizontal drill deep down in the ground in this case. They are still at the exploratory stage. This will commence in July, so it is not a long time frame; it will be quite quick.

In that testing, people think that fracking can cause earthquakes, as has allegedly happened in Lancashire—again, that is repudiated—and can cause miscibility of gas with water if gas is down there, and they are confident that gas is down there. How will that affect groundwater supplies? Under the environmental management plan which the agency receives from the proponent—the company drilling—and in which it ensures that it covers all it needs to know about any particular program before it signs off on it, the company has to put down three monitoring bores so that it can monitor the water in those three bores. But the landowners are particularly concerned about the soaks—the surface springs that arise from underneath the soil—and their bores and dams. We worked out a very simple solution between us. Why does the company involved with the bore not undertake to test, within a radius of 300 metres, 500 metres or a kilometre, or whatever the Department of Water thinks is a fair distance, each of those water points now so that there is a baseline? If that was a directive to the industry prior to drilling, a lot of comfort would be given to the landowners that at least they will see whether any damage occurs over the following two, five or 10 years. That will not stop the risk, but it can measure some of the outcomes of the risk. The risk is stopped by other measures, such as the quality of the casing that is being put down around any bore, the quality of the cement and concrete that form the outer casing, and the quality of the steel going down. Let us remember that this has to last for a very long time. It is not as though this is new in the industry, because America has learnt a lot from its own experience and occasionally casings have fractured, so there is a regulation that ensures that the right materials and processes are used for the injection of the cement to make the concrete outer casings and then for the inner casings with steel and subsequent cement materials.

One of the issues with the water used also relates to the chemicals used in this business. For a start, the chemical compounds that are abbreviated to BTEX have been of concern to many because they have been used in fracking. BTEX are contained naturally in the gas and the condensates coming out, so BTEX are around in the industry anyway, but when added to the group of chemicals that are used, there is a concern that they become quite toxic. I understand that in Western Australia BTEX are banned from use in any fracking chemical mix. The problem for any of these companies with the chemical mix is that although most of the dangerous chemicals have been identified, each has a mix of chemicals that is regarded as proprietary. Part of the success of drilling depends upon that chemical mix. Members should not think that drilling muds is a new thing. Every bore that has been put down in Western Australia to drill for anything—not just gas or petroleum, but also gold, manganese et cetera—requires a drilling mud, because that gives the slipperiness, if you like, for the machines to work in the different soil horizons. But the drilling muds also vary with the componentry of the chemicals. The

agency is asking to make the chemical mixes public, but that is not something it can do legally. All it can do legally is to be advised of the chemicals that are being used. The agency knows what is being used, and at this stage we rely on the agency.

Hon Adele Farina: Why don't they disclose that?

Hon PHILIP GARDINER: It is because that is the proprietorial knowledge of the companies. The member can ask why we do not get them to disclose that straightaway or maybe there can be a time line and they do that after 12 months or two years.

Hon Adele Farina: What is the big secret if it is a chemical that is in existence?

Hon PHILIP GARDINER: No; it is the mix of chemicals.

Hon Alison Xamon: It needs to at least be in the data sheets.

Hon PHILIP GARDINER: No; the material data sheets are all there.

Hon Alison Xamon: None of them was able to be tabled in this place at all!

Hon PHILIP GARDINER: The reason that they are not tabling them—I do not know whether or not this is true as I have not tested this—is that the companies regard the chemicals that are used as proprietorial; it is not just the mix, but which chemicals are used. The second thing that is equally proprietorial, I am told, is the mix or the ratio. When it comes to agriculture, we have much more of a perfect competition environment. When we have perfect competition, all knowledge is dispersed; there is nothing that can be held that is secret enough to give anyone any advantage. A lot of economic rationalism theory is based on perfect competition, and that is why it is false. Economic rationalists are not right, because there is no such thing as perfect competition in the economy, is there?

Hon Giz Watson: There could not be!

Hon PHILIP GARDINER: Exactly, and that is why anyone who is an economic rationalist is a theoretician of the worst kind. We have to deal with practicalities, and the practicality of the world is that we have a whole lot of different organisations and entities and if they have innovations, they want to keep them tight to themselves so they can get an advantage. The object of most commercial activities is to control as much as they can. We do not have perfect competition. The oil industry is in that bracket above it. Those companies are competing with each other. They are trying to do it more economically and more commercially to get an advantage. That is what we call normal economic activity. That is what it is; we cannot change it easily any other way.

Hon Adele Farina: But what about the right of the community to know what chemicals are being pumped into the ground?

Hon PHILIP GARDINER: We rely on the agency there. It is interesting the member asks the question, because what she is asking is the same thing as those people in Eneabba, and Dongara to a lesser extent, are asking; it is because she does not trust the credibility of the agency or us as parliamentarians —

Hon Adele Farina: We don't get to see the information either, so why would they trust us?

Hon PHILIP GARDINER: We do not trust anyone. The credibility of those whom we trust to regulate is low. We are exposing that in the same way here because we do not trust the agency to do it. I am not against transparency. I believe in transparency in the same way as Hon Adele Farina, but I have to make compensation for firms, companies or individuals who create or innovate something. They should be given time to benefit from the innovation; otherwise we will not get innovation. The issue in my mind is time. The chemical aspect is very important. The agency has regulations about it, but that is as far as we can go to trust it at this time.

The other very important issue is the land rights that each individual landowner has. Currently, we can shut out any organisation, company or person who wants to come onto our property to search for minerals, but we cannot do that under the current law for gas or petroleum. The reason that we cannot do it is that governments have accepted that gas and petroleum are strategic resources and therefore wherever they are should be accessible to exploit the resource. That is a very interesting point, because as someone said to me up there—that is why it is always good to get out because we always come back with new perceptions and ideas—if it is a strategic resource why are we exporting this gas to the rest of the world? What is the answer to that?

Hon Jim Chown interjected.

Hon PHILIP GARDINER: It is a defence strategy and maybe the best one we could have—except if they come, then they have it! It is interesting whether it needs to be a strategic resource when we have so much gas in this country compared with other countries. It all depends on how much of it we have. If it will last for 300 years, it is hard for me to justify that it is a strategic resource over iron ore. There is a question about

reviewing that aspect of the current law. At the same time, if we have false information that is being perpetuated around our society and community, as it currently has been about this tight gas–shale gas business, and everyone is so concerned about it, they will shut all the gates until the facts are known. Then we can say that if we have a moratorium on any of it, it does not matter because we will get all the facts sorted out and then have the gates opened up. But with the philosophy of economic growth under which we currently operate, we need to have those things occurring in a time that is reasonable and in which the risks are mitigated to the point that there is no killer risk. With unconventional gas of the tight gas–shale gas type that we have in this state, for the life of me I cannot see the killer risk that requires a shutdown of the industry as a whole, bearing in mind that every bore will be shut down until it is demonstrated by the agency that mitigation measures are in place to deal with the risks that are currently understood.

The Nationals' view is that although a moratorium is one option, we do not think it is the appropriate option in this case. We believe that we need to understand all the risks that we can identify and have risk measures in place to mitigate those risks. If there are risks for which we do not yet have those risk measures in place, we should have a reference group comprising people from the science field, industry and the community who can examine those risks and report back to government, such that risk mitigation measures can be determined and applied.

Let me come back and finish on the point about the land evaluation and compensation for the landowner. Currently, no framework is in place for evaluation of the compensation that should be paid to a landowner. Sure, it goes to a magistrate when there is a dispute, but what does a magistrate really know about the nuances and the breadth of all the varying bits and pieces about which a landowner is concerned? Agriculture is a varied and quite complex area. What is more, those who are serious farmers have an emotional attachment to their land, which also causes a problem. I am very concerned whenever a heavy vehicle goes across our paddocks because of the compaction. People say, "What's the problem with that?" It is just that it compacts the soil, reduces the development of the organic carbon, and therefore reduces the ability of the soil to hold on to the nutrients; and, if it is done two or three times, we can see where the runs are. There are a whole lot of nuances such as that. It would be the same if we had ewes lambing in a paddock or cows calving in a paddock. Disturbance and that kind of thing can cause mismothering if twins are involved, and so on. There are a lot of things around that. If there is a bore in the paddock, we have to make sure we go around it. If there are two or three bores in a paddock, we may not be able to run our machinery in the most efficient way.

These frameworks have already been developed by Western Power. When they were developed, they were for the powerline between Three Springs and Karara, for the Karara iron ore deposit, east of Morawa. My electorate officer, Phil Bellamy, and I have used that framework to negotiate a settlement between a few of the landowners who had difficulties with negotiating and Karara. That framework was a very useful structure to reach a conclusion. That framework needs to be done for this industry also. One of the biggest concerns for this industry is that if there are exploration wells that are producing and the landowner wants to sell the land, it will be a different kind of buyer paying a different kind of price because they have these wells on their property, unless there is some transfer of value to the person buying the land. Therefore, I think that we need to get a framework developed as soon as possible, and that framework can also include and reinforce the issue of testing the water bores and those kinds of things.

In all, it is the view of the Nationals that understanding the risks and working out the risk mitigation measures when they are not appropriate and improving them is the best way to go, rather than the moratorium as explained in this motion. With that, I leave it to the house.

HON KEN BASTON (Mining and Pastoral) [2.45 pm]: I would like to say a few words on this motion as well. It has been an interesting debate so far. When I first read the motion, I was almost in disbelief that we could place a moratorium on something that has been going on for so long. The motion reads as though we are dealing with an untried and novel method of exploration in mining. Instead of that, the practice has been used for at least six decades in two million wells. There is an article on the Halliburton website that suggests that this practice was first used in the Hugoton field in Kansas in 1947. That is a very interesting website. I would recommend it if anyone wants to look at it. Halliburton is a huge company that has some 60 000 employees in more than 70 different countries throughout the world. Of course, it has been in the oil and gas industry for a long time. The website also says that there have been 1.1 million successful operations, which have delivered some 600 trillion cubic feet, or some 17 trillion cubic metres, of gas. It appears that this has been going on for a long time and that it is a successful technology.

In Western Australia, the technology has been in use since 1958. The first well was drilled by Western Australian Petroleum Pty Ltd 100 kilometres south east of Broome, with a fracture range of between 1 161 and 1 196 metres. Interestingly enough, WAPET was also first to discover oil in Western Australia in 1952, at Rough Range. Those tapped wells are still sitting there. I have to say that many years ago when I was a lot younger and

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we were told that there was oil in those wells, we actually got a large spanner, turned on the tap, and, sure enough, oil came out. The problem was, of course, that when we had to turn the tap off, the wind was blowing over the whole bore head, and it was a matter of getting covered in oil. Yes, I have experienced raw oil at a younger stage of my life, and that well is still there today. It was only a matter of time before further oil was discovered up there at the North West Shelf.

Interestingly, on Barrow Island a total of 740 fractures and re-fractures have been carried out since 1964. It is also worthy of note to see where in Western Australia this technique has been used. In the Kimberley, it ranges from Wyndham to south of Broome, including Derby and Fitzroy. In the midwest, it has been used in Dongara, Badgingarra, Jurien and Leeman, and it has also been used in the south west of the state, south of Busselton. Some of these wells went as deep as 4 500 metres. All those statistics come from the Department of Mines and Petroleum. Of course, all technologies have some risk associated with them, but I cannot recall any adverse reports as yet from Western Australia.

How does it work and what are the risks? It is the use of high pressure to fracture rocks and to push fluids carrying sand or similar material into the cracks, as other members have said in here today. The pressure is reduced and the proppants stay behind and hold the fractures open and act like a wedge; the gases trapped are then accessible. Hon Phil Gardiner touched on the fact that the estimates of reserves in Western Australia are some 288 trillion cubic feet, twice as much as what is held in the WA offshore areas. It is estimated to be sufficient to power 228 cities of one million people for 20 years. We hold the world's fifth largest reserve of shale gas.

The motion refers to unconventional gas exploration and mining. Apart from the reference to hydraulic fracturing, there is no indication of what is further meant by "unconventional". I will confine my remarks to where the use of fracking has been in the news—in Queensland and New South Wales. Publicity has centred around the possible—I stress possible—impacts on groundwater and underground aquifers. A look behind the news shows that the gas referred to in those reports is typically coal seam gas, better known as CSG. CSG is similar in composition to tight gas and shale gas, but with the significant difference that CSG is typically found in shallower depths of between 300 and 1 000 metres. Interestingly enough, Hon Phil Gardiner touched on something when he was talking about drilling holes and explained that mud is put down them. That is correct. I chaired the Carnarvon Artesian Basin Advisory Group for some five or six years when we did a drilling program there. Heaps of mud was used not just to create the friction but also to have the hole stand up before it is cased. The mud sticks to the outside so the casing can be run down and then, of course, the concrete et cetera. It has low potential for development in Western Australia because the depth for the shale or tight gas is at a lot greater depth than it is for CSG. With regard to the depth of CSG at 300 to 1 000 metres, it is interesting to note that the deepest bore we put down to the artesian basin was some 600 metres. A bore is about to start at Monkey Mia, Shark Bay to 457 metres, which is quite interesting because normally the artesian basin drops off to the south. It usually goes down a couple of hundred metres, but if it goes across to Shark Bay and comes out at Monkey Mia, it goes up again to get that artesian water. It costs \$1 000 a metre by the way, so it is quite an expensive project, but it is the only source of water.

The difference is that tight gases are found at much greater depths than CSGs, usually in excess of 2 000 metres. The Dongara fields that have been operating for over 30 years are conventional wells at a depth of 2 200 metres. The Irwin coal measures are in excess of 2 500 metres and it is at these depths and further that so-called unconventional exploration and development will take place. The Yarragadee aquifer, mooted as a major water supply in the future, is some 600 metres deep. The Broome aquifer is only 25 metres deep. The Wallal sandstone in the La Grange aquifer just south of Broome has a depth of around 100 metres and is highly saline, which is interesting. It puts some context into concerns around the groundwater when these depths are taken into consideration compared with the depths of drilling for tight and shale gas.

What is the process? As I said previously, it is the use of high pressure to fracture rocks and push the fluids carrying sand or similar material into the cracks. Drilling might take some six to eight weeks. The total fracturing operation can take up to a week. The actual fracking takes place over a matter of hours. Once this has happened, the proppants stay behind and keep the cracks open. After the pressure is reduced, of course, the carrying fluids can flow back to the surface and be disposed of. The interesting question, I guess, is: what is in the fluids? To digress a bit, Buru Energy, a company that many members may not be familiar with, has just discovered the first oil discovered in Western Australia for 12 years about 130 kilometres east-south-east of Broome, and that is very exciting. That company will probably extract shale gas as well. It will start trucking the oil it has discovered to the BP refinery in Perth shortly, and it is drilling further wells. I believe that discovery in the Canning Basin has huge merit and, of course, Buru will possibly invest in tight shale gas exploration.

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Buru Energy says that the fluids pumped in are 99 per cent water, and one per cent chemicals. Halliburton says they are 99 per cent water and sand and one per cent chemicals. The Queensland government, which is where CSG fracking is causing some controversy, uses the figures on its LNG website. What are the chemicals that cause concern and how valid are these concerns? The Queensland government lists sodium hypochlorite; hydrochloric acid; surfactants, used in soap; cellulose, the building block of plants; acetic acid, found in vinegar; and bactericides. These and other chemicals in the fluids make up this one per cent in concentrations of parts per million.

Why are companies looking at exploring for tight and shale gas in Western Australia? The carbon tax is looming and will make electricity production more expensive when produced from coal. Emissions from gas are generally accepted to be some 50 to 70 per cent less than coal, depending on whether it is brown or black coal or the type of power station of course. The efficiency of the motor comes into it as well. Gas is seen to be a cleaner energy. The cost of exploring, development and production of conventional fields is rising and are becoming more difficult to find. Shell is building a platform that will extract gas from offshore, some 450 kilometres north of Broome. It will be a very expensive exercise to build a platform equivalent to 600 000 tonnes. I think I might have mentioned in this place before that it makes the American aircraft carrier that visited Fremantle recently look like a dingy, and that was pretty big, as those of us who went and saw it know. We need to be aware that the conventional supplies that can be easily developed are diminishing. The demand for gas is rising worldwide and we need to meet our export contracts. There is community concern in the eastern states about the possible threats of coal seam gas exploration and development to farmland and water supplies. I think the seminar Hon Phil Gardiner will run is an excellent idea to put to bed some of the myths people have about “bubbling brooks” coming out of the ground.

I would like to touch on the management. The original motion refers to a moratorium on unconventional exploration and mining until a series of assurances are given. These assurances appear to be resolved around contamination issues relating to the practice of unconventional gas exploration and to the chemicals used. We all need to be aware that when we draw comparisons they need to be between like and like and not apples and pears. Proposals such as those of Buru Energy are for the exploration and the development of shale and tight gas to depths of 2 000 to 4 000 metres, not for exploration and development of CSG. With two exceptions, since 1958 exploration has been at depths greater than 1 000 metres and 13 of them at depths exceeding 3 000 metres, well below any watertable, particularly those watertables I mentioned. The chemicals used are such minuscule concentrations that they pose no threat to the environment. We already successfully manage chemicals that have greater potential in other mining operations. Regulation processes are tight for all other oil and gas exploration and development. The Environmental Protection Authority has an assessment role depending on where the activity is proposed. The Department of Mines and Petroleum requires full disclosure of all chemicals used in the process. Solutions that have the potential for harm are not approved. Can we ever guarantee the conditions of this motion? The answer is no, but like all other mining activities, conditions are placed on this activity to minimise risk. We face risks every day. Crossing the road is a risk. After coming in through the rain this morning, people riding bikes poses a risk! It amazes me. People take risks every day; that is what life is all about. Should we put a moratorium on crossing roads or should we ban bikes on the road?

Hon Max Trenorden: I vote for the latter!

Hon KEN BASTON: What we have done, Hon Max Trenorden, is build cycleways. We have compromised.

Hon Giz Watson: Get cars off the road.

Hon KEN BASTON: I guess Hon Giz Watson is leaning back the other way by wanting to do away with gas and get rid of cars. If that happens, someone will want a faster bike. We did have bikes once; then they put little motors on them, then we got scooters and then they moved to two wheels and then to four wheels, and so it will be repeated all over again.

Hon Peter Collier: You're a font of knowledge on the evolution of transport!

Hon KEN BASTON: Absolutely. It goes a bit further, but I will not go down that path because I might start carving rock wheels!

We regulate traffic speeds which, in some places, I do not necessarily agree with. In other words, we regulate to minimise harm. I refer to a quote from Dennis Cooke, who is Program Manager for Unconventional Resources at the University of Adelaide. He wrote —

There is a slight risk that this fracture stimulation process can break out of the gas reservoir and grow into distant shallower aquifers. The oil and gas industry say that contamination of a shallow aquifer via fracture stimulation has never happened in the 1.5 million frac jobs that have been performed in the past 60 years.

I refer to Halliburton and the chemicals it uses, bearing in mind that with 90 per cent water and nine per cent sand, which is 99 per cent, that leaves one per cent chemicals. Some very good pamphlets were sent to all members describing exactly what those chemicals are or equal to. Petroleum distillate, which is used to reduce friction, is 60 parts per million; bellacide or bactericide is eight parts per million; ammonium chloride, which prevents the clogging of a well, is 20 parts per million; guar gum, which is a natural gel, is 200 parts per million; sodium persulphate is a gel breaker that is 20 parts per million; hydrochloric acid is 135 parts per million; and, propargyl alcohol, which inhibits corrosion, is one part per million. And so it goes on. The petroleum distillate makes the fluid very slippery. Similar products are used in the manufacture of hair, makeup, skin and nail products. Bellacide is used to prevent action interfering with the other additives and the well casing. Ammonium chloride prevents clay minerals sticking to the side of the well during fracking. It occurs naturally as a mineral and is used in cough mixture, processed foods, shampoo and diverse industrial processes. Guar gum is a natural gel that is also used in processed foods, such as ice-cream, sauces and salad dressings to thicken the fluid and to keep the sand in suspension during the injection of fracking fluid into the reservoir rock. Hemicellulase enzyme is a natural enzyme with wide application. For example, it is used in laundry detergents and for the drying of coffee beans. In fracking it is used to break down the natural gel when fracking is completed.

Hon Jim Chown: So what you're saying is that these chemicals are no more toxic than the household chemicals that are used in millions of homes throughout the world.

Hon KEN BASTON: Absolutely. They are all used now; they are all around us.

We can obtain value from this for the future of gas, remembering that this gas is onshore. Any other gas is offshore and the royalties go to the feds. I believe the royalties should go to the state. It is very important. In fact, the only way we have an advantage offshore is to have LNG plants onshore so that we can take advantage in those regional areas.

I do not support the motion. Placing a moratorium on unconventional gas exploration when it has been going on for 60 years is not in the interests of this state or country.

HON GIZ WATSON (North Metropolitan) [3.07 pm]: I rise to support the motion as amended by my colleague Hon Alison Xamon. The motion proposes that the government place a moratorium on unconventional gas exploration and mining. I will talk in particular about the concerns of the people in the Margaret River region, but I will start by talking more generally.

There are concerns, concerns that I share, that current fracking activities are not being assessed and that we are not being given information, particularly information about the chemicals that are used in those operations, because of commercial in-confidence requirements of the companies that produce those chemicals. To respond briefly to some of the contributions that have suggested that these particular compounds are in a very small portion, anybody who knows anything about chemistry and human biology knows that there can be problems with very small amounts of particular chemicals. To say simply that a chemical has so many parts per million and, therefore, we do not need to worry about it is very naive and ill-informed. We know that where gas fracking has occurred in other parts of the world in similar formations to those being targeted in Western Australia, a range of serious environmental impacts have been observed. These impacts range from irreversible hydrocarbon and chemical contamination of groundwater aquifers to induced seismic activity. It is interesting that a lot of the knowledge we have has come from US fracking, where it has been occurring on an extraordinary scale. I acknowledge, as members have pointed out, that there is a difference with shallow fracking and that some of the issues that are referred to in the film *Gasland* are not likely to occur in Western Australia. But that does not mean that there are not similar serious concerns. When I was working in the environmental sector 20 to 25 years ago, I had cause to look at groundwater pollution in the United States. It has an atrocious record of contaminating the groundwater for a range of reasons. I would not look to the regulatory environment that exists in the United States to protect our precious groundwater resource. One of the things I learnt from talking to groundwater experts in the US is that once a groundwater resource is contaminated, it is virtually impossible to decontaminate it. There is no realistic or practical way of removing contaminants from groundwater. I had examples from California where groundwater had been polluted with industrial chemicals.

Pathways for gas and chemical contaminants for groundwater aquifers include natural faults that may transmit contaminants through geological profiles, leaking gas wells or well casings themselves. There is little to no detailed information about the natural interaction between Western Australia's groundwater systems and the underlying geology. Given this, gas fracking in Western Australia is to allow very large and risky equipment that could permanently compromise the groundwater that Western Australians rely on for drinking, agriculture production and food security.

I refer to the regulatory framework here in Western Australia. I want to give members some examples of why we have very little confidence in the existing regulatory framework. As has been pointed out, gas fracking is already

Extract from Hansard

[COUNCIL — Wednesday, 20 June 2012]

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Hon Philip Gardiner; Hon Ken Baston; Hon Giz Watson; Hon Max Trenorden; Hon Alison Xamon; Deputy President

occurring in Western Australia without environmental impact assessments and with no regulatory oversight by either of the government's environmental agencies—that is, the Environmental Protection Authority or the Department of Environment and Conservation. In fact, this is regulated under the Petroleum Act, which is administered by the Department of Mines and Petroleum.

A growing number of independent reports highlight the series of inadequacies with DMP's environmental regulation regime. Last year, an independent report was commissioned by DMP to assess the adequacy of its regulatory regime specifically for gas fracking. One of the most significant findings of this report was the lack of legal powers to enforce environmental conditions placed on fracking projects by DMP. The agency lacks the necessary legal powers or statutory compliance tools to effectively regulate. Furthermore, the regulatory regime that applies to gas fracking, much like mining, operates with virtually no transparency. Under the current regime, information—environmental conditions applying to projects, compliance with conditions, environmental monitoring data, chemicals used in gas fracking or any other information—is treated as commercial-in-confidence. This means that serious contamination of groundwater or surface water could occur as a result of gas fracking operations and the local community or landholders may never be informed.

Finally, perhaps because of the problems outlined just now, the Auditor General has found that DMP has been critically deficient in its compliance monitoring and enforcement activities for environmental conditions across the entire suite of extractive activities that it regulates. Given this combined lack of enforceability and lack of transparency, the current regulatory regime for gas fracking in WA amounts to little more than a secret deal between regulators and industry under which compliance with environmental conditions is voluntary.

The next point I want to touch on is the community concerns about gas fracking. At the outset, I acknowledge that most people do not normally consider the complexities of mining and fracking and the chemicals used and the possible impacts on groundwater. It is a complicated area and there has been some overreaction and misinformation and I readily acknowledge that—not from the Greens; I mean within the debate on both sides. Our job as Greens is to try to ensure that the information is available with which people can come to an informed decision. That is what this motion is about. It is about saying, "Let's put a stop to this until we can get all that information into the public arena."

Some concerns about the Margaret River region have certainly been raised with me. There is concern about the significant liability that landowners are likely to be left with as a result of gas fracking activities, including potentially reduced access to groundwater, contaminated groundwater and surface water, ongoing fugitive methane emissions, high risk and uninsurable infrastructure on farms and very significant service disturbance with associated loss of agriculture production. It is easy to see that the level of anxiety in regional communities about gas fracking is ongoing.

At this point it is worth reading into the record the comments from the media release from the WA Farmers Federation dated 1 June this year, which is entitled, "Fracking not a minor concern for farmers" —

The Western Australian Farmers Federation ... calls for the State Government to implement a moratorium on hydraulic fracturing ... projects until farmer concerns are addressed.

Farmers are increasingly concerned about the extraction of unconventional gas deposits as more fracking projects in Western Australia are being considered.

WAFarmers President, Dale Park, said WAFarmers' principal concerns in terms of fracking are the direct impact on landholders and the unknown environmental and water impacts. "WAFarmers has concerns that currently the legislative protection offered to farmers through the Mining Act 1978 does not exist in the Acts which allows for gas and petroleum exploration activity on farmland," Mr. Park said.

"Specifically, Section 29 of the Mining Act 1978 contains the 'power of veto' which requires that mining tenements cannot be granted without the consent in writing of the owner and occupier of private land where agricultural pursuits are being carried out.

It goes on to say that WAFarmers is seeking an amendment to the Petroleum and Geothermal Energy Resources Act 1967 and Petroleum Pipelines Act 1969 to address their concerns. A bit further down, the media statement reads —

Mr Park believed the mining industry should pay for its own exploration and not use State Government funds.

"I have criticised the State Government for paying resource firms millions of Royalties for Regions dollars to search for gas deposits on agricultural land, perhaps a better use for these funds could be to fund research into the impacts of fracking," Mr Park said.

I thought that was a good point. Perhaps that is another comment about how royalties for regions money might be used for true sustainability in regional Western Australia.

I turn to the Margaret River region in particular, because, as members will be aware, it has the potential to produce unconventional gas and has been subject to some fracking in the past. Fracking in the south west thus far has taken place only in the Whicher Range, which is a tight gas field. The Whicher Range gas field is approximately four kilometres below the surface, which presents a series of technological difficulties in and of itself. Interestingly enough, previous exploration and fracking exercises have not yielded enough gas to make it worthy of moving to production. To make matters more complicated, the gas-bearing formation contains clays that are sensitive to water and swelling, reducing the flow of gas. Whicher Range was fracked with liquid CO₂ in 1999 and with diesel in 2004. Approximately 1.2 million litres of diesel were used at the time and it is estimated that about 50 per cent of that diesel remains below the ground. We know that another work-over program is planned for this year. We do not yet know whether that work-over program will include fracking, but it is highly likely that that will be the case.

Titan Energy, formerly known as Westralian Gas and Power Ltd, has drilled the Koorup Road No 2 well near the town of Vasse with an eye to finding and extracting coal seam gas from the Permian Sue River coal measures at a depth of approximately 110 to 140 metres. The well logs are currently being analysed with an eye to developing the extraction and fracking program for that well. According to recent company reports, Titan is focusing its efforts on DR11 and EP455, both in the northern part of the Perth Basin near Eneabba, which is the other area it is looking in. There have been recent suggestions that Titan Energy might be less interested in the Koorup area. I do not know whether that is the case. Certainly the community down there is keeping a very close eye on that and is very concerned if fracking is part of that program of exploration and potential extraction.

A number of exploration permits are still pending in the Margaret River region. We know, of course, that the potential for extracting gas is also closely linked with the same formation that could potentially provide coal. The decision to knock back the coalmining proposal there has been widely welcomed by the community. We should acknowledge that the government has listened to the EPA and the community on that proposal and supported the EPA in refusing the application, and we are thankful for that.

I wanted to talk about the nature of the area where these coal and gas resources are, particularly because one of the big concerns about fracking and the unpredictable nature of the outcome of fracking in terms of contamination of groundwater and fracturing of the geology to create interlinkage or new linkages between the various groundwater aquifers —

Hon Jim Chown: How can you make that comment when after 20-odd years of fracking in this state, nothing like that has taken place?

Hon Alison Xamon: There is no way that you can compare the sort of fracking activity that has occurred to date with what we have now. Why don't you stand up and make a contribution?

Hon GIZ WATSON: As members will be aware, the geology of each area needs to be taken into consideration. That is why we have argued that it is important that the EPA does assess fracking proposals. The EPA has done an assessment of the potential environmental impact of coal extraction in this region so we know that there is a significant amount of information—it can never be totally complete—about the geology and groundwater resource of this area. It is complex. If there is one thing we agree on, it is that it is a very complex area. That is why the impact of fracking in that area is likely to be significantly higher than in an area that does not have complex geology and has a relatively simple system of aquifers.

I wanted to talk a little about the interconnectivity in that area—in particular, the interconnectivity between the Leederville and the Sue aquifers. The underground coalmine in Margaret River would have had an unacceptably adverse impact on local surface and groundwater quality. The Vasse coal deposit is located approximately 160 to 500 metres underground in the Sue aquifer. The Sue aquifer is overlain by the Leederville aquifer. The Leederville aquifer is the major regional aquifer in the south west of Western Australia and has a known groundwater discharge feature to Cowaramup and Margaret River and a range of groundwater-dependent ecosystems. One of the main problems with the proposed coalmine is that the outflow of water from the Leederville aquifer would severely reduce groundwater support to Cowaramup and Margaret River, other streams and groundwater-dependent ecosystems. It also had the potential to reduce the availability of water for industrial, agricultural, viticultural and public supply purposes. The amount of water flowing into the underground coal mine in the Sue aquifer was estimated to be between 2.6 and 6.1 gigalitres per mine per annum. This is a significant amount considering the current licensed water use for the Leederville aquifer is only 28.2 gigalitres per annum. Loss of water from the Leederville aquifer will push water usage from the aquifer much closer to its current allocation limit of 40.5 gigalitres per annum. Indeed, the Department of Water has already warned of overextraction from the Leederville aquifer, which is showing signs of depletion. Increased

strain on the Leederville aquifer will result in less water being available for other uses. The reason I raise that issue is that the potential impact on the groundwater in that area applies, at least in part, to any contamination or fracturing that might also —

Hon Max Trenorden: My information is that that coal seam will not produce gas. There is no point fracking it.

Hon Alison Xamon: Except they're actually looking at doing that right now.

Hon Max Trenorden: No, they're not.

Hon Alison Xamon: Yes, they are.

Hon Max Trenorden: That coal seam is a well-known coal seam. The information is that if you frac that coal seam, you will not get gas.

Hon Alison Xamon: Yet they are still looking at doing exactly that. I agree with you; I think the information you have is correct, except they are still looking at doing exactly that.

Hon GIZ WATSON: Hopefully, my honourable colleague will have an opportunity to respond very shortly, unless other members wish to speak.

I wanted to conclude my comments on the other component to this debate, which has been raised by Hon Ken Baston, in particular; that is, the bigger picture issue of whether we should be expending energy and time in looking to extract a gas resource that can only be accessed by using the fracking system. The argument was made that we should be and it is a state resource which will get lots of royalties. I wanted to make the case that it is clear that Western Australia wants a future powered by clean renewable energy rather than dirty fossil fuels. During the consultation phase of the Western Australia strategic energy initiative, over 1 800 Western Australians sent submissions to the Office of Energy objecting to the strong emphasis placed on unconventional gas in the draft strategic energy blueprint, calling instead for a much greater emphasis on development of the state's clean renewable energy resources. WA already has abundant natural gas and has access to undeveloped renewable energy resources comparable to any other region on the planet. Western Australia does not need a gas fracking industry at this time to secure energy for the future, as claimed by the proponents of the industry. In fact, the development of a gas fracking industry will constrain development of a renewable energy alternative and lock the WA economy into continued reliance on polluting and unsustainable fossil fuels. The state government is providing very significant subsidies to the gas fracking industry, including over \$100 million in unconventional gas exploration subsidies via royalties for regions, something that we object to very strongly.

Hon Max Trenorden: Royalties for regions funding hasn't done any fracking.

Hon Alison Xamon: It's helped fund the exploration growth. We got that answer in Parliament.

The DEPUTY PRESIDENT (Hon Matt Benson-Lidholm): Order, members! The member has only 23-odd minutes to go. I know it is fairly useful to engage in questioning but I remind other members that there is plenty of time for them to make their contributions. I am sure the honourable member wants to get on with her own contribution.

Hon GIZ WATSON: I am glad there is a level of interest in this debate. That is all good.

As I said, over \$100 million has been provided for unconventional gas exploration subsidies via royalties for regions and there is a 50 per cent royalty reduction for the industry. These funds would be far better directed to the development of sustainable energy options, including baseload solar thermal and wave power. These largely untapped energy resources can provide clean competitive energy that does not pollute the environment but, rather, enhances the viability of WA regional economies. That is where we need to be putting our money, not chasing the dwindling or the harder to get at fossil fuel resource. It was long predicted that this would happen. The fossil fuel industry is so geared to maintaining its own survival and its own production that we have to question as a community whether pressing the extraction of the last drop of oil and the last litre of gas out of the most difficult, inaccessible geology is worth the risk and worth the cost. It merely drains money that should be directed into genuine, sustainable renewable energy sources. The whole push to extract unconventional gas is the industry tail wagging the dog of the rest of the community. The rest of the community is saying, "We recognise that we have to make a transition here and the more money we pour into risky and environmentally damaging unconventional gas resources, the more problems we create."

HON MAX TRENORDEN (Agricultural) [3.29 pm]: Some years ago when I was in the other place, some terrible government decided that when Boddington wanted cyanide, it could not truck cyanide from the Fremantle port to Boddington through the metropolitan area; it had to send it up to Northam by rail and from Northam to Boddington by road. The reason for that is that killing city people was less preferable than killing

country people! I got pretty upset about that at the time, so I got on my white charger and polished up my silver armour and into the fray I went.

Hon Wendy Duncan: Go Max!

Hon MAX TRENORDEN: We all know—people would have had to have been under a rock for some time to not know this—that cyanide was the mechanism that the Nazis used against Jews, gypsies and other undesirables, in their view. We know about cyanide and the effects of cyanide. But having fought through the oil and over the ramparts, and doing all those things that we should do, I found out that cyanide is actually pretty benign, because once it comes into contact with oxygen, it very quickly breaks down; in fact, it breaks down within minutes. If a railway truck tipped a train load of cyanide into the Avon River, it would take minutes for that cyanide to become benign. I did not know that when I first entered the debate. We know that cyanide presents a terrible risk, but Mother Nature—if that is the way to put it, but it is actually the interaction of oxygen and cyanide—quickly makes cyanide benign. The risk was the same whether it went through the metropolitan area or through my home town. If a person was next to a truck when it turned over, they would have problems, but within a short period of time they would not have had problems.

I make that point only to get to the fracking argument. I congratulate Hon Philip Gardiner and others who undertook an information process in the areas in which bores have been approved. I think that is a very good thing. I attended two of those meetings—one at Dongara and one at Eneabba—and I kept hearing people talk about America. I felt that I should remind people that this is Western Australia, not America. I have been to America six, seven or eight times. I really enjoy America. But in this argument about energy, we need to understand that Americans are different. Americans are paranoid about state security. They are paranoid about making sure that they are not conquerable by someone outside if they turn off energy. We—by “we” I mean the world—cannot argue that we should not have invaded Iraq and Afghanistan because Americans wanted the oil and then all of a sudden flip the other way when we want to. Americans are very concerned about making sure that they have security. Fracking is giving them security in energy for the first time in better than 50 years. Americans are now exporters of energy because of fracking. I cannot put my hands out in America and feel the political tension, but I am sure, because I read publications such as *The Economist* and others that cover these areas quite widely, that Americans are not up in arms, except for the individuals who are affected. Security is very important to America. However, that issue does not apply to Western Australia. As Hon Giz Watson has already said, we have energy coming out of our ears. The issue here is not about security, so we should not put that high on the agenda.

I want to talk about the amendment, but the really important point is that we are talking about less than one handful of exploratory wells. There are no production wells in the foreseeable future. No application for a production well has been made, let alone granted. The Department of Mines and Petroleum is saying that the very earliest that that would happen is in three years, but it is more likely five years. So there is already a moratorium on fracking.

Hon Alison Xamon: They actually frac as part of the exploratory process, so it's not true to say that there's a moratorium on the process of fracking. I hear what you're saying that we haven't got to the point of full-scale production. You, of course, are completely correct, but we do actually have fracking for unconventional gas through the process of exploration.

Hon MAX TRENORDEN: That is correct, Hon Alison Xamon. There have been 780 cases of fracking in Western Australia.

Hon Alison Xamon: Not for unconventional gas; it is actually different as well.

Hon MAX TRENORDEN: But it is still fracking.

Hon Alison Xamon: Not all fracking is the same; that is the reality.

Hon MAX TRENORDEN: As I have said, I have ears and I listen to my constituents when they are concerned. This is happening in my constituency. I went to those meetings because it is happening in my constituency. When cyanide was going to be moved through my electorate, I was there. All I am trying to say to members is that we have to listen and we have a time period in which we can act on this. That time period already exists. We need to bring in issues. I would say that the time period is wrong, but I would be on the opposite side of the argument to the member. Now that America is an exporter of gas, the price of gas has fallen. The economic drive for fracking is lessening, not getting greater. That should also give us time. What I am trying to argue is that time is already there. I am absolutely in favour of everyone finding out the real risks. I am not in favour of people getting highly emotional at meetings because they believe the time has already passed. I must admit that only a handful of people talked like that in those meetings, but I am sure that at an anti-fracking meeting, most of the

room would be arguing that the time has already passed. That is not true; the time has not already passed. There is time to examine it.

I do not want to speak for the Liberal Party, but I would say that if the member introduced a bill—somebody should introduce a bill, and the Department of Mines and Petroleum has already indicated it is heavily in favour of it—to ensure that all chemicals involved in these operations are made public and that the companies are open and accountable, everyone in this chamber would agree to it. The only reason that that does not happen is that the current act does not allow it. Off the top of my head, I think the act was introduced in 1956, so it is 50 or so years old. Currently, those in the industry that put these chemicals on their websites —

Hon Alison Xamon: Some of them do, but not all of them.

Hon MAX TRENORDEN: That is not what I am arguing. Some people are doing that. The department is bound by the act not to do it. It is a simple process of changing the act to do whatever we want to do about declaring chemicals. As I said, I do not want to speak for the Liberal Party, but certainly the Nationals would want that to be fully disclosed. There would be no problem in getting such a bill passed, because nobody wants to poison anyone. I worry about that a fair bit. I watched a program only this week produced by the BBC on ABC2 about genetically modified foods. It was a really good program. There was a shot in this program of tonnes of GM food that had been taken to Africa to feed the starving people in Uganda but it was still in the shed because the President said that if the people ate that food, they would get poisoned. It is exactly the same food that Americans are eating. Information is absolutely critical. As that program was about Uganda, we could argue that people have died from starvation as opposed to eating GM food. We are not arguing about GM food today; we are arguing about the capacity to deliver information to people before something occurs.

Hon Jim Chown: Factual information.

Hon MAX TRENORDEN: Yes, factual information; that is right. We have seen that happen many times in our lives; when there is a confused debate, no matter how much information people throw in from whatever direction, people will make up their minds over a period of time. That is whether we are talking about climate change, bills of rights or whatever we want to argue in places like this. After a debate, people will make up their own minds, and that is all we can ask. I am arguing that there is time in this debate for everyone to get to a position of their own—not to be told by the Greens, the National Party or anyone else around the place, but to listen to a range of views in the debate to get to a position of their own based on the facts. This is the real world and we cannot tell people what they believe. We can put the facts in front of them, but people will pick the facts they want to use.

My concern about this motion is that the Department of Mines and Petroleum has referred fracking to the EPA, and the EPA said there is no risk.

Hon Alison Xamon: No, the EPA has never had anything referred through from the DMP on fracking. The first the EPA indicated it was aware of it was when I referred it to them.

Hon MAX TRENORDEN: I will correct that. It does not matter who referred it to the EPA, the fact is that the EPA has shown little interest in it. That is a scientific process. I will say to members of the Greens that we in the National Party will happily get into bed with them to change it so the minister can direct everything in the environment because we would love that situation, but I do not think the Greens would. I could go back to the Portland Mining and a range of other issues in this chamber that have been hot in the past in which the Greens have been on the opposite argument to us. We said that mining at the Portland site should have gone ahead. Someone had supposedly found a rare plant on that site, but after 18 months it was found that a rare plant did not actually exist there; it was the same as the other plants that had been seen growing all over the place. If the Greens want a set of circumstances in which the minister can direct the EPA, then bring it on! It is not going to worry me, although I think it would be very stupid legislation because it would break down the purpose of the EPA. I would have thought that all people in this chamber would hold the independence of the EPA as critical. That is the whole point of the EPA. The Department of Environment and Conservation can be directed on all those things but the EPA is an independent entity. I think it is unwise of the Greens to leave this motion on the notice paper, because of all the people in this room they are the least likely to want the minister to direct the EPA. Even though I have just said the opposite, I do not want the minister directing the EPA either, and as long as the sun is shining I will not vote for that. I have difficulty with that part of the motion.

I will get back to the American desire to have energy security. The federal government, in league with the state government, has decided that energy has some primacy in our legislation, but that can be changed overnight as well. That is just an act of Parliament and that can be changed, if it is important. Again, that law was not enacted last week but sometime ago and we were not talking about all the activities off the north west coast and these

fracking opportunities. These fracking opportunities were not available when that legislation was put in place. We had Bass Strait and the Queensland activities, which were diminishing, so when that law was brought into place our energy security was diminishing. That law has the emphasis that the American law had, but that was before all the discoveries that we have had in the North West Shelf, Papua New Guinea, off East Timor and a raft of areas where we now have, as Hon Giz Watson has already said, a lot of energy; we have a lot of energy options. I do not believe there would be the same political problem if this state wanted to do that, because we did the right work and we found that for some reason, whether it was pollution of water—which I think is a different argument that I will not go into today—there was a need to have a different piece of legislation because that legislation was put in place for energy security. That is why it is there. Hon Alison Xamon needs to make sure she understands that as well.

The motion refers to “no reduction of agricultural land”. Is that no reduction by one square inch? It refers to “no reduction in local groundwater levels”. All of the words in paragraph 1(a) are actually saying “no fracking at all”. I am not going to support that, and I am certain my colleagues will not support that either because I will go back to the argument that we have time to fully examine fracking. The argument that we do not is fallacious and is not true. We have time to do all the things that people want to do. This is not just rhetoric. I fully support those people who have great concerns to look to the nth degree at protection measures, the monitoring of bores, and anything at all that needs to be looked at. I believe we should do that.

Paragraph 1(b)(i) refers to absolute transparency to the public about chemicals. We already know in the make-up of this place that as long as the National Party and Labor Party agree with this motion, it will be passed, but I have no doubt that my colleagues in the Liberal Party would agree with the situation on chemicals. I do not think that is an argument. I do not believe anyone wants to say to anyone that they cannot find out what chemicals are involved. I worry about what people eat, let alone what is used in fracking. The motion refers to rigorous independent testing. We should have that, and I argue that we have time to do that. The motion states, “any liability for contamination of ground water, land or community assets be borne by the company”. That is currently the case in law. Of course, when we get down to paragraph (2) about the minister having the capacity to direct the agency, that is outrageous. There is no reason to support this motion. I will say it again and say it quietly: this is not about not protecting individuals.

Going back to my case about cyanide, I was adamant that my constituents were at risk because of the movement of cyanide through my town. However, cyanide moves through the commercial and residential areas of Kalgoorlie on a daily basis. It was not until I understood the issue more than I did when I started that my attitude changed. But I must admit that I did not change my attitude until the fight had been won. The point I am making is let us put the information out there. We have a minimum of three years before any commercial fracking will occur. I think it will go well beyond three years because the economic drive for fracking in this state is much, much lower than it was a few years ago. On my reading, America has 200 years of energy supplies coming directly from fracking. That is important. If members want to look at this, and I did get involved in this a few years ago, California refused to have a docking area for liquefied petroleum gas to go into California—a lot of that LPG was to come from this state—so they put the wharf and docking arrangement in Mexico, and it is now redundant. Mexico and the United States do not have to import energy anymore; they are self-sufficient in energy. The demand for energy is dropping off. The time period is a minimum of three years, but more likely five years and probably out as far as 10 years, before any commercial fracking arrangement will occur in this state.

I cannot find a single reason to support either the motion or the amendment. I do not believe that the urgency referred to in this amendment is factual. I believe that everyone should have every opportunity to find out all the information they deem to be necessary for them. I have no personal problem with people having an anti-fracking position, as long as they do their own logical, cool process, attend meetings and get their own information. If they are anti-fracking at the end of that, that is fine, because, as I said, that is no different from the issue of climate change or, as I suggested, a bill of rights for Australia. People look at those matters, and at the end of the process they are either in favour of them or opposed to them. This is no different. Both the motion and the amendment should not be supported.

HON ALISON XAMON (East Metropolitan) [3.51 pm] — in reply: I would like to respond to some of the comments that have been made during the course of this debate. I would like to express how concerned I am that the first three speakers on this motion all made a point of referring to *Gasland*. If they had been listening to my contributions when I began, they would know that I specifically made a point about differentiating between the situation with *Gasland* and the situation here in Western Australia. There are two main issues. First, I recognise that our regulatory framework is completely different from that which exists in the United States, and I am very glad about that. Secondly, there are issues around lots of unknown wells throughout the United States, which has contributed quite considerably to the issue of methane contamination. We do not have that situation to such a strong degree over here. I really think it is disappointing that people try to distract from the debate by referring to

that, when I had differentiated. I would like to correct something in particular; that is, it was stated by both Hon Philip Gardiner and the Minister for Mines and Petroleum that *Gasland* is about coal seam gas. It is not; it is about shale gas. I would have thought that something as fundamental as that would have been understood. It is certainly something that the Department of Mines and Petroleum understands.

Nevertheless, getting on to the issues, I think it is important that members realise that we really cannot ignore the increasing global concern around this method of extracting gas. Please note that it is subject to moratorium elsewhere, not only in Australia, but also around the world, and it seems that this is being extended every single day. As I mentioned in my initial contribution, I think that members give certainly the Greens far too much credit if they think that we are somehow able to achieve that outcome. The reality is that there have been situations in which there has been bipartisan support for moratoriums in other jurisdictions.

I will now deal with some of the comments that have been made. An ongoing dialogue has been occurring in this state that suggests that it is okay because it is not the same as what is happening over east. That is because coal seam gas is bad. In Western Australia, we have shale and tight gas, and they are completely different; therefore, we do not need to worry about the sorts of issues that have been occurring increasingly over east. The problem with that discussion is that it ignores some of the realities when issues have arisen elsewhere with shale and tight gas. It is true that we are looking largely at much greater depths than we are looking at with coal seam gas, but not always. The reality is that it is to do with the integrity of the entire well. That is something to which I referred in my original contribution. Those issues are going to be pertinent whether we are looking at a deep extraction or more of a surface extraction.

The other thing to note is that when problems have emerged in other jurisdictions, it has largely been around the issue of the integrity of the wellhead. That is not simply about gas escaping; it is also about what happens with the excess fluid. There are ongoing issues to do with the storage of the regurgitated fracking fluid as well. I am really disappointed that there did not seem to be a more comprehensive engagement with those sorts of issues.

The DEPUTY PRESIDENT (Hon Matt Benson-Lidholm): Honourable member, can I just interrupt you for a second. I need to pull you up on a particular point. You did mention your original motion. Even though only three minutes are left, standing orders require you to basically talk to the amendment put by Hon Jon Ford. I just remind you of that because you have gone to the point of mentioning your original motion. At this time I have given you a little licence in responding to Hon Max Trenorden, but I would like you to concentrate, if you can, on the amendment.

Hon ALISON XAMON: Thank you, Mr Deputy President. The effect of the amendment moved by Hon Jon Ford is to completely remove the issue of a moratorium, so I am speaking to that, because effectively I am trying to put out why the arguments are there to proceed with a moratorium. On that note, there is a very serious lack of knowledge around the issue of the interconnectivity of various aquifers, particularly in the midwest. I remain concerned about that, particularly as that is where the industry will most likely take off some time into the future. Also, I suppose I was disappointed particularly with the contributions around the issue of climate change. I note that in the Minister for Mines and Petroleum's comments, there seemed to be no recognition of climate change as an issue at all. In fact, people are talking about how the use of unconventional gas means that we are looking at 200 years—I believe that in the *Hansard* it said even up to 300 years—more of methane being produced to look at powering communities into the future. If climate change was not real, perhaps that is something we would be looking at. Then we would be weighing up the costs, particularly in relation to our groundwater, with the extractive methods. The problem here is that we are talking about an environment in which we have climate change that is produced by human activity. Therefore, what we are effectively talking about now is hundreds of years more of production of fossil fuels. I am really concerned that there seems to be no suggestion that we would abate that at any point in the future and that we are just looking at proceeding with this as soon as possible. Therefore, I think that is something that needs to be recognised.

There are real issues around the lack of transparency of this industry, and people have spoken about that. I take on board the comments of Hon Max Trenorden, who obviously shares my concerns about the need to ensure that we have as much transparency around the industry as possible. That is a very key concern and something that the Greens have been calling for for quite some time, but we have managed to get nowhere with it. I think that we need to look seriously at amending legislation around this issue. I am very interested in pursuing the idea of testing the support of this government as to whether it would look at a legislative change in that regard. I have to say that I am not sure that I would necessarily feel as confident as does Hon Max Trenorden. Regardless, serious concerns exist whether members here choose to ignore them or not. Assertions that technology will be developed some time in the future to safely deal with the multiple problems that have emerged elsewhere do not give me any comfort. I think that the precautionary principle should prevail. I am very concerned about a suggestion that

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Hon Philip Gardiner; Hon Ken Baston; Hon Giz Watson; Hon Max Trenorden; Hon Alison Xamon; Deputy
President

we are looking at a trial by error. I believe there are genuine risks that need to be addressed before we proceed further, and we will continue to push for a stringent regulatory regime.

Amendment put and a division taken, the Deputy President (Hon Matt Benson-Lidholm) casting his vote with the ayes, with the following result —

Ayes (8)

Hon Matt Benson-Lidholm
Hon Helen Bullock

Hon Sue Ellery
Hon Adele Farina

Hon Ljiljana Ravlich
Hon Linda Savage

Hon Sally Talbot
Hon Ed Dermer (*Teller*)

Noes (21)

Hon Liz Behjat
Hon Robin Chapple
Hon Jim Chown
Hon Peter Collier
Hon Mia Davies
Hon Wendy Duncan

Hon Phil Edman
Hon Brian Ellis
Hon Philip Gardiner
Hon Nick Goiran
Hon Nigel Hallett
Hon Alyssa Hayden

Hon Col Holt
Hon Lynn MacLaren
Hon Robyn McSweeney
Hon Helen Morton
Hon Simon O'Brien
Hon Max Trenorden

Hon Giz Watson
Hon Alison Xamon
Hon Ken Baston (*Teller*)

Pairs

Hon Ken Travers
Hon Jon Ford
Hon Kate Doust

Hon Michael Mischin
Hon Norman Moore
Hon Donna Faragher

Amendment thus negatived.

Motion, as Amended, Resumed

Question put and negatived.