T R A N S C R I P T

STANDING COMMITTEE ON THE ENVIRONMENT AND PLANNING

Inquiry into unconventional gas in Victoria

Melbourne — 1 September 2015

Members

Mr David Davis — Chair
Ms Harriet Shing — Deputy Chair
Ms Melina Bath
Mr Richard Dalla-Riva
Ms Samantha Dunn
Mr Shaun Leane
Mr Adem Somyurek
Mr Daniel Young

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Witnesses

Dr John Iser (sworn), Committee Member, and

Dr Liz Bashford (sworn), Committee Member, Doctors for the Environment Australia.

The CHAIR — I welcome Dr Liz Bashford and Dr John Iser from Doctors for the Environment to the table. I ask the two doctors to make an initial submission. We have about half an hour in total, so we will be as sharp as we can be with the time.

Dr ISER — I thank you for the opportunity to speak to the committee today. I am speaking on behalf of my colleague, Liz Bashford, and Doctors for the Environment Australia, which is abbreviated as DEA. This is an organisation of medical doctors with a primary focus on the health harms of environmental damage and pollution, our major concern being that of the adverse health effects of global warming and climate change. In our presentation today you will notice considerable overlap with the presentation just given by Professor Ackland.

DEA has serious concerns about the expansion of the unconventional gas industry in Victoria. We believe that in the interests of public health the risks need to be better understood before the industry can proceed, and this is because the industry is dealing with a lot of potentially harmful processes, the health risks of which have been poorly documented and quantified to date.

Firstly, the process can include the use of multiple toxic — as we have heard — allergenic; mutagenic, meaning causing genetic changes; hormone-disrupting; and carcinogenic — that is, cancer-causing — substances for which there is insufficient information to assess the health impacts. As with cigarette smoking and asbestos mining, the adverse effects could take years to emerge. There is no requirement for a company to even disclose the chemicals that might be used, as we have heard.

In addition, chemicals which are part of geological strata can be mobilised in the extraction process. All chemicals, whether added or mobilised, can find their way into aquifers or brought to the surface to enter wastewater ponds or the atmosphere. Details of these chemicals are included in our written submission. Wastewater can also contain high concentrations of heavy metals, radioactive substances and ions, and even common salt, all of which need to be disposed of safely. In spite of all the safeguards, we are all aware of the failure of holding ponds through accidents and floods. Once again we have given examples of specific failures in our submission.

Secondly, air pollution can occur locally around unconventional gas wells. Petroleum-related products, volatile organic compounds, methane and other chemicals such as benzene and related toxic chemicals can be released into the air from venting, flaring, machinery, truck movements and evaporation ponds. Some of these hydrocarbons cause neurological effects and can irritate the respiratory system and the mucous membranes, and some chemicals can combine to form ozone, which is a lung irritant.

Thirdly, emerging studies in the USA are giving cause for concern. As well as studies of self-reported symptoms, such as respiratory and skin problems, there are more scientific studies revealing associations between congenital heart defects, spinal cord defects, low birth weight, and newborn wellbeing and the proximity of the mothers' residences to the unconventional gas wells.

Fourthly, local communities and farmers have indicated that they consider the risks of and damage from unconventional gas extraction to be unacceptable. Imposition of an unwanted industry will therefore fragment communities further and cause social upheaval and mental stress, just when good progress is being made with the acceptance of renewable energy generation.

Many other jurisdictions such as France, Italy, Germany, Wales, New York State, Hawaii, Vermont, Maryland and New Brunswick have banned or maintained moratoria on the unconventional gas industry because there is insufficient information to combat the risks. Therefore DEA recommends that here in Victoria the moratorium is maintained until such time as the health and environmental consequences are clearly understood, otherwise we will have an uncontrolled health experiment on an enormous scale.

Good health requires clean air, safe food and water, and a stable climate. There is potential for these determinants of health to be affected by unconventional gas extraction. The cumulative long-term effects risk damaging the natural systems upon which we rely for our wellbeing.

Thank you to the members of the committee. We would be pleased to try to answer any questions that you might have.

The CHAIR — Can I thank you for your submission, your policy and your position statement as well. I might just draw a distinction in the first instance and seek your response to that. In relation to conventional gas that might be onshore, does your organisation have any objection to the use of conventional gas — that is, just tapping a well in a way that is done offshore routinely now?

Dr BASHFORD — Thanks for the question. I am not sure I can really answer that on behalf of DEA. We have been mainly concerned with unconventional gas because of the methods required, the extra chemicals and so on. I cannot probably comment any further than that on behalf of DEA, but I can take it on notice if you want.

The CHAIR — No, that is all right. I get the point that you have not considered that. In terms of the potential way forward, you have just heard the chief health officer, or the acting health chief officer, give a presentation?

Dr BASHFORD — Yes, we were here.

The CHAIR — Whatever his exact title — Professor Ackland. Do you agree with many of the positions that were put there?

Dr BASHFORD — Yes. I think his submission echoed ours, really, and the basic message is that there are huge gaps in our knowledge and we do not have enough knowledge to make an informed risk assessment.

Ms SHING — Thank you very much for your contribution and for the submission which you have made on the two-page document that has been given to the committee. You have set out a position that seems to indicate, Dr Iser, from the contribution you have made today, that a moratorium should be extended until such time as the risks are better understood. I would like to test that in the context of where the line is according to DEA about when the risks can be better understood. What might we get there, and when in fact can we say with a better degree of certainty that is satisfactory that the risks are able to be managed to an extent that an unconventional extraction industry might conceivably be able to go ahead, by reference to the risks that you have outlined, and be able to go ahead in a way that is safer and thus acceptable?

Dr ISER — I think we have deliberately kept that fairly open-ended because the risks may take decades to emerge or the problems may take decades to emerge. We really are saying for the foreseeable future. The risks of contaminant chemicals in aquifers could even take years to actually emerge as a problem that has actually occurred, and then downstream effects from that.

Dr BASHFORD — Risk is quite a personal thing as well. It really is very closely linked to the benefits. Certainly I think this is why we are finding such strong resistance in communities, because to them they are absorbing all the risks to their health, their water, their farmlands, and yet they are not going to see any benefits, or minimal benefits if any. For them, they are quite risk averse. For the government it is different. You are going to see some more benefit, so your risk level will probably be higher than theirs. For the DEA, we were talking about this before: from our point of view our mandate is not only good health through environment, it is good health through avoiding global climate change. To achieve that aim, fossil fuels need to be left in the ground. As far as DEA is concerned, the risk of digging up or drilling for gas, the long-term risks of climate change will probably not make that risk acceptable at any stage.

Mr DALLA-RIVA — Thank you, doctors, for your presentation. Is Doctors for the Environment Australia funded by any environmental groups?

Dr ISER — No, we are a totally voluntary group of doctors. We receive no outside funding whatsoever.

Mr DALLA-RIVA — And no affiliation with any green party or green groups?

Dr ISER — No political affiliation whatsoever. We are loosely connected with myriad other environmental organisations, but it is just another group of people concerned about the environment.

Mr LEANE — Just to follow up a statement you made that communities are starting to accept renewable energy sources and generation, going to wind generation, is that something that has been explored by your group? There have been health concerns. What is your position on that?

Dr ISER — DEA has produced a position statement on wind farms and wind power generation. We have come in line with the NHMRC conclusion on that, and that is that there is no scientific evidence of physical health harms from wind generation that can be found anywhere throughout the world. The harm seemed to be more of a psychological acceptance nature, and that would be the position of the DEA.

Ms BATH — I am interested to know if in your research you have looked overseas and you have studied overseas health impacts or results from mining, whether it be tight, shale or coal seam gas. Can you tell me about your investigation into overseas health studies? We seem to be lacking them here.

Dr BASHFORD — Yes. Because of the length of time required to make a study and publish it, the lag time is kind of four, five, six years, so we are a bit slow on that, Australia, at the moment. But there are a lot of studies being done in America, and some of them are quite large studies. There are big shale gas developments, the Marcellus Shale, and some of the reports that we mentioned in our submission have come from that. There was a study of 125 000 babies that were born to women living in or near the shale gas development there. There was another study of 28 000 children born in that area, and there are a couple of ongoing studies as well in the US. So there is work coming out of the US.

Ms BATH — I guess to some degree would you say that it is hard to point the finger at causal or direct correlation? I am not trying to put words into your mouth, but do you see what I am saying?

Dr BASHFORD — At this early stage a lot of these big studies are called hypothesis-generating studies. So instead of actually trying to prove cause and effect, they are looking at whether or not there may be a problem. From those studies, if you see some positive correlations then you need to design more studies to home down on those particular problems and find out more about them. Because we are looking at large numbers of people they take a long time, and it takes a long time to get any proper evidence out of studies like that. So it is still in the preliminary stage.

Geisinger Health, which is looking at the Marcellus Shale development, is currently undergoing a long-term study. They are doing pilot studies for three to five years, looking at asthma and birth outcomes. They have just started that in the last couple of years, so those results will be out in about three years time. Then they are starting very long-term studies — so long-term health effects like cancers, heart problems, long-term respiratory problems and so on. That is going to take decades to come out.

Ms DUNN — Thank you, doctors, for your presentation. I just wanted to go to the submission you sent us. It talks a little bit about some impacts in Queensland, and it talks about solastalgia — whether I have that pronunciation right I do not know. There are a couple of things in that. I am just wondering whether there has been much work done or many studies done in Queensland in terms of revealing other health impacts. I do take the point of Dr Iser earlier in relation to these impacts — that they could take decades in terms of revealing anything — but I am just wondering, do we have an idea? I use Queensland because it is our turf, to a degree, and our territory, and clearly there is an understanding of some of the health impacts, but do we understand any more at this stage?

Dr BASHFORD — A lot of those health impacts that are coming out of Queensland, not to make light of it, are quite generalised symptoms — headaches, respiratory problems, skin problems and so on. So it is difficult to make good conclusions about those types of studies.

The Queensland government did a fairly badly designed study on health effects and found no problem after concerns were raised by a GP who lived in the Tara area. She did a very brief phone and interview survey of the symptoms and found that there was a high incidence close to the wells. The Queensland government, in response to that, did its own survey, but it was quite badly designed and it did not really reach any conclusions.

I think studies are probably being undertaken, but we do not really know of them yet. I know of two people doing PhDs on the health effects of gas wells in northern New South Wales, but those PhDs are not finished and they have not written any papers yet. So I think they are going to emerge, but it is unfortunate that we do not have a lot of studies at the moment.

Ms DUNN — If I can just ask one follow-up, you talked about the Queensland government research that was badly designed: what was it that made it badly designed? What were the factors?

Dr BASHFORD — I will have to take that one on notice, because I read it briefly when I was preparing the submission and I kind of thought, 'I won't include that'.

Ms DUNN — That is fine. Thank you.

Mr YOUNG — I was just reading here the position on the handout we have, which states that the DEA:

> … supports the moratorium on UGD until the health and environmental consequences are adequately understood, and appropriate monitoring and regulations are in place to protect human health.

Are you convinced that the appropriate level of knowledge has been achieved in other industries such as wind farms, which were just mentioned, to mitigate the effects on human health?

Dr ISER — They are quite different scenarios. With wind farms we are not dealing with any toxic substance or any unknown quantity. It is just a machine generator. We are surrounded by generators and machines in our daily lives every day. So it is quite a different scenario. When you say, 'Has there been sufficient scientific evaluation?', they have certainly scientifically evaluated some of the things that can be evaluated in a double-blind controlled way, but it is very hard to evaluate something like noise or movement in a blinded way, because they are obvious things that you perceive. I do not know if wind farm generation can be studied in any further depth in that sense, whereas with unconventional gas we have a whole host of different substances of a totally different biochemical, biological scenario.

Mr YOUNG — If wind farms cannot be studied in any more depth, what you are saying is there is a potential knowledge gap in the effects on human health similar to a knowledge gap that we are talking about in another industry.

Dr ISER — I take your point, except that wind farms now throughout the world are so widespread that there is plenty of opportunity for real defects to be — —

The CHAIR — So was asbestos once upon a time, but that is another point.

Ms SHING — Sorry. Come on, I would like to hear the rest of the answer if that is all right.

The CHAIR — So would I.

Dr ISER — I was just trying to finish the sentence to say that there have been no observed physical effects, and that has been quite well studied from that point of view.

Dr BASHFORD — Can I just add something? There is a thing called biological plausibility as well. Wind farms do not generate anything apart from sound — very low frequency sound — and a light flickering, so it is actually very difficult to even propose that those two things can cause ill health. The low-frequency sound that wind farms generate is no more than you would get in an urban environment, so there is really no biological plausibility, unlike unconventional gas, where we are dealing in toxic chemicals and routes of exposure.

Mr YOUNG — Okay. Thanks.

The CHAIR — I thank you for your submission. It is a very helpful one, and I indicate that Keir and the secretariat may be in contact with you in the future on some of the references and some of the other points. Thank you very much. We appreciate it.

Dr BASHFORD — Thank you.

Dr ISER — Thank you.

Committee adjourned.