Parliamentary Inquiry hearing into Uranium Mining and Nuclear Facilities (Prohibitions) Repeal Bill 2019 - 11 November 2019.

Questions Taken on Notice

Question 01 (Page 3 of transcript)

The Hon. MICK VEITCH: Can I talk about workforce capacity in New South Wales around both uranium mining but also nuclear facilities? You may have to take this question on notice, but has there been much work done around New South Wales' workforce capacity, if we were to move towards uranium extraction or nuclear facilities?

Mr WRIGHT: I would say that the mining sector in New South Wales, as you know, is very well advised. We have deep expertise within industry for both metal and coalmining generally. In so far as that skills set can be applied to uranium mining, we are probably well positioned. I would have to take on notice what some of the specifics might be around the skills required for uranium mining.

ANSWER:

In general, uranium mining is no different from other types of mining. Where orebodies lie close to the surface, they are usually accessed by conventional open-cut mining methods, while deeper orebodies are accessed via underground mining methods. In some specific circumstances, uranium may be extracted by *in situ* leaching, which eliminates the need for major ground disturbance.

Other than in situ leaching, the mining methodology, processing methods, environmental management, and rehabilitation standards for uranium mining are consistent with conventional metalliferous mining. There are uranium-specific health and safety controls. However, this is not abnormal, as health and safety controls already exist for lead, silica, and other deleterious materials. Uranium-specific health and safety controls would be adopted from national standards already in use.

Therefore, it is likely that existing resources sector and/or mining workforces would be able to adapt to uranium mining.

The Department's Environment, Energy and Science group has advised me that NSW legislation prohibits uranium mining and the construction and operation of nuclear reactors for electricity generation.

Question 02 (Page 6 of transcript)

The Hon. MARK BUTTIGIEG: Just a quick one. From a planning perspective, has there been any research strategy documents prepared regarding the likely or projected direction of the market in this space? Let me elaborate. I mean, at an intuitive level it seems as though there is quite a big predisposition towards renewable energy, and that technology is bringing prices down hand over fist quite rapidly. Has there been any analysis done on the viability of a nuclear path vis-a-vis the likely trajectory of renewables and the technological advances in that area? I know that companies like BHP and major mining companies are actively out in the community saying, "We're going down the renewable path because we think that is the future of mining." Has the department got a view on that and where that might go in terms of a strategy for New South Wales?

Mr WRIGHT: Obviously the Government has a commitment to net zero emissions by 2050 and is doing a lot in the renewable space but I am not aware of that work being done within the department. I could take that on notice and refer perhaps to another part of the department to come back to you on that. But I am not aware of any specific work being done in that space.

The Hon. MICK VEITCH: Just following on from the question of my colleague, I think the next question would be: is the Government looking at diversifying its energy sources so that we are not reliant on one? If one falls over then the New South Wales economy falls over, essentially, because there is no power. Are we looking at modelling to make sure that we have a diversified source of energy for the State?

Mr WRIGHT: I cannot, with any expertise, respond to that question, given it is another part of the agency that deals with that matter.

The Hon. MICK VEITCH: Yes. Can you take it on notice?

Mr WRIGHT: Let me take it on notice.

ANSWER:

The Department’s Environment, Energy and Science group has advised me that there are publicly available reports that provide comparative analysis of the cost to generate electricity from nuclear power plants compared with other technologies in Australia, including the Commonwealth Scientific and Industrial Research Organisation (CSIRO) 2018 GemCost study.

Question 03 (Page 6 of transcript)

The Hon. MICK VEITCH: Just following on from the question of my colleague, I think the next question would be: is the Government looking at diversifying its energy sources so that we are not reliant on one? If one falls over then the New South Wales economy falls over, essentially, because there is no power. Are we looking at modelling to make sure that we have a diversified source of energy for the State?

Mr WRIGHT: I cannot, with any expertise, respond to that question, given it is another part of the agency that deals with that matter.

The Hon. MICK VEITCH: Yes. Can you take it on notice?

Mr WRIGHT: Let me take it on notice.

ANSWER:

The Australian Energy Market Operator's Integrated System Plan identifies the lowest cost mix of generation and transmission to meet expected future demand.

The 2018 Integrated System Plan identified a diverse mix of gas, wind, solar pumped hydro, battery storage and transmission projects would be the lowest cost way to replace ageing generators.

The 2019-20 Integrated System Plan will test a wider array of scenarios for future demand and technology costs, as well as a larger ensemble of weather years. This will help identify a diverse mix which is resilient to different futures and weather events.

Question 04 (Page 6 of transcript)

The Hon. MICK VEITCH: I think that that sort of modelling is important, particularly as we move towards the aspirational goal, nil carbon emissions by 2050. What is that going to look like? What does that look like for us?

Mr WRIGHT: I am happy to take that on notice.

ANSWER:

The Department's Environment, Energy and Science group has advised me there are different ways the NSW economy could function with net zero emissions. This is clearer in some sectors than it is in others.

In the electricity sector the Australian Energy Market Operator's 2018 Integrated System Plan suggests the cheapest way to replace NSW's existing generators is a mix of wind, solar, pumped hydro, batteries, peaking gas and transmission.

In other sectors, there are emerging technologies which could replace current processes without emissions. For example, Rio Tinto and Alcoa have developed a carbon free anode for use in aluminium smelting, and the major global vehicle manufacturers are investing heavily in electric and fuel cell vehicle technology.

It may not be feasible for some sectors of the NSW economy to completely remove emissions. For NSW to achieve net zero emissions these emissions would need to be offset, for example, by planting native vegetation on degraded land.

Question 05 (Page 7 of transcript)

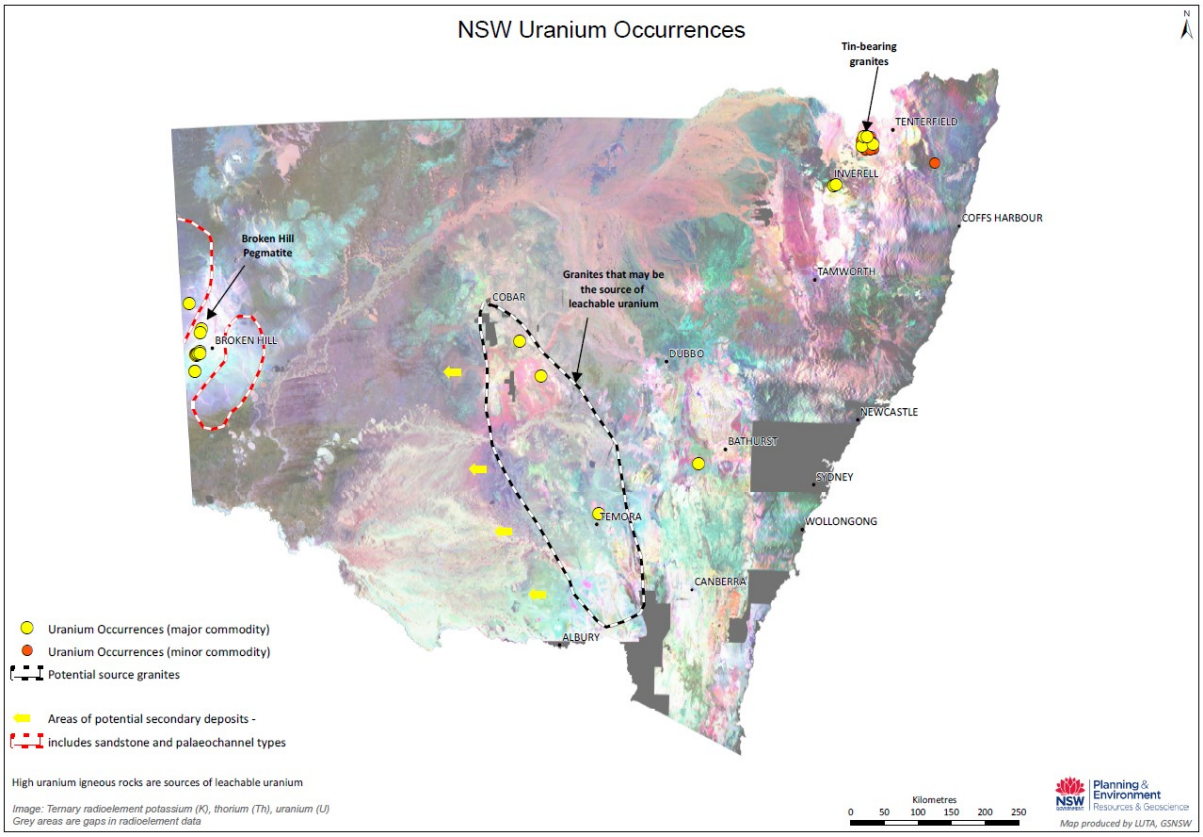
The Hon. MARK BUTTIGIEG: Excuse my lack of research, if this has already been answered somewhere. Do we have any idea of the volume or the intensity of uranium as a source vis-a-vis other jurisdictions—not only within Australia but internationally? In other words, is there hard evidence that the source of uranium in Australia would give us a disproportionately high comparative advantage if we go down that path? You said that there had been some analysis on exploration, notwithstanding the fact that there is no market for it now because extraction is banned. Do we have any idea of how rich we are in uranium in New South Wales?

Mr KING: No, not in New South Wales. Australia is obviously is already one of the largest exporters of uranium in the world, but in New South Wales it would be hard to tell at this stage. But the prospect is good so there is a good chance that we would have a reasonable market.

Mr WRIGHT: We do have a map of the likely occurrences of uranium across the State, which we are happy to provide to the Committee if that would be beneficial.

The CHAIR: That would be great. Thank you.

ANSWER:



Question 06 (Page 7-8 of transcript)

The Hon. MARK LATHAM: I have a question which I am sure you will take on notice as it is not your area of expertise. You mentioned earlier on that you will take it on notice and get back to us with some material about energy security in New South Wales. This is our one contact with a government department and one of the key aspects of looking at nuclear power is the need for baseload dispatchable power into the future in our State to keep the lights on because of the obvious issues facing the coal-fired power stations and coal in general. Is it possible to draw out of your department—the energy section—a long-term projection about where nuclear could fit in in terms of providing dispatchable power, given all the challengers?

We have the Australian Energy Market Operator [AEMO] that said there is a heightened risk of blackouts in New South Wales unless we do something about increasing supply of dispatchable power. There is the interconnector that is being built into Queensland to draw on their relatively young coal fired power stations and some other issues—whether it is viable to get these gas peaking plants up and running, given they rely on private investment. There is no guarantee for Government; it is all private speculation and funding, and also some issues about curtailment problems with renewables. I know it is a complex areas but I have seen some graphs that are quite disturbing. After the closure of Liddell in 2023, the lines of demand and supply of electricity in New South Wales start to separate and continue to separate through the longer term. Obviously you need something to fill that gap, otherwise we have mass blackouts. So if it is possible for the department to provide us with a report on those longer term projections and where nuclear could fit in to fill the gap I think that would be very useful for the Committee's deliberations.

Mr WRIGHT: I will take that on notice and take it back to the department.

ANSWER:

The Department's Environment, Energy and Science group has advised me that The electricity sector in NSW is undergoing a period of significant change with all five of the State's coal fired power stations expected to retire over the coming decades, starting with the Liddell Power Station in 2023, and new forms of generation coming online. Through its Integrated System Plan, the Australian Energy Market Operator (AEMO) found that the least cost transition plan is to retain existing generators for as long as they can be economically relied upon, followed by a replacement portfolio of solar, wind, storage and gas fired generation. Under the recently released NSW Electricity Strategy, the NSW Government has set one of the highest targets for reliability anywhere in the world. The NSW Electricity Security Target will mean that changes to the State's energy mix do not come at the expense of our system's reliability.

In applying the Electricity Security Target to NSW over the course of the 2020s, NSW is projected to experience its tightest reserve conditions in 2023-24 after the Liddell Power Station closes in April 2023. This tight reserve condition is partially mitigated by the QNI and VNI upgrades. Other committed projects that will increase supply by 2023-24 include Mount Piper power station upgrades (60 MW by December 2021), Bayswater power station upgrades (100 MW by December 2022), and firmed capacity from committed wind and solar farms (115 MW by 2023).

There are also a range of other firm generation projects proposed that could bring additional supply into the NSW market, including:

- a 250 MW gas peaking plant at Newcastle (AGL)
- a 320 MW gas peaking plant at Tallawarra (Energy Australia)
- four large-scale 50 MW batteries (AGL with Maoneng Group)
- the 50 MW Darlington Point Battery
- projects funded under the NSW Emerging Energy Program.

The NSW Electricity Strategy sets out options available to the NSW Government to meet the Energy Security Target if these projects do not proceed and clear assessment criteria, including limiting costs to consumers and taxpayers.