NUCLEAR FUEL CYCLE ROYAL COMMISSION

Comments submitted by Phillipa Holden (in personal capacity)

Thank you for the opportunity to comment on the tentative findings of the Royal Commission. The document is clearly laid out, though the devil is clearly in the detail and in order to fully assess the findings the cited references also need to be considered, which I have not had time to do. My comments are therefore fairly general and high level.

1. This paragraph concludes that policies must be based on evidence and not opinion or emotion. How will the strong voices of commercial interests be neutralised?

7. In respect of greenhouse gas emissions: "*In a study published in 2008, nuclear physicist and nuclear energy supporter Manfred Lenzen compared life-cycle emissions from several types of power station. For nuclear energy based on mining high-grade uranium ore, he found average emissions of 60 grams of CO_2 per kilowatt hour of electricity generation, compared with 10–20 g per kWh for wind and 500–600 g per kWh for gas. Now comes the part that most nuclear proponents try to ignore. The world has, at most, a few decades of high-grade uranium ore reserves left. As ore grades inevitably decline, more diesel fuel is needed to mine and mill the uranium, and so the resulting CO_2 emissions rise. Lenzen calculated the life-cycle emissions of a nuclear power station running on low-grade uranium ore to be 131 g per kWh. This is unacceptable in terms of climate science, especially given that Lenzen's assumptions favoured nuclear energy. Mining in remote locations will be one of the last industries to transition to low-carbon fuels, so new nuclear reactors will inevitably become significant greenhouse gas emitters over their lifetimes*[1]."

   With respect to the IPCC report cited, it is abundantly clear that commercial interests are ramping up their efforts to promote nuclear power as part of the answer to the fossil fuel and climate change crisis. Solving one problem while creating another one makes no sense at all. Furthermore, the rapidly declining cost of renewables and burgeoning innovations in this area mean that nuclear will become increasingly unattractive from an investment point of view apart from any other reasons, as indicated by the findings of the report.

39. The assertion that each accident has been thoroughly and credibly investigated to determine both causes and lessons to be learned does not preclude the similar or new mistakes from being made in a the future, nor is it certain that such investigations were entirely thorough and credible.

42. It is the magnitude of the risk that is problematic and it is clear that many South Australians and Australians are not willing to accept such levels of risk, nor pursue a technology that in all its manifestations is so problematic. Furthermore, the cost of cleaning up and compensation should such an accident occur can run into the hundreds of billions, judging by what is happening at Fukushima[2].

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[1] http://theconversation.com/accidents-waste-and-weapons-nuclear-power-isnt-worth-the-risks-41522

[2] http://www.theguardian.com/environment/2016/mar/11/fukushima-daiichi-nuclear-reactors-decommission-cleanup-japan-tsunami-meltdown; https://theconversation.com/five-years-after-fukushima-there-are-big-lessons-for-nuclear-disaster-liability-56167

63. Whilst social consent is absolutely necessary, I would think that technical issues warrant far greater attention!!

73. Used and stored material can only be deemed safe after millions of year, not even tens or hundreds of thousands[3]. Whilst new technologies may improve recycling capability and reduce this time significantly, we are not there yet, and even thousands of years are not commensurate with our capacity to ensure prevention of harm.

84. No analysis is provided on why so many countries do not have a solution and have not followed the path that is proposed here. If it is not good for them, why is it good for us?

122. The investigations and reporting on Fukushima have been disingenuous to say the least. Information that is available in the alternative media and internet, including messages from people at ground zero, indicate significant (to say the least) health implications with ailments like thyroid cancer rocketing, whilst the impact on the Pacific Ocean and sea-life is horrifying by all accounts from independent and credible sources.

133. Transporting nuclear waste by sea, road and rail is risky no matter how you look at it or what you do to mitigate it.

No mention is made of reputational risk – what of South Australia's clean, green image and the lead it is taking on renewables?

Totally inadequate mention is made of the seismic risk that exists in South Australia.

[3] http://theconversation.com/harvesting-usable-fuel-from-nuclear-waste-and-dealing-with-the-last-chemical-troublemakers-35284