

Rear Admiral the Honourable Kevin Scarce AC CSC RAN (Rtd)

Royal Commissioner

Nuclear Fuel Cycle Royal Commission

GPO Box 11043

Adelaide SA 5001

3 August 2015

Dear Sir,

This is my consolidated submission to the Nuclear Fuel Cycle Royal Commission addressing selected questions from all Issues Papers.

#### **Issues Paper One: Exploration, Extraction and Milling**

My response to Question 1.7 regarding the demand for uranium in the medium and long term is as follows.

To begin, I quote the Commissioner from the article titled, "Jobs in nuclear industry are 'decades away'", published in *The Advertiser* on 25 July 2015:

"If we decided – and we haven't decided yet – to recommend parts of the nuclear fuel cycle, it would be a couple of decades before we started to see the major impact."

I submit that at this point in time there is no way to prove a sound basis exists for concluding there will be increased demand for uranium in the medium and long term. No doubt nuclear proponents will point to the world's increasing energy needs, especially of the two developing giants, China and India. On the demand side, it is true the world will be looking for emissions-free energy on a massive scale to replace traditional fossil fuels. If uranium for producing nuclear energy was the only option to replace fossil fuels, I would not be writing this submission. The fact is, it is not the only option. Another, better option exists in renewable energy, and I submit that in a much shorter time than it would take to establish a nuclear industry in South Australia, the world will be turning to renewables in force while eschewing nuclear energy. Renewable energy is the superior option to nuclear across all key elements of comparison – safety, environmental impact, cost, sustainability, and social acceptance.

It is impossible to assess future demand for uranium/nuclear energy without considering what is likely to happen in the near future in regards to demand for renewable energy. I submit during the span of years it would take to establish a nuclear industry in South Australia, renewable energy will surpass nuclear energy worldwide and eventually make it redundant. I submit in the next five years or less, large-scale storage of energy from renewable sources will be possible. Several countries have already made the commitment to go 100% renewable, most notably Germany, the Philippines, Scotland and Denmark. Cities that have made the same commitment include Sydney, San Francisco, Vancouver and Fukushima. As technology for storing

renewable energy develops at a cracking pace<sup>1</sup>, the world will hunger for renewables because it is indisputably the more palatable alternative to nuclear.

## Issues Paper 2: Processing & Manufacture of Radioactive/Nuclear Materials

The following is my combined response to questions 2.7 to 2.9 regarding building community confidence about health, safety and environmental risks.

While I acknowledge modern nuclear plants are safer than their earlier counterparts, the risk of accidents can never be eliminated. Especially in the current global climate where we are in a constant state of alert as a consequence of extremist ideology, the possibility of a terrorist attack on nuclear facilities cannot be understated. The catastrophic consequences of a nuclear accident, whether brought on by human error, an act of nature, or terrorism, has been indelibly etched in the human psyche by disasters such as Three Mile Island, Chernobyl and Fukushima. The community at large will never be sufficiently confident to accept such a risk, especially when there is an alternative option for our future energy needs (renewable energy) that poses no such risk.

## Issues Paper 3: Electricity Generation from Nuclear Fuels

In my view, Part C of Issues Paper 3 – ADVANTAGES AND DISADVANTAGES OF DIFFERENT TECHNOLOGIES AND FUEL SOURCES – is the crux of the matter that needs to be determined by this Royal Commission. To all intents and purposes, the question that needs to be examined and answered is;

FOR ITS FUTURE ENERGY NEEDS, SHOULD SOUTH AUSTRALIA ADOPT NUCLEAR ENERGY OR AIM FOR 100% RENEWABLE ENERGY?

It is disappointing that the Issues Paper appears to downplay the importance of renewable energy by referring only to “other sources”. Nevertheless, Question 3.8 in my view is the most important question of all the Issues Papers:

**What issues should be considered in a comparative analysis of the advantages and disadvantages of the generation of electricity from nuclear fuels as opposed to other sources? What are the most important issues? Why? How should they be analysed?**

For answers to these critical and complex questions, I choose to fully endorse the submissions made to the Royal Commission by the Conservation Council of South Australia.

My analysis as a concerned layperson, for what it’s worth, is as follows:-

|                      | <b>Nuclear</b>                       | <b>Renewables</b>                |
|----------------------|--------------------------------------|----------------------------------|
| Safety               | Fail (risk of catastrophic accident) | Credit (little or no risk)       |
| Environmental impact | Fail (toxic waste for eons)          | Credit (clean and green)         |
| Cost                 | Fail (uneconomic for SA population)  | Pass (cheaper in the long run)   |
| Sustainability       | Fail (finite resource)               | Distinction (renewable resource) |
| Social acceptance    | Fail (Fukushima etc)                 | Distinction (no cause for fear)  |

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<sup>1</sup> For example, liquid metal battery storage:

[http://www.ted.com/talks/donald\\_sadoway\\_the\\_missing\\_link\\_to\\_renewable\\_energy?language=en](http://www.ted.com/talks/donald_sadoway_the_missing_link_to_renewable_energy?language=en)

My combined response to questions 3.9, 3.13 and 3.14 about building community confidence around health and safeguard issues in the wake of accidents like Fukushima is essentially the same as my response to questions 2.7 to 2.9. While every precaution can be taken to minimise safety risks, the possibility of a catastrophic nuclear accident can never be eliminated. There is no such risk associated with renewable energy. There is widespread support in the South Australian community for pressing ahead with our already impressive uptake of renewable energy. There is widespread belief that transition to 100% renewable energy is desirable and indeed possible in *less* time than it would take to establish a nuclear energy industry.<sup>2</sup> I submit it is irrational, futile and against the State's best interests to try to build community confidence for introducing nuclear energy to South Australia with its inherent safety risks, when there is already a clear preference to expand our existing renewable energy industry which involves no such risks.

#### **Issues Paper 4: Management, Storage and Disposal of Nuclear Waste**

My combined response to questions 4.6 to 4.10 about community confidence and the security, health, safety and environmental risks associated with the storage and transportation of nuclear waste is that it would be illogical and against the State's interests to jeopardise South Australia's biggest selling point – its reputation as one of the world's last remaining clean, green, unpolluted, non-GMO, non-nuclear producer of quality food and wine. I submit our uniqueness in this regard has more lasting value than can be realised from becoming a nuclear waste dump.

#### **APPENDIX: general submissions not directly related to Issues Paper questions**

I am disappointed that there was no initial public consultation to gauge the public's appetite for this proposal before committing to the expense of a Royal Commission. I cannot help but suspect vested interests (no aspersions on the Commissioner) are at the heart of this push for nuclear in a last attempt to make money from an outdated industry which will inevitably be overtaken by renewable energy.

In the end, any proposal to introduce nuclear energy in South Australia must be put to a referendum and if it were, the question that needs to be asked is not, "do you want nuclear?" but, "do you want a mix of renewable and nuclear, or 100% renewable?" That is essentially the choice to be made in planning for an emissions-free future.

Yours sincerely,

Carol Faulkner, concerned citizen.

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<sup>2</sup> See: [http://www.conservation.sa.org.au/images/100\\_Renewables\\_for\\_SA\\_Report\\_-\\_Dr\\_Mark\\_Diesendorf\\_-\\_web\\_version.pdf](http://www.conservation.sa.org.au/images/100_Renewables_for_SA_Report_-_Dr_Mark_Diesendorf_-_web_version.pdf)