



Nuclear engineering research group
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Committee Secretary
Joint Standing Committee on Treaties
PO Box 6021
Parliament House
Canberra ACT 2600

26 April 2017

Dear senators,

The University of New South Wales's Nuclear Engineering research group strongly supports of Australia acceding the ***Framework Agreement for International Collaboration on Research and Development of Generation IV Nuclear Energy Systems***. We believe that it is in Australia's best interest to join the GenIV international Forum (GIF) for the following reasons:

1. Participation in GIF will enable **Australia to influence the direction and development of nuclear technology in the world, and aid in Australia's non-proliferation commitments**. This is especially important in the current climate where many neighbouring countries in the South-East Asia and Pacific region have expressed renewed interest in civil nuclear power. Joining GIF will strengthen Australia's position as regional leader of Nuclear technology, thus increasing Australia's influence on international policy development in accordance with our national economic, security and non-proliferation interests, and maintaining Australia's position as a *de facto* permanent member of the International Atomic Energy Agency's Board of Governors.
2. Joining GIF will enable Australian researchers to collaborate on world-leading research efforts, thus **increase the visibility of Australia's cutting-edge research, especially in the sectors of advanced materials and manufacturing**, which are at the core of the GIF research agenda. The collaborative agreements will also help Australia retain world-class research capabilities in nuclear medicine, nuclear technology, and neutron and synchrotron science that are currently offered at the state-of-the-art facilities at ANSTO and the Synchrotron.
3. **The proposed collaborative research** outlined in point 22 of the national interest analysis **aligns with two of the nine National Science and Research Priorities**: "Advanced Manufacturing" (advanced materials research strength) and "Energy" (Nuclear

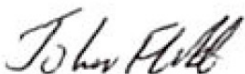
technology research strength). In addition, there is substantial potential for transfer of knowledge into other disciplines that are at the forefront of Australia's science and engineering development. Specifically, the proposed research on metal corrosion for Molten Salt Reactors is highly applicable to solar thermal energy technologies (another National Science and Research priority), which employ similar alloys, the same molten salts and experience similar temperature regimes. Similarly, the proposed research on Very High Temperature Reactors largely aims at improving engineering alloys for high temperature applications, and are therefore directly applicable to turbine blades in jet engines, manufacturing tools and components of conventional power plants.

4. **The framework agreement does not bind Australia towards the development of a nuclear power program.** Instead it will enable Australia to retain a high level of awareness of nuclear technology in the world. This high level of preparedness will provide the basis for informed decisions in the future regarding potential adoption of nuclear systems.
5. Keeping open the option of pursuing nuclear energy if and when relevant circumstances arise will depend on having suitably qualified and experienced people (SQEP) in the pool of Australian Engineers. In a future scenario where nuclear energy becomes desirable, we cannot rely solely on importing a knowledge from overseas. Nor can such a knowledge base be maintained only in theory, created in short order at late notice or even maintained solely by working in related fields such as nuclear medicine and other energy generation fields. Therefore, **participation in the framework agreement provides opportunities for training a small, yet significant, cohort of current engineers at graduate and postgraduate level in the cutting edge of nuclear energy technology, in a practical sense that is not currently open to us in any other capacity.** Our active participation will open opportunities for overseas visits, shared courses, joint research, international work placements and networking events. All of these will contribute to our country maintaining a minimum proficiency in a technological field that has, so far, never ceased to be of highest strategic importance.

For these reasons, we believe that it is in Australia's best interest to accede the framework agreement, and not doing so may hamper Australia's ability to influence the future of nuclear technologies around the world, as well as potentially damaging Australia's global position in cutting-edge research and development in the nuclear sector and other engineering fields.

Yours faithfully,

On behalf of the Nuclear Engineering research group at the University of New South Wales.



Professor John Fletcher

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