

Australia Should Move Towards Leasing Nuclear Fuel to Selected World Customers

Proposal

Establish a Uranium enrichment industry and lease fuel rods to selected world customers, including complying developing economies such as India and China, provided they agree to the leasing terms which would include Australia's perpetual ownership of and security responsibility for the fuel rods. International Atomic Energy Agency could be involved in administering the proposal.

Leased nuclear fuel would remain Australian property, subject to Australian supervision and care over its entire life cycle. Upon depletion, Australia would recover the spent nuclear material for storage in geologically safe and stable formations, in deep underground bunkers, drilled along the lines of deep (several kilometres) mining shafts in a remote outback location.

Australia is unique in being able to offer safe and secure storage of residual nuclear material to the world through its stable political environment and stable geology in unique population free outback, minimising the risk of the nuclear material falling into radical hands.

The fee for transportation, security and storage of both the fuel rods and spent material would be included in the leasing terms. Australia's ownership of some 70% of the world's Uranium reserves places us at a tremendous advantage for participating in the entire life cycle value chain of the potentially dominant fuel source of the future.

This proposal does not necessarily envisage near term adoption of nuclear energy in Australia. Our base load power generation and transport systems are well established and based primarily on fossil fuels, making it difficult, expensive and socially disruptive to effect large scale rapid changes. In my view, natural gas and clean coal based power generation, combined with carbon capture and sequestration, will remain economically and socially most attractive alternative for Australia's base load power needs for the foreseeable future.

Infrastructure Funding

Funding for establishing safe, secure, dedicated and new infrastructure for enrichment, land and sea transportation of the fuel rods and spent fuel, together with the storage of nuclear residue, would be provided largely by the "leasing" nations allowing us to locate all these custom designed facilities away from existing population centres.

Such milling, manufacturing and transportation infrastructure could be located in remote parts of South Australia. For example, the milling and manufacturing could be carried out in the proximity of the mining locations in the state's north with a new

dedicated railway line connecting to a new seaport at the top of the Great Australian Bight.

Benefits for Australia, for Developing Economies and for the World

This is a win – win proposition for all interested parties and stakeholders.

Australia will benefit by:

- value adding to our Uranium resources,
- expanding our market,
- creating a new “Spent Nuclear Fuel Storage” industry
- creating additional employment opportunities, and
- earning carbon credits.

Developed economies extensively using nuclear power generation such as France, UK, USA and (eventually) Japan as well as Emerging economies such as India, China and Southeast Asia will benefit by:

- economic growth supported by “leased” enriched uranium sourced from a reliable and politically secure supplier and
- access to nuclear fuel regardless of their Nuclear Non Proliferation Treaty status.
- Assured safe and secure storage of residual nuclear fuel rods

The world will benefit from:

- continued economic growth,
- reduced carbon emissions and
- enhanced safety and security of residual nuclear material.

First Step

Formation of an integrated research and development centre funded by a consortium of potential “Nuclear Fuel Leasing Nations” to examine the Social, Political, Economic, Geological and Engineering feasibility of the proposal. Such a centre could be located in South Australia and established under the auspices of the International Atomic Energy Agency.

Proposer's Background

I am a petroleum engineer with more than 45 years Australian and international industry and more than 13 years of UK and Australian academic research and teaching experience. I have a keen interest in promoting economic growth based on efficient utilisation of a wide range of energy sources, both renewables and non-renewables. I am also very concerned about global warming and the need to curtail worldwide greenhouse gas emissions to safeguard the future of our planet.

I am of Indian origin and an Australian citizen of more than 40 years. I am therefore able to intimately relate to the interests of both the developed and developing societies.

Proposed By

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