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The Secretariat,
The Department of Resources, Energy and Tourism,
Canberra ACT 2600

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Submission to the Draft Energy White Paper

The Australian ITER Forum is pleased to have this opportunity to provide this submission to Energy White Paper secretariat. We believe that it will be important for the White Paper to take a long term view of energy issues. In particular, it should focus on long-term policies to encourage investment in clean energy and low-emission technologies. Fusion power is one of few candidate sustainable energy alternatives to fossil-fuels as a provider of base-load electricity. Realising the potential of nuclear fusion technology for energy production requires long term commitment to multilateral programs designed to carry out the necessary R,D&D. ITER is the only global collaborative program pursuing this objective.

The Australian ITER Forum is a network of over 140 scientists, engineers, research administrators and policy specialists advocating sustainable Australian engagement in ITER, the experimental fusion reactor that is now being built in France. The Forum agrees with the draft paper that Australia is fortunate to be blessed with a wide range of energy options. However, we believe that the energy White Paper should be expanded to include consideration of longer term options. Specifically, we suggest that the omission of fusion power from the Energy White paper be rectified. We suggest that:

- Fusion be identified as a next generation sustainable nuclear energy option at the end of Contingency Box 7.7 (page 219), or as a separate breakout box, and the text highlight the importance of a sustainable fusion science capability in Australia.
- The White paper and the government recognise the importance of supporting research across the broader set of sustainable, non fossil-fuel based, clean energy technologies.

Fusion and ITER

Fusion is the process whereby lower atomic weight elements join to form a heavier element. This is the process that powers the Sun and the stars. Fusion energy offers millions of years of baseload energy generation, with almost no greenhouse gas emissions and very little radioactive waste compared to nuclear fission energy and coal. Strong progress has been made over the decades towards viable energy production using fusion. ITER marks the next step. ITER, one of the world's largest science projects, is a strong example of a technology that is being developed with substantial international support, including developing nations. The seven ITER parties are the People's Republic of China, India, the EU, Japan, the Republic of Korea, the Russian Federation

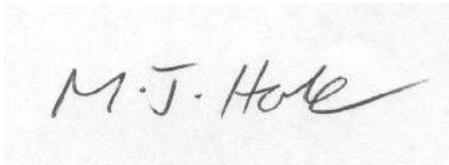
and the USA. Of regional interest to Australia, we note that fusion research has received significant investment in the Asian region, with next generation experiments in the Asia-Pacific region totalling more than \$3bn. The total cost of ITER exceeds \$20billion.

The research outcomes of ITER will guide the design of a prototype reactor, and seek to ensure that fusion will become a commercial technology in the second half of this century. With established credibility in a number of areas relevant to fusion science, potential Australian involvement in ITER has been encouraged at the highest levels of the ITER Organisation. Although Australia is not yet a party, there are clear and established mechanisms for participating in ITER that remain open to Australia should it choose to engage.

The Australian ITER Forum has a strategic plan for Australia's fusion future: "A strategy for Australian fusion science and engineering: Through ITER and into the future", available from the Australian ITER Forum website <http://www.ainse.edu.au/fusion>. This initiative, if supported, secures Australian scientific expertise with a targeted fellowships scheme, provides appropriate support for Australian fusion science infrastructure, and advances Australian industry capabilities through a formal engagement with, and a contribution to, ITER. This plan, which was released in August 2007, is currently being revised and updated. We anticipate the working draft "Powering ahead: a National response to the rise of the international fusion power program" will be released as an exposure draft in first half of 2012.

We thank the Government for this opportunity to comment, and add that we are willing to discuss or provide additional information (such as draft text) to the Secretariat upon request.

Yours Sincerely,

A handwritten signature in black ink that reads "M. J. Hole". The signature is written in a cursive style with a long horizontal stroke at the end.

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<http://www.ainse.edu.au/fusion>