



**Joint August Meeting- PUBLIC LECTURE**  
**Australian Institute of Physics – NSW Branch,**  
**Australian Institute of Energy & The University of Sydney**

**Fusion Energy & ITER- an Opportunity for Australia**

**Dr Barry Green, European Commission**

**Tuesday 15th August @ 6.00PM**

Slade Lecture Theatre, School of Physics, University of Sydney

*Summary of talk:*

The development of modern civilisation has been made possible by accessible and readily exploitable energy sources. Energy is vital to our lives. In recent years, the supply of energy for this and future generations has become a major issue, with the prospect of the traditional, cheap energy sources becoming scarce, with energy exports being increasingly used as a political tool, and with serious concerns about the environmental effects of energy use. Fusion is an energy source as yet untapped by man. It is the process which powers the sun and the stars. As such it is the source of terrestrial life itself. The dream is to control fusion processes to provide energy on earth, and the main advantage is that the fuel resources are so abundant that there will never be a shortage on a realistic time-scale. Research into controlling the fusion process, one of the ultimate energy challenges, has been going on in many countries. This year, an international agreement between countries representing over half the world's population will be signed to construct and operate a large experimental device, ITER (which is Latin for "the way") which should "demonstrate the scientific and technological feasibility of fusion energy for peaceful purposes."

In this lecture, Dr. Green will discuss the issue of energy, the fusion process and its advantages as a source of energy, the nature and history of fusion research and development which makes ITER the next, logical step on the path to developing a fusion power producing reactor. He will also present the status of the ITER project and outline the future of fusion power development. Australia has been involved in this area of research since the early 1960s, and although its research efforts are small relative to the programmes of larger nations, it hopes to participate in the ITER experimental programme. Although Australia is blessed with significant resources of primary energy, the policy to determine its future energy mix has still to be decided. In this regard, Australia's involvement in fusion research should be considered as an important investment for the future.





### ***Brief Biography of the Speaker:***

Dr. Barry Green holds a PhD in theoretical physics from the University of Sydney involving close collaboration with experimental studies of plasma (the state of matter of fusion fuel) in the School of Physics. After a Post-Doctoral assignment at the Princeton University, U.S.A. he was a researcher in fusion at the Max-Planck Institute for Plasma physics in Garching near Munich, Germany, before moving to work on the design, construction and operation of the European fusion experiment, JET, located near Oxford in the United Kingdom. He was the JET Engineer in Charge in November 1991 when JET produced the first significant amount of fusion power ever in a man-made device. From 1993 he was a member of the ITER international design team at its Joint Work Site in Japan. This international team prepared the design of the device, the construction of which will soon be formally agreed by the governments of the 7 parties involved (China, Europe, Korea, India, Japan, Russia, and the U.S.A.).

Since March 2003 he has worked in the Directorate General Research of the European Commission in Brussels, Belgium, in the Directorate of Energy and specifically involved with the European fusion research and development programme.

### ***Detailed Schedule for Tuesday, 15 August 2006:***

- **6:00-6.30 pm** **Drinks and nibbles, Slade Lecture Theatre.**
- **6.35-7.30 pm** **Lecture by Dr Barry Green.**
- **8.00 pm** **Dinner with the Speaker at Buon Gusto (Italian),  
368 Abercrombie Street, Chippendale.**  
*E-mail Dr Fred Osman if you will be able to join us for dinner.*

### ***Travel Directions:***

- Train to Redfern station and walk to the School of Physics.
- Buses 422, 423, 426, 428, 448, and 450 from Circular Quay to City Road / King, or 412, 435, 438, 470, 483 etc. along Parramatta Road from Circular Quay.
- Drive and park in various parking lots. You will need to pay for parking (\$6 flat-rate after 4 pm) and display the ticket in your car. You may also find parking places on public roads outside the Uni.

