



The Perth Branch of the **Australian Institute of Energy** is pleased to announce a luncheon with a presentation

**Thursday 12<sup>th</sup> August, 2010**

***Nuclear – the Elephant in the Energy Room***  
**Dr Erica Smyth, Ian J Duncan, Dr B J Green**

Members, prospective members and visitors are cordially invited to attend.

<b>Venue:</b>	Parmelia Hilton Mill St PERTH WA 6000	<b>Cost:</b>	Members: \$75 (\$68.18 + \$6.82 GST) Non-members: \$95 (\$86.36 + \$8.64 GST) Table of 8: \$720 (\$654.55 + \$65.45 GST)
<b>Program:</b>	Networking 12.00pm Lunch 12.15pm Presentation 12.30pm Questions 1.35pm Close 2.15pm	<b>Registration:</b>	Complete the registration form on the next page. Retain the form with evidence of payment as your GST Tax invoice and return a copy to the AIE by <b>5.00pm Tuesday 10<sup>th</sup> August, 2010.</b>
<b>Date:</b>	Thursday 12 <sup>th</sup> August, 2010		

## Overview of the Presentation

This title well represents the Australian perception of nuclear power from its inception (Atoms for Peace) until the 1990s. The elephant was believed to be large, elite, and difficult to control. It had dubious parentage. Gathering and processing its food and disposal of its wastes were problematic.

Nuclear binding energy represents a vast, energy-dense resource for mankind. There are two ways of releasing this energy: fission (as in existing nuclear reactors) and fusion (the source of power of the sun and stars).

From the 1990s there have been growing concerns about climate change, externalities of coal burning, availability and cost of liquid and gaseous fuels and diversity of energy sources. This new millennium has embraced a change towards renewable sources and nuclear- a nuclear renaissance has commenced.

This is an opportunity to assess the desirability of having some dependence on nuclear powered base-load electricity generation in Australia's larger grids from 2026 onwards.

Erica will set the scene with Discovering Uranium - with a look at how Uranium occurs and concentrates, how we find it and why is it such a challenge to extract and transport and market-all with an emphasis on Australia and WA.

Ian will focus on nuclear fission reactors that have demonstrated more than 45 years of power production around the world. However, various issues have prevented its more widespread usage. The intrinsic issues are being dealt with in the design and construction of "advanced" nuclear reactors.

Barry will add his views with a focus on the future:- Fusion, is still in the research and development phase with the hope to produce a prototype reactor and possibly commercial fusion by 2050. Fusion reactors offer significant advantages over fission ones, nevertheless, there are common areas of interest in the development of advanced fission reactors and fusion reactors.

**Dr Erica Smyth** BSc(Hons) Hon.DLitt *W.Aust.*, MSc(App) *McG.*, FAIM, FAICD

Dr Smyth has over 30 years experience in the mineral and petroleum industries. She was Principal Geologist for BHP Minerals Limited and BHP-Utah Minerals International's Beenup Project Manager, Manager Gas Market Development WA for BHP Petroleum and, more recently, General Manager – Corporate Affairs for Woodside Petroleum Limited. She has a Bachelor of Science from University of Western Australia and an Applied Master of Science from McGill University in Montreal, Canada. In 2008 she was awarded an Honorary Doctor of Letters from the University of Western Australia.

Dr Smyth is a Fellow of the Australian Institute of Company Directors, is the Chair of Toro Energy Limited, the WA interactive science centre Scitech; the WA Government's film screen industry funding body ScreenWest, the Diabetes Research Foundation of WA and the UWA Centenary Trust for Women. She is also a Director of the Australian Nuclear Science and Technology Organisation (ANSTO); the Cooperative Research Centre for Sustainable Resource Processing and the Royal Flying Doctor Service (Western Operations). The Chamber of Mines & Energy (WA) awarded Dr Smyth a Lifetime Achievement Award in 2010 for her contribution to the industry and as part of the Women in Resources Award 2010.

**Ian J Duncan** DPhil, FTSE, FIEAust, FAIE

Ian Duncan's career was with Western Mining Corporation (WMC), joining in 1971 as Operations Manager, Exploration Division. He retired as General Manager of the large Olympic Dam copper, uranium, gold and silver operation in South Australia.

Due to his involvement in uranium exploration, production and marketing over 25 years, he became aware of the world's nuclear fuel cycle and nuclear power technology. He was Chairman of the London based Uranium Institute (now World's Nuclear Association) 1995-96. Since retirement he completed a doctorate at the University of Oxford which addressed the interface between society and the disposal of radioactive waste. He is a Fellow of the Australian Academy of Technological Sciences and Engineering (Chair of WA Division). He is Chairman of Energy Ventures Limited, a junior uranium exploration company.

**Dr B. J. Green**

Barry has a BSc from Victoria University of Wellington (New Zealand) in 1962, and obtained his PhD in theoretical physics from the University of Sydney in 1967. He spent the next 40 years outside Australia involved in the research and development of fusion energy. He has worked at the Princeton Plasma Physics Laboratory (USA), the Max-Planck Institute of Plasma Physics (Garching, Germany), and the JET Joint Undertaking (near Oxford, UK) where he was engineer in charge of operation of the JET device in November 1991 when it produced the first significant man-made fusion power (2 MW).

Subsequently he worked at the Naka Joint Work Site (Japan) for the design phase of ITER, the international fusion energy project, now under construction in the south of France. He then worked in the Directorate of Energy of the Directorate General for Research (European Commission, Brussels) where he coordinated the fusion R&D of the 12 most recent member states of the European Union, before retiring to Perth where he now works part-time at the School of Physics of the University of Western Australia.

This presentation will be very interesting and provide excellent opportunities to network with other participants in the energy sector. **Book early to secure your seat.**

