

includes both supply-side and demand-side management. It collaborates with research centres on energy management both locally and internationally.

### Exxaro Chair in Energy Efficiency

This chair was established in June 2012 with the industry support of Exxaro. It is hosted by the Centre of New Energy Systems. The mission of this chair is to participate in forefront research activities in the field of energy efficiency and to deliver world-class research and educational outputs for the benefits of Exxaro, the University of Pretoria, and South Africa in general. This chair is specifically devoted to addressing energy-efficiency problems of

industrial processes by modelling, optimisation, control and management techniques. The chair also aims to train suitably qualified engineers to solve practical engineering problems and work for the industry.

### Institute for Technological Innovation

The research of the Institute for Technological Innovation (ITI) is focused on quantitative studies of science, technology and innovation policy, including assessments, international benchmarking and scientometrics. The ITI is particularly interested in multidisciplinary fields like energy and water. The ITI's research has been informing and initiating a number of policy actions in the country. Examples

include the introduction of tax incentives for research and development in the country, the linking of financial support to researchers who are rated by the NRF and the current recommendation in the draft intellectual property policy for the introduction of an examining approach in the country's patent system.



### Clean Energy Research Group

The Department of Mechanical and Aeronautical Engineering has been active in research on energy systems – including thermoflow systems – since the early

1980s. Research areas originally focused on heating, ventilation, and air-conditioning (HVAC) systems and engines. Since the early 1990s, there has been a growing emphasis on computational research in the thermoflow field, with applications like electronics cooling and industrial computational fluid dynamics (CFD) gaining ground. These activities are currently balanced by a growing group in experimental heat transfer and CFD research. The applications of these research areas have been consolidated into a broader focus on clean energy systems and components. The research of the Clean Energy Research Group is currently focused on energy systems, renewable energy (solar, fuel cells, wind and ocean

## Centre of Excellence for Nuclear and Radiation Safety

The National Nuclear Regulator (NNR) has taken the initiative to establish a Centre of Excellence for Nuclear and Radiation Safety at the University of Pretoria. This is mainly motivated by government's envisaged nuclear expansion programme. One of the important questions that the NNR and government will have to answer is: "Is the NNR ready and does it have the necessary infrastructure and resources to regulate all the future use of nuclear technology in South Africa. On 20 February 2015, a one-day workshop was held on the Hatfield Campus as an

initial interaction to verify the University's capabilities to host such a Centre of Excellence. The workshop was attended by the heads of various departments and other researchers. Prof Stephanie Burton, Vice-Principal: Research and Postgraduate Studies, and Prof Sunil Maharaj, Dean of the Faculty of Engineering, Built Environment and Information Technology, welcomed the delegation and presented the achievements and growth statistics of the University. The University's other delegates then presented their departments' individual



capabilities. The day was concluded by a visit to the various laboratories, with specific attention being paid to those that could potentially be of interest to the NNR.

The NNR plans to select and appoint the host partner institution and to appoint the Director of the NNR Centre for Nuclear Safety and Security (CNSS) by the end of November 2015. ➔