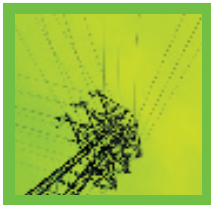


Murdoch University
South Street
MURDOCH
WA 6150
Tel: (08) 9360 6620



Small Wind Test Centre planned

RISE is seeking to establish a National Test Centre for Small Wind Turbines. The new Centre will set, test and certify to the Australian standards for performance, reliability and safety for wind turbines up to 100 kW. RISE has over 10 years of expertise in testing of small wind turbines and assisting the small wind turbine industry in Australia and its testing laboratory, ResLab, is the only NATA accredited testing facility for renewable energy equipment and components, such as inverters.

The proposed new Centre will be the only one of its kind in Australia and will be a one-stop-shop for testing with a new field test facility, an increased testing capability at RISE's Reslab and international collaboration on projects. The timing of the new Centre is important considering the increasing interest in small wind turbines for domestic rooftop use. With no safety and performance standards, product failure in a built environment could severely damage the reputation of the small wind turbine industry and prevent future uptake.

The new proposed Centre will use and build on RISE's existing capacity to:

- develop a new field test facility in the Perth metropolitan area, which has excellent testing characteristics for wind systems;
- commercially test small wind turbines, with the objective of certifying 8 Australian manufactured systems;
- undertake demonstrations of small wind systems in the built environment for remote and urban areas; and
- be part of an international network of small wind turbine bodies to establish safety and performance standards.

Sustainable Mine Site Camp Accommodation Project

A consortium of research centres at Murdoch University, including RISE, in collaboration with National Lifestyle Villages, will design eight sustainable accommodation modules to fit in a planned iron ore mine site camp and compare their energy, water and waste impact with corresponding traditionally-designed modules.

The project will deliver a design for temporary accommodation modules that incorporates sustainable elements that are integrated into the existing manufacturing process or retrofitted on site and achieve several valuable outcomes, including lessons that will inform future design work at camp or village scale, the maximising of energy efficiency in camp accommodation modules, the minimisation of water use and the investigation of the potential for alternative energy generation and its inclusion where feasible.



Typical mine-site camp accommodation

Over 70 interested members of the public attended a recent RISE workshop on "Powering your Home from the Sun" held at the Piney Lakes Visitors Centre in Melville.

Western Power Scenario Planning

Professor David Harries of RISE and Professor Peter Newman of the Institute for Sustainability and Technology Policy at Murdoch University have been approached by Western Power to run a one-day strategy workshop that will be used to help identify the various changes that could impact on energy supply on the South West Integrated System (SWIS) in Western Australia and especially on the network business.

The changes that will be considered at the workshop include the full gamut of social, demographic, technological, economic, etc., and will look at the changes that are in the pipeline and relatively identifiable and certain, as well as further out possible changes.

The workshop is planned to be held in November and leading academics and relevant industry members with an understanding of the energy supply industry, energy generation, energy using technologies and renewable energy technologies and the way that these may change, have been invited to participate in the workshop.

We will report the findings from this workshop in the next edition of the RISE newsletter.

Designing and Installing PV Systems (Grid Connected)

15/16 November (Sydney) 29/30 November (Perth) & dates to be advised 2008

RISE has developed two day courses that provide an introduction to solar photovoltaic power systems and how they can be integrated into grid connected or stand-alone power applications.

The courses cover the characteristics of photovoltaic modules and inverters suitable for connection to the grid. There are sessions that provide an introduction to PV systems and system design and design case studies will be examined. The installation standards for PV grid connected systems (AS4777, AS5033 & AS3000) are also covered.

The course in Perth is presented by Nigel Wilmot, Manager Standards & Testing, RISE and Mike Dymond, Director, Sowilo Engineering Pty Ltd, a consulting renewable power systems engineering company based in Perth. The course in Sydney is run by Geoff Stapleton & Stephen Garrett, directors of Global Sustainable Energy Solutions Ltd (GSES). GSES assists other renewable energy companies, particularly in developing countries and Geoff & Stephen work as fulltime consultants and trainers working in Australia, Asia and Africa.

These courses are suitable for electrical contractors, existing BCSE accredited system designers and installers, utility representatives, electrical inspectors and electrical engineers who are involved in the installation of systems either as designers, specifiers or inspectors and academics and professionals working in the area of renewable energy and the environment.

To enrol in the November courses in Perth or Sydney or to express interest in 2008 courses, please contact Sue Taylor on (08) 9360 6620 or susan.taylor@rise.murdoch.edu.au

RISE Website Traffic

The RISE website continues to be a popular source of information about renewable energy systems and technologies. The number of unique visitors to the site over the past year until the first week in October was 124 700.

Analysis of monthly traffic demonstrates a surge of interest in renewable energy around the time that the Federal Government announced increased rebates for domestic PV systems

The highest level of interest in the last couple of months has been in hydrogen, geothermal, large hydro and wave power. The Information Portal will be regularly updated and maintained to always reflect the latest information on renewable resources, technologies and their applications.



Renewable Energy Display Centre

RISE has developed a Renewable Energy Display Centre at Murdoch University in Perth, WA. While the focus of the display is on stand-alone renewable energy systems, the facility also includes a grid-connected photovoltaic system and wind turbine demonstration systems. The aim of the facility is to provide independent technical information to the public about renewable energy systems and help to make renewable energy better understood in the community.

The systems on show at the display are used in real home environments and demonstrate some of the renewable energy technologies that are currently available with a range of design options. Where possible the systems incorporate Australian made products purchased from local WA suppliers.

The display also has a range of brochures providing information on renewable energy rebate schemes, system sizing procedures and general energy efficiency information.

The Display is open to the public on Fridays and Sundays from 1.00pm – 4.00pm and at other times by arrangement.

The Display has proved very popular and in the last quarter (Jul-07 to Sep-07), around 75 groups of visitors are listed in the visitor book (a visitor group has typically 2 to 3 persons). TAFE student groups, two university student groups, five overseas visitors groups, and 40 people visiting RISE for other reasons have also toured the facilities.

Staff news

David Harries, the Director of RISE was recently appointed President of the Conservation Council of WA.

Prakash Dubey has left RISE to take up a Business Development position at GHD in Perth. Some of Prakash's responsibilities will pass to Sandie Rawnsley and Nigel Wilmot and a replacement for Prakash will be sought in the new year.

Wayne Clarke has recently joined RISE as part-time Technical Officer. Wayne spends the rest of the week working for the Murdoch University School of Engineering.

Sue Taylor, RISE's Administration Officer, recently became a grandmother for the first time. Visitors to the RISE office must be prepared to admire photographs of 17 week old Ryder Jack McMullen!

ANZSES Conference

The 45th Annual Conference of the Australian and New Zealand Solar Energy Society (ANZSES) was held recently in Alice Springs.

The conference, entitled "Is Solar our only Nuclear Option?" illustrated the vast potential and capacity of the solar industry to make a long-term and significant contribution to Australia's energy supply and greenhouse gas abatement effort and showcased some of the emerging solar technologies being developed in Australia.

Delegates heard from Julia Judd, Executive Director of the Solar Power Association in the USA, about solar energy markets and trends in America, Scott Frier of Abengoa Solar Power USA talking about new solar trough and tower projects that are being implemented in the US and Grant Behrendorff of Bushlight gave an overview of renewable energy initiatives in Central Australia.

RISE prepared a paper entitled "Tale of Two Cities" which compared aspects of the successful Solar City bids and examined the possible reasons why the two WA solar city consortia were unsuccessful in their bid for funding. Plenary papers covered photovoltaic applications, renewable energy technologies and policy, sustainable buildings and solar thermal.

ANZSES members urged the Society to take a proactive role and to be more vocal and prominent in promoting and developing the solar industry in Australia.



RISE Develops Capability to Test to MEPS and Standby Power

Minimum Energy Performance Standards (MEPS) have been developed in Australia as a regulatory tool to improve the energy efficiency of some types of appliances. A MEPS for a particular appliance prescribes maximum power limits for different modes of operation. A MEPS already exists for many appliances and the energy rating given on white goods is a part of MEPS. A significant proportion (about 12%) of household energy consumption has been found to occur in standby mode and hence standby power has become an important issue.

Standby power consumption is on the increase as more appliances become available that do not disconnect from the mains when turned off. Instead they enter a standby mode that consumes a small amount of power, 24 hours a day. In addition, many small battery chargers are being used for portable devices such as mobile phones, cameras, MP3 players, and hand held computer games. Many of these battery chargers have no off switch and must be turned off at the wall or disconnected to prevent standby power consumption.

For an appliance with an existing MEPS, the standby power limit is prescribed by the MEPS. For other appliances, standby power is limited to 1 Watt. Regulations for appliances such as external power supplies (including some battery chargers), set top boxes, and home entertainment products will be implemented from October 2008. In anticipation of increasing demand for standby power consumption testing, RISE has developed a testing platform capable of measuring appliance power consumption accurately down to a few milliwatts. This has enabled RISE to add MEPS and standby power measurement testing of power supplies (including some battery chargers), computers, set top boxes, TV sets, fluorescent lamps, and monitors to its broad range of testing capabilities.

ref:<http://www.energyrating.gov.au/library/pubs/eceee2003-1011.pdf>

Standards Development

The Standards Australia EL-042 Committee met in Sydney on 17 and 18 October to progress work on the Standards for the installation of stand-alone power systems and the performance of stand-alone inverters. We will include drafts of these documents in future editions of the RISE newsletter. Also discussed were the issues surrounding signage requirements, the safety of PV arrays and the development of International Standards.

Nigel Wilmot of RISE and Ted Spooner of the University of New South Wales were the Australian representatives that attended the International Standards IEC TC 82 WG3 and WG6 meeting which was held in Burgdorf, Switzerland from 29 October to 2 November.

Whilst in Switzerland, they also attended an international workshop on "Arcing in PV DC Arrays – Potential Dangers and Possible Solutions". DC-Currents in PV systems carry the potential of generating arcs and hot spots which may cause damage to materials, cause losses and represent a risk to human life. This problem requires careful investigation and assessment of the different risks involved

RISE is investigating the rating and suitability of DC circuit breakers for use within photovoltaic arrays. This investigation stems from its work on the Australian Standard AS5033. At the BSCE ATRAA 2007 conference in Cairns, Queensland earlier this year, RISE presented some initial work on DC arcs from photovoltaic arrays and what happens to incorrectly specified circuit breakers in DC circuits. Nigel Wilmot's presentation and the accompanying short video can be downloaded from the RISE website www.rise.org.au/standards/.



RISE is supported by the Australian Government through the Renewable Remote Power Generation Program which is implemented in Western Australia by the Sustainable Energy Development Office (SEDO)



rise
Research Institute for
Sustainable Energy