

Electricity Network Energy Efficiency Enhancement

16th – 17th April 2012, Sydney

This two day Continuing Professional Development (CPD) course in energy efficiency is presented by the Endeavour Energy Power Quality and Reliability Centre (EEPQRC) and the Sustainable Buildings Research Centre (SBRC), at the School of Electrical, Computer and Telecommunications Engineering, University of Wollongong, with support from the NSW Government Energy Efficiency Training Program.

Course Objectives

With increasing costs of electricity, reducing energy losses by improving operational efficiency of electrical networks, will become critical to ensure investment returns at the design phase and to minimize network operating costs. Reducing energy loss also reduces carbon emissions.

This course focuses on providing state-of-the-art knowledge of energy efficiency enhancement design and planning tools. The course also introduces the latest technologies and industry practices to improve network efficiency and reduce energy losses.

Course Benefits

On successful completion of the course you will have gained knowledge and skills to assist you in the following;

- Knowledge of critical electricity network components, systems and their operation associated with losses.
- Ability to quantify a range of fundamental electricity network losses.
- An understanding of the limitations of electricity network components in relation to their losses.
- An understanding of mechanisms that can be applied to minimize network losses while maintaining quality of supply, including network automation systems.
- Knowledge of the connection between network losses and power system economics
- Skills and foundation level knowledge associated with cost effective energy loss minimization strategies.
- Exposure to specific case studies on energy efficiency improvements and financial justification, and
- Empowerment to liaise with project managers, owners, vendors, consultants and utilities on related projects at concept, tendering and implementation stages.



Who Should Attend?

Managers, network and distribution engineers, senior technical staff, plant designers, plant and building managers, energy auditors and building service engineers who wish to improve their understanding or advise customers on electricity network energy efficiency solutions within the residential, commercial and industrial sectors. Personnel working in all areas of electricity network design who wish to understand the various aspects of electricity network efficiency, energy analysis, and electrical energy efficiency improvements.

The Venue

The course will be held at the University of Wollongong's Sydney Business School, Circular Quay. Venue details will be announced in due course.

About the Speakers

Associate Professor Sarath Perera is Technical Director of the Endeavour Energy Power Quality and Reliability Centre and an Associate Professor in the School of Electrical, Computer and Telecommunications Engineering. His research interests include power quality, distribution system reliability, EMC and power system simulation techniques.

Dr. Phil Ciuffo is a Senior Lecturer in the School of Electrical, Computer and Telecommunications Engineering. His research interests include AC machine analysis and control, power system analysis, smart grids and distributed generation.

Dr. Duane Robinson is a Senior Lecturer with the Sustainable Buildings Research Centre in the School of Electrical, Computer and Telecommunications Engineering. His research interests are energy efficiency, renewable energy and power quality.

Invited Industry Speakers will be included to provide case studies and practical experience of energy efficiency improvement projects.



Course Outline

The course is conducted over two days commencing at 8:30 am on Monday 16th April, 2012 and comprises lectures and case studies. The proposed course outline is provided below.

Day 1

Time	&	Topic
8:30 am		Registration
		<ul style="list-style-type: none"> Introduction and overview of electrical networks configuration and components. Overview of generation, transmission and distribution, and customer efficiencies. <p>Morning Tea</p> <ul style="list-style-type: none"> Sources of Network Losses - Introduction to equipment losses, network load and load duration curves, types of losses and constraints on minimising network losses. <p>Lunch</p> <ul style="list-style-type: none"> Loss & Cost Calculation - Principles of power flow and loss calculation, case studies, and evaluating system capacity against cost of losses during network design. <p>Afternoon Tea</p> <ul style="list-style-type: none"> Economics of network losses - Introduction to market operation, life cycle costing, tariff incentives and penalties, and quantification of losses in regards to carbon dioxide emissions.
5:30 pm		Conclusion Day 1

Day 2

Time	&	Topic
8:30 am		Start Day 2
		<ul style="list-style-type: none"> Minimising network losses - Introduction to material technologies, optimal loading of feeders, reactive power support, and benefits of embedded generation, distributed generation and smart grids. <p>Morning Tea</p> <ul style="list-style-type: none"> Laboratory - Demonstration of optimal loading on feeder and impact of embedded and distribution generation through case studies. <p>Lunch</p> <ul style="list-style-type: none"> Discussion - Cooperative discussion on a range of topics including tariff and regulatory requirements to drive efficiency, embed and distributed generation, and enhancing networks. <p>Afternoon Tea</p> <ul style="list-style-type: none"> Emerging technologies and initiative - Introduction to embedded generation using renewable energy, energy storage, smart meters and grids, and role of financial incentives for network enhancements.
5:30 pm		Conclusion Day 2

Training Investment

The course investment provides for an inclusive industry related training package with course notes, lunches and morning and afternoon tea. Course fee per person is AUD\$ 980 including GST.

Extended Course Program

This continuing professional development (CPD) course is one of several offered as part of the Energy Efficiency Training for Engineers program (eete@UOW) at the University of Wollongong in 2011-2012. Other courses included in the program are;

Course Title	Date
• Renewable and distributed generation	24-25 Nov 2011
• Energy efficiency in electrical energy utilisation	27-28 Mar 2012
• Electricity network energy efficiency enhancement	16-17 Apr 2012
• Energy efficiency enhancement in domestic buildings	17-18 May 2012
• Energy auditing and de-carbonization of the built environment	24-25 May 2012
• Energy auditing and efficiency in industrial systems	23-24 Aug 2012
• Energy efficiency enhancement through retrofitting of commercial buildings	1-2 Nov 2012
• Smart metering and demand side management	15-16 Nov 2012
• Improving energy efficiency in industrial processes	22-23 Nov 2012

Organisations or individuals registering as a group or in one or more of the above courses within the energy efficiency training for engineers program may be entitled to a group or multiple course discount. Please contact registration enquiries below for details.

Accommodation

Arrangements for accommodation are the responsibility of participants and costs are not included in the course fee. A list of hotels and motels in the Circular Quay area will be supplied to participants upon registration. Daily travel to venue is convenient by public transport.

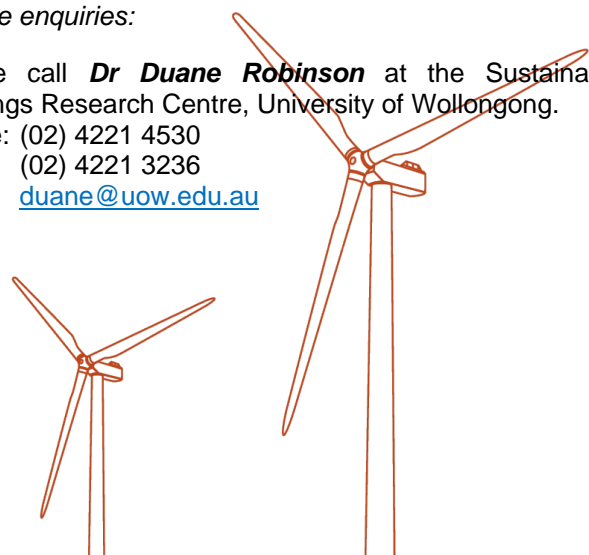
Enquiries

Registration enquiries:

Please call **Ms Rachel Weine** at the Faculty of Engineering, University of Wollongong.
 Phone: (02) 4221 4566
 Fax: (02) 4221 3143
 Email: rweine@uow.edu.au

Course enquiries:

Please call **Dr Duane Robinson** at the Sustainable Buildings Research Centre, University of Wollongong.
 Phone: (02) 4221 4530
 Fax: (02) 4221 3236
 Email: duane@uow.edu.au





Electricity Network Energy Efficiency Enhancement

16th – 17th April 2012 – Sydney

Registration Form



Please enrol me in the two-day course “Electricity Network Energy Efficiency Enhancement” to be held in Sydney, Australia from 16th – 17th April 2012.

Cost per person: AUD\$ 980 inclusive of GST

Please register before 2nd April 2012 (please see Note below).

Surname:..... Given Name:.....
 Organisation..... Job title/position.....
 Postal Address.....
 State..... Postcode..... Country.....
 Telephone..... Fax.....
 Mobile..... Email.....
 Special dietary requirements.....

Pre-Course Questionnaire

To assist us to tailor the course to your experience please answer the following (*please circle the appropriate weighting*).

	Very limited		Very Extensive		
My knowledge in the field of electricity network energy efficiency is:	1	2	3	4	5
My project experience in the field of electricity network energy efficiency is:	1	2	3	4	5
My organisation’s objectives in the field of electricity network energy efficiency are:	1	2	3	4	5
My organisation’s project experience in the field of electricity network energy efficiency is:	1	2	3	4	5
My engineering or other professional discipline is:					

Methods of Payment

If you wish to pay by **credit card**, please fill out the details below and **fax to +61 2 4221 3143**

Please debit (circle): Bankcard Visa Mastercard

Card number:

Expires: / in the amount of

AUD\$.....

Name on card:

Signature:

Email for receipt:

Cheque payable to “The University of Wollongong”

Mail to: Attention: Ms Rachel Weine
 (CPD Course Registration)
 Faculty of Engineering
 University of Wollongong NSW 2522 Australia

Note: There is no guarantee that economic participation levels for this course can be achieved. Registrants will be notified on the 5th April 2012 if the course cannot proceed due to insufficient numbers. The program may be changed at any time due to unforeseen circumstances. If the course cannot proceed for any reason, UOW will not accept liability of whatsoever kind for expenses incurred by any person or corporation with the sole exception of the course investment, which will be refunded in full.