

## Integrating Renewable (Wind) Energy Systems

Offered by

**Centre for Renewable Energy and Power Systems**  
**University of Tasmania**  
**Hobart - Tasmania**  
**4 – 6 April 2011**

### INTRODUCTION

The integration of new Renewable Energy Systems (RES) into existing AC electric power grids can present many and varied challenges to project developers, system planners and equipment manufacturers. This course will give practical insights into the issues that could be faced and the considerations that should be made by all project participants. The course will focus on those renewable energy resources (wind, solar) where the use of modern power electronic converters has become critical for their successful integration. Case studies describing the integration of several recent Windpark projects (small, medium and large) will be highlighted.

### COURSE OUTCOMES

This course offers practical knowledge and skills related to:

- Basic AC system operation and its frequency / voltage control.
- Understanding the differences between the common wind generation options.
- The major impacts of RES upon existing power systems.
- The RES requirements (from the grid) at its point of common coupling.
- Common issues faced with RES integration.
- How various utilities specify the interface with RES.
- The future direction in the design and application of economic RES

### CONTACT

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<https://events.conventionwise.com.au/ei/cm.esp?id=9603010000293&pageid= 34811U3UG>



# PROFESSIONAL DEVELOPMENT SHORT COURSE

## COURSE TIMETABLE

Day 1	Day 2	Day 3
Course Overview	Grid Codes/Rules	Case Study (medium system integration)
Synchronous Power Systems	Fault Level / Inertia	
MW / Mvar control	Fault Ride-Through	VSC HVDC
Two Axis components	Harmonics and resonance	Case Study (large system integration )
Asynchronous Generators	Case Study (small system integration)	
PWM Converters	Free Session	Multi-Terminal Systems
WTG options		Future WTG capabilities

## COURSE INSTRUCTOR

Dr. Mark Davies, MIEAust. is a freelance engineer contracted to Siemens AG and also a casual lecturer at UTAS. He received B.Sc. (electrical/electronic) and Ph. D. (converter control systems) degrees from Staffs. University (UK) and has over 25 years experience in electric power systems starting with GEC in 1981. He worked on the UK's first power electronic converters for AC grid applications and since the mid 1990's has focused on high power Voltage-Sourced Converters for reactive power control and HVDC transmission. Since the early 2000's the application of these equipments has grown significantly - in-line the worldwide increase in renewable energy usage. Recently Mark has been involved in the design, test and commissioning of several major renewable energy projects in both Australia and overseas.

## REGISTRATION

The closing date for registration is Monday, 23<sup>rd</sup> March 2011. The cost (including food and a printed set of the course notes) for the API members or members of the Centre for Renewable Energy and Power Systems is \$3,500 inclusive of GST, and for non-members the cost is \$4,500 inclusive of GST. Special 10% discounts are available for members of the Institution of Engineers Australia. In addition, the following cumulative discounts apply:

- 10% for early bird registrations paid by 4<sup>th</sup> March 2011
  - 20% for group registrations for 5 people or more from the same organisation.
- <https://events.conventionwise.com.au/ei/cm.esp?id=9603010000293&pageid=34811U3UG>

## CONTINUING EDUCATION OPPORTUNITIES

The Australian Power Institute has identified a need to provide *practical* post graduate training for engineers employed in the power industry. This course is a professional development course. It is aimed at power engineers who would like to broaden their appreciation of power engineering at both a theoretical and practical level. The course is also included in a *Graduate Certificate in Renewable Energy and Power Systems* offered at the University of Tasmania:

[http://courses.utas.edu.au/portal/page?\\_pageid=53,32959&\\_dad=portal&\\_schema=PORTAL&P\\_COURSE\\_CODE=N5B&P\\_YEAR=2011](http://courses.utas.edu.au/portal/page?_pageid=53,32959&_dad=portal&_schema=PORTAL&P_COURSE_CODE=N5B&P_YEAR=2011)

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