



The Knowledge Network

The Institution of *Engineering and Technology*  
course on

# Distributed Generation Systems 2008

8–10 September 2008

NaREC, Blyth, Northumberland, UK

## KEY BENEFITS

- Explore on the latest thinking and methodologies concerning generation plant connection
- Network and discuss best practice with peers at this unique and internationally respected course
- Receive your own copy of Engineering Recommendation G.59 and have its application explained through numerous case studies
- Hear from leading experts in the field discussing industrial experiences in a case lead framework
- Obtain detailed course notes for future reference
- Technical visit to the outstanding New and Renewable Energy Centre

## FEEDBACK FROM LAST YEAR

- “ Excellent technical content overall. Masterful presentations, especially by Prof. Haydock and Mr Hensman. Together they were fabulous!!
- “ Excellent refresher for many topics and good view of Distributed Generation. Very good visit to NaREC.”
- “ Very useful content, good delivery. I learnt a great deal, which will help me at work.”

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Register at [www.theiet.org/disgen](http://www.theiet.org/disgen)

## INTRODUCTION

The UK Government aspires to generate 20% of UK electricity from renewable energy sources by the year 2020. In practice, much of this will be connected as distributed generation, primarily domestic and industrial CHP schemes, wind farms and diesel power generation, in addition to other renewables such as hydro and solar PV.

This course provides engineers with a comprehensive understanding of the technical issues relating to distributed generation. Covering a large range of topics, from the principal prime movers to generators, their control and protection, the course also encompasses connection to the distribution network in compliance with Engineering Recommendation G.59, a copy of which will be provided to delegates.

The comprehensive scope of the course is provided through an effective combination of lectures and case studies exploring in detail fault calculations, protection and earthing of generators and generator sizing. Industrial speakers will present examples of actual installations for each of the principal prime mover technologies; CHP, wind and diesel. In addition, an awareness of the planning and commercial issues will be addressed along with a vision of the future developments in Distributed Generation.

**THIS COURSE WILL PROVIDE AN OPPORTUNITY TO UNDERTAKE CONTINUED PROFESSIONAL DEVELOPMENT FOR NEW AND EXPERIENCED ENGINEERS ALIKE**

### CONDITIONS OF BOOKING

Form should be received no later than Monday, 1 September 2008. All participants registering less than two weeks before the date of the event are advised to bring a copy of their registration form with them.

### CANCELLATION

In the event of cancellation and provided that written notice is received seven days prior to the event, a refund of 50% of the total fee will be made. If no notice of cancellation is received, no refund can be made. The Institution of Engineering and Technology reserves the right to cancel any event. In this case, the full fee will be refunded unless a mutually convenient transfer can be arranged. Details of event changes or cancellations are available by phoning +44 (0)1438 767 343.

## WHO SHOULD ATTEND

*All engineers involved, or potentially involved, with distributed generation from organisations such as:*

- *Generating companies*
- *Regional electricity companies*
- *Renewable energy groups*
- *Industries with their own generation capacity*
- *Consultants*
- *Academics*
- *Researchers*
- *Manufacturers*

**In particular, those who require first-hand explanations of the application of Engineering Recommendation G.59 will benefit greatly from this course.**

Organised by The Institution of **Engineering and Technology**  
**Power Generation, Conversion and Utilisation Network**

### NAME SUBSTITUTIONS

Name Substitutions are accepted at any time by fax: +44 (0)1438 765659 or email: [events2@theiet.org](mailto:events2@theiet.org)

### SUPPORTING ORGANISATIONS

Members of supporting organisations who can provide evidence of their affiliation will be admitted at members' rates.

### DELEGATES WITH SPECIAL NEEDS

The Institution of Engineering and Technology aims to offer fully accessible events to all its delegates. Please help us to accommodate any individual needs that you may have by attaching a note to the registration form. We will contact you to discuss this as necessary.

## EVENT PROGRAMME

### MONDAY, 8 SEPTEMBER

- 08.30 Registration**
- 09.25 Welcome to the Course**  
**Doug Henderson, Senior Lecturer,**  
**Napier University**
- 09.30 Generators and their Control (Part 1)**  
**Doug Henderson, Senior Lecturer,**  
**Napier University**
- 11.00 Refreshments**
- 11.15 Generators and their Control (Part 2)**  
**Doug Henderson, Senior Lecturer,**  
**Napier University**
- 12.45 Lunch**
- 13.45 Distribution Networks and Connection of Distributed Generation (Part 1)**  
**Geoffrey Hensman, Director,**  
**Hensman Associates**
- 15.15 Refreshments**
- 15.30 Distribution Networks and Connection of Distributed Generation (Part 2)**  
**Geoffrey Hensman, Director,**  
**Hensman Associates**
- 17.00 Close of Sessions**
- 17.00 Light Buffet**
- 17.30 Technical Visit of the NaREC facilities**

### TUESDAY, 9 SEPTEMBER

- 09.00 Protection of Distributed Generation**  
**Miles Redfern, Senior Lecturer,**  
**University of Bath**
- 10.30 Refreshments**
- 10.45 Case Study 1**  
**Fault Calculations – the Connection of**  
**Generating Plant to a Public Network**  
**Geoffrey Hensman, Director,**  
**Hensman Associates and**  
**Professor Lawrence Haydock,**  
**Director, LH Consultants Ltd**
- 12.15 Lunch**
- 13.00 Case Study 2**  
**Generator Protection**  
**Miles Redfern, Senior Lecturer,**  
**Bath University and**  
**Geoffrey Hensman, Director,**  
**Hensman Associates**
- 14.35 Case Study 3**  
**Generator Earthing**  
**Geoffrey Hensman, Director,**  
**Hensman Associates**

- 14.35 Case Study 3**  
**Generator Earthing**  
**Geoffrey Hensman, Director,**  
**Hensman Associates**
- 16.05 Refreshments**
- 16.20 Wind Generation and Small Wind Farms**  
**Joe Duddy, Senior Electrical Engineer,**  
**RES Ltd**
- 17.30 Close of Sessions**
- 19.00 Course Dinner**

### WEDNESDAY, 10 SEPTEMBER

- 09.30 Power Conversion**  
**Dr Gordon Smith, Private Consultant**
- 10.30 Refreshments**
- 10.45 Diesel and CHP Systems for Distributed Generation Systems**  
**David Linsell, Divisional Director,**  
**McLellan and Partners Ltd**
- 12.00 Lunch**
- 13.00 Case study 4**  
**Generator sizing**  
**Professor Lawrence Haydock, Director,**  
**LH Consultants Ltd**
- 15.30 Close of Course and Refreshments**

## MONDAY'S TECHNICAL VISIT TO NAREC

The course will involve a tour of NaREC, including its Energylink Laboratory which is a unique testing and development platform focused on providing testing, analysis and demonstration services to the micro to medium scale power generation technology sector.

The Energylink Laboratory offers bespoke facilities and services enabling technology developers, network operators, and industry regulators to identify and investigate issues around network integration and operational characteristics of new power technologies under 'real world' conditions, prior to connection to the public electricity network.



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# Distributed Generation Systems 2008

**8-10 September 2008**

NaREC, New and Renewable Energy Centre, Eddie Ferguson House,  
Ridley Street, Blyth, Northumberland, NE24 3A

## 5 Easy Ways to Register

- 1 Online:**  
www.theiet.org/disgen
- 2 Fax:**  
+44 (0) 1438 765 659
- 3 Phone:**  
+44 (0) 1438 765 343
- 4 Email:**  
eventscs2@theiet.org
- 5 Post:**  
Finance Dept, The Institution  
of Engineering and Technology,  
PO Box 96, Stevenage, Herts,  
SG1 2SD 3AG

## REGISTRATION FORM

### DATA PROTECTION

The information that you provide to the IET will be used to ensure we provide you with products and services that best meet your needs. This may include the promotion of specific IET products and services by post and/or electronic means. By providing us with your email address and/or mobile telephone number you agree that we may contact you by electronic means. You can change this preference at any time by visiting [www.theiet.org/my](http://www.theiet.org/my)

If you consent to your details being passed on to the event sponsor(s) please tick here

### Delegate Details (for ease, attach your business card) – Please photocopy form for multiple bookings

(Mr/Mrs/Ms/Miss/Dr) Family Name  First name

Business E-mail  Tel

Fax  Job Title

### Company Details

Name of Company

Department  Address

City  Postcode  Country

Nature of Company/ Business

Institution Membership Number (if applicable)  Dietary or other requirements

Member? Yes  No  I heard about this event by: Flyer in post  Email  Advert (Institution Publication)  Advert (other)  The IETs Website  Other

### PRICES AND PAYMENT INFORMATION

The course fee covers full documentation including a copy of Engineering Recommendation G.59, course dinner, lunch, interval refreshments and technical visit.

Delegates can take advantage of the early bird rate by registering before Friday, 8 August 2008

#### Payment must accompany this registration form.

Registration will only be confirmed on receipt of the full payment.  
Payment via purchase order is not accepted.

FEES Early Bird Rate – Registrations received on or before 8 August 2008		£	p
Early Bird IET Member	£881.25 (£750.00 + £131.25 VAT)		
Early Bird Non Member	£998.75 (£850.00 + £148.75 VAT)		
Full Rate IET Member FEES Standard Rate - Registrations received after 8 August 2008	£998.75 (£850.00 + £148.75 VAT)		
Full Rate Non Member	£1116.25 (£950.00 + £166.25 VAT)		
Early Bird Group Rate for 5 Delegates (please use 1 form per delegate)	£3525.00 (£3000.00 + £525.00 VAT)		
IET Power Academy Graduate/ Under Graduate	£3995.00 (£3400.00 + £595.00 VAT)		
<b>TOTAL REMITTANCE</b>			

- Enclosed is a cheque made payable to "IET" and crossed.  
 Payment by bank transfer (BACS): For information on how to pay by bank transfer call Customer Services on +44 (0) 1438 767 343

Credit card

Valid from \_\_/\_\_/\_\_ Expiry \_\_/\_\_/\_\_ Issue No.

3 or 4 digit Card Security Code (CSC)

Cardholder's name  Tel No.

Credit card billing address  Postcode

Signature  Date

**\* ALL STUDENTS MUST HAVE THEIR APPLICATIONS ENDORSED BY THEIR PROFESSOR OR HEAD OF DEPARTMENT**  
PAYMENT NOT RECEIVED BEFORE THE EVENT MAY RESULT IN ENTRY BEING DENIED.

### BANK TRANSFERS

Bank Transfers (BACS) can be made to Barclays Bank Plc, UK Bank, 1 Churchill Place, London E14 5HP. Account No: 50480606 Sort code: 20-65-82. IBAN GB53 BARC 2065 8250 4806 06. A copy of the draft must accompany this form. UK Institution of Engineering and Technology VAT Reg No: 240-3420-16. The Institution of Engineering and Technology is registered as a Charity in England & Wales (no 211014) and Scotland (no SC038698)