



5th Successful Run in Asia!

INTEGRATION OF DISTRIBUTED GENERATION

29 – 30 SEPTEMBER 2015, SINGAPORE

Past Testimonials

“By attending this seminar, I have learned the new policies/processes/experiences of other countries that may be applied in our country. The presenters know very well the topics discussed in the training”
- Principal Engineer, National Grid Corporation of the Philippines

“The integration of distributed generation Training course provided us with a “bigger picture” on various issues in different countries.”
- Division Head, National Grid Corporation of the Philippines



Expert Course Faculty
Dr Hugh Outhred



Dr Maria Retnanestari



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About This Training Course

This two-day course explores the engineering issues associated with integrating distributed generation into the electricity industry, discussing the main distributed generation technologies and their characteristics, their power system engineering implications, and methods for integrating distributed generation into electricity industry operation and planning, including the potential role of 'smart grid' concepts. Particular attention will be paid to small-scale grid connected PV. The course presents case studies on the approaches taken to integrating distributed generation in the UK, US, Australia and Indonesia.

Learning Outcomes

- The definition of distributed generation and an overview of the main technologies used in distributed generation, focusing on their technical characteristics.
- The main engineering implications of distributed generation for the electricity industry, focusing on power system operation and planning, with particular attention to small-scale grid-connected PV.
- Key methods for integrating distributed generation into the electricity industry focusing on protection and control requirements, technical standards, grid connection codes, voltage and frequency control and power system security.
- The role of 'smart-grid' concepts in integrating distributed generation.
- Approaches taken to distributed generation integration in the UK, USA and Australia.
- Experience with integrating micro-hydro generation into the Indonesian electricity industry.

Who Should Attend

- Professionals from the renewable energy, electricity and gas industries
- Regulatory bodies, government, banks, brokers, lawyers, consultants, industry advisors
- Major energy users.

Unique Features with **powerEDGE**

- Pre-Course Questionnaire to help us focus on your learning objectives
- Detailed Course & Reference Manual for Continuous Learning and Sharing
- Practical Exercises & Case Examples to better understand the principles
- Limited class size to ensure One-to-One Interactivity
- Assessment at the end of the course to help you develop a Personal Action Plan

This training course has a limited attendance for up to 20 participants only.

Sessions commence at 9am on all days, with short intervals at 10.30am and 3.30pm respectively.

Refreshments will be provided in the short intervals.

Lunch will be provided at 12:30pm for 1 hour. Sessions will end at 5pm on all days.

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Course Outline

Day 1

- 0900-1030 **Distributed generation technologies and their technical characteristics**
Defines distributed generation and discusses the main technologies used for distributed generation, focussing on their technical characteristics and the situations in which they are commonly used.
- 1030-1100 AM Tea Break
- 1100-1230 **Engineering implications of distributed generation for the electricity industry**
Discusses the engineering implications of distributed generation for the electricity industry, including the strengths and weaknesses of distributed generation relative to large, remote power stations and their effects on power system operation and planning. Particular attention will be paid to small-scale grid-connected PV.
- 1230-1330 Lunch
- 1330-1500 **Methods for integrating distributed generation into the electricity industry**
Discusses methods that can be used to effectively integrate distributed generation into the electricity industry, including protection & control requirements, technical standards, grid connection codes, voltage and frequency control and management of power system security.
- 1500-1530 PM Tea Break
- 1530-1700 **The role of 'smart grid' concepts in integrating distributed generation**
Discusses 'smart grid' concepts and the roles they might play in facilitating the integration of small-scale distributed generation.
- 1700-1730 Discussion

Day 2

- 0900-1030 **Case study: Integration of distributed generation into the UK electricity industry**
Reviews the characteristics of the UK electricity industry and discusses the approach taken to integrating distributed generation into that industry.
- 1030-1100 AM Tea Break
- 1100-1230 **Case study: Integration of distributed generation into the US electricity industry**
Reviews the characteristics of the US electricity industry and discusses the approach taken to integrating distributed generation into that industry.
- 1230-1330 Lunch
- 1330-1500 **Case study: Integration of DG into the Australian electricity industry**
Reviews the characteristics of the Australian electricity industry and discusses the approach taken to integrating distributed generation into that industry.
- 1500-1530 PM Tea Break
- 1530-1700 **Case study: Integration of micro-hydro into the Indonesian electricity industry**
Reviews the characteristics of the Indonesian electricity industry and discusses experience with integrating distributed micro-hydro generation into that industry.
- 1700-1730 Discussion

Your Expert Faculty

Dr. Hugh Outhred

In a 35-year research career, Hugh Outhred (PhD) has contributed to electric power system analysis and control, the theory of electricity industry restructuring and electricity market design, renewable energy technology, renewable energy integration, energy sector policy and sustainability policy. He has taught nearly 100 short courses on electricity industry restructuring and sustainability in a range of countries since 1988.

In 1993 and 1994 he co-authored a report on electricity industry restructuring for the California Energy Commission that highlighted the complexity of electricity restructuring in that context.

In 1995 and 1996 he led a project for the Australian National Grid Management Council to undertake electricity-trading experiments according to the proposed National Electricity Market trading rules prior to their formal implementation.

From 2004 to 2007, he was the founding Presiding Director of the Centre for Energy and Environmental Markets at the University of New South Wales. From 2009 to 2011, he was a Lead Author for the International Panel on Climate Change (IPCC) Special Report on Renewable Energy Sources and Climate Change Mitigation, published in 2011.

Hugh has been a Fulbright Senior Fellow at the University of California Berkeley, USA and has held visiting positions at Massachusetts Institute of Technology in the USA, the University of Liverpool in Britain and the Universidad Pontificia Comillas in Spain.

He has been a Board member of the Australian Cooperative Research Centre for Renewable Energy and an Associate Director of the Centre for Photovoltaic Devices and Systems at the University of New South Wales. He was a member of the NSW License Compliance Advisory Board and a member of the National Electricity Tribunal throughout their existence from 1997 to 2000 and 1998 to 2006 respectively.

Hugh Outhred (PhD), a Fellow of the Australian Institute of Energy & was, prior to his retirement in 2007, Presiding Director of the Centre for Energy & Environmental Markets at the University of New South Wales, Sydney Australia.

Dr. Maria Retnaestri

Dr. Maria Retnaestri is a Visiting Fellow in the School of Electrical Engineering and Telecommunications at the University of New South Wales.

She holds the degrees of Bachelor of Electrical Engineering (STTNAS Jogjakarta), Master of Engineering Science in Electrical Engineering (UNSW) and PhD in Electrical Engineering (UNSW).

In her PhD research, Maria Retnaestri developed the I3A (Implementation, Accessibility, Availability and Acceptability) Framework to investigate overall sustainability of renewable energy projects, considering their institutional, financial, technological, social and ecological sustainability dimensions. From 2008 to 2011, she then further developed and applied this research to identify ways to overcome barriers to renewable energy for sustainable development in Indonesia with financial support from an Australian Development Research Award.

With that financial support, she conducted more than 20 workshops, seminars, public lectures, field visits and study tours in Indonesia involving various kinds of renewable energy stakeholders in knowledge sharing and capacity building activities.

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Courses Available

[4 Pillars of Transformer Condition](#)
[Advanced Project Finance for Power](#)
[Advanced Technical Report Writing & Presentation Skills](#)
[Advanced Turnaround Shutdown & Outage Management](#)
[Ancillary Services in Competitive Electricity](#)
[Asset Management for the Power Industry](#)
[Best Practice Renewable Energy Capital & Project Management](#)
[Biomass Power Generation](#)
[CFB Combustion for Boiler Operations](#)
[Clean Development Mechanism and Carbon Markets](#)
[Coal Contracts](#)
[Combined Cycle Power Plants Operation](#)
[Combined Heat & Power \(CHP\) and Co-Generation Plant Operations](#)
[Competency Management System for the Power Industry](#)
[Design & Operations of Circulating Fluidized Bed Boiler](#)
[Developing & Structuring Public-Private Partnership \(PPP\) for Infrastructure](#)
[Effective Tender Process Management for Power & Utilities](#)
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[Electricity Industry Design](#)
[Electricity Network Planning](#)
[Electricity Retail Contracts](#)
[Electricity Theft](#)
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[EPC Contract Management for Power & Utilities](#)
[Essentials of Coal Markets and Trading](#)
[Essentials of Power Trading](#)
[Excitation Systems](#)
[Feed-In Tariffs for PV Systems](#)
[Finance for Non-Finance Professionals in Power & Utilities](#)
[Financial Modelling for Project Finance in Power & Utilities](#)
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[Fundamentals of Geothermal Energy](#)
[Fundamentals of Power Generation](#)
[Gas & LNG Contract Negotiation](#)
[Gas Turbine Generator Selection, Operation & Maintenance](#)
[Gas Turbine Hot Gas Paths, Rotors & Failure Analysis](#)
[Gas Turbine Major Inspection & Overhaul](#)
[GE Gas Turbine Operations Simulation Based](#)
[HRSG Design, Operations & Understanding, Controlling of HRSG Damage Mechanisms](#)
[HV Substation Design & Construction](#)
[IEC for Utilities](#)
[Integration of Distributed Generation](#)
[Introduction to Carbon Capture & Storage](#)
[Introduction to Clean Coal Technology](#)
[Introduction to Power Systems](#)
[Keeping Electrical Switchgear Safe](#)
[Leadership & Team Dynamics for Power & Utilities](#)
[LNG Fundamentals](#)
[LNG Markets & SPOT Trading](#)
[Maintenance Planning & Scheduling](#)
[Making IPP & Renewable Energy Projects Contract Frameworks Bankable](#)
[Managing Complex Projects for Power and Utilities Professionals](#)
[Medium Voltage & High Voltage Switchgear Metallurgy for Engineers](#)
[Mechanical Engineering for Non-Mechanical Engineers](#)
[Mini Hydro Project Analysis](#)
[MKV Speedtronic Control System](#)
[MK VI Speedtronic Control System](#)
[Nuclear Energy Project Planning & Economics](#)
[Nuclear Power](#)
[Offshore Platforms Electrical Systems Design & Illustrations](#)
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[Power Generation Commissioning, Operations & Maintenance](#)
[Power Generation Operation, Protection & Excitation Control](#)
[Power Plant Chemistry for Chemist & Chemical Engineers](#)
[Power Purchase Agreements](#)
[Process Control Methods](#)
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[Project Management for Power and Utilities](#)
[Relay Protection in Power Systems](#)
[Reliability Centered Maintenance Masterclass](#)
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[Renewable Energy Integration](#)
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[Risk Management in Power Markets](#)
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[Rotating Equipment Maintenance & Reliability Excellence](#)
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[Waste to Energy Plant Operations](#)
[Water Treatment and Corrosion Control for Steam Generation and Power Production](#)
[Writing Effective Standard Operating Procedures \(SOP\) for Power & Utilities Professionals & Engineers](#)

Frequently Asked Questions (FAQs)

1. Does PowerEdge have other programmes than those listed?

We have more than 200 programmes that we are capable of running. All we need is for you to contact us and request for the preferred programme and we will be able to develop it.

2. Where is PowerEdge based?

PowerEDGE is headquartered in Singapore but we run our training programmes in different venues around Asia.

3. What does PowerEdge do?

We are a Power & Utilities Training Specialist.

4. Can this course be done in our city?

It absolutely can. Get in touch with us to request for a training programme to be carried out in your city.

5. Can you reduce the price of our preferred course?

While our price has been reduced before it is even launched, we are always happy to help you with further discounts.

6. Can you change the dates of the course?

If you have a special requested date, let us know and we will arrange another session for you.

7. Who are the companies that will be participating?

This varies from a diversity of Power Operators, Regulators, Financiers, to Vendors in the Power & Utilities industry.

8. Where is the venue for the course?

We usually engage a 4 to 5 star hotel meeting room to ensure the comfort of our participants.

9. How many delegates should we expect for each course?

This varies from 15 to 20 participants. Class sizes are kept small to allow trainers to focus better on each participant.

10. What are the different payment modes?

We accept Visa/MasterCard, cheques, bank transfers and cash on site.

11. Is accommodation included when I sign up for a course?

Accommodation is not included in the course fee but we are always happy to advise on available accommodations.

12. Can I get a cheaper accommodation through PowerEdge?

We will be pleased to help you negotiate a better rate with hotels.

13. Is lunch provided during the course?

We provide lunch and 2 tea breaks every day during our training programmes.

14. Are the training materials included once I have signed up for a course?

Yes, training and course materials are included in the course fee.

15. Will there be a certificate for the course?

Yes, there will be a certificate of participation upon completion of a course.

16. Who are PowerEdge trainers?

They are expert consultants and practitioners with many years of experience in the subject matter that they deliver on.

17. Are PowerEdge trainers competent?

We have received numerous favourable feedbacks on our trainers from past participants.

18. Can PowerEdge assist with Visa travel applications?

We can assist in advising you on the relevant procedure(s) and embassies/consulates that provide Visa for travel purposes.

19. Can we purchase training materials without attending a course?

Unfortunately this option is not available as training materials are specially developed for courses.

20. Can course content be tweaked to cater to our needs?

Of course! Just let us know your request and we will get the trainer to assist in carrying it out.

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REGISTRATION FORM

	NORMAL PRICE	Early Bird Ends 31 Jul 2015	GROUP OF 3 or More
2 Day Programme	SGD 3, 299 Per Participant (*GST Exclusive)	SGD 3, 099 Per Participant (*GST Exclusive)	SGD 2, 799 Per Participant (*GST Exclusive)
	SGD 3, 529.93 Per Participant (GST Inclusive)	SGD 3, 315.93 Per Participant (GST Inclusive)	SGD 2,994.93 Per Participant (GST Inclusive)

ATTENDEE DETAILS

Name Job title

Tel Department Email

Name Job title

Tel Department Email

Name Job title

Tel Department Email

Name Job title

Tel Department Email

Name Job title

Tel Department Email

COMPANY DETAILS

Organisation name Industry.....

Address

Postcode..... Country.....

Tel Fax.....

PAYMENT METHODS

By Cheque/ Bank Draft: Make Payable to PowerEdge Pte Ltd.

By Telegraphic Transfer: Please quote AE1 with the remittance advise

Account Name: PowerEdge Pte. Ltd.

Bank Code: 7339 Branch code: 686 Account Number: 686-253386-001 Swift Code: OCBCSGSG

Bank Address: 65 Chulia Street OCBC Centre, Singapore 049513

All bank charges and payment in Singapore dollars (SGD) to be borne by payer. Please ensure that PowerEdge Pte Ltd receive the full invoiced amount.

PAYMENT POLICY

Payment is due in full at the time of registration. Full payment is mandatory for event attendance. I agree to PowerEdge Pte Ltd, payment terms

* GST- Exclusive price is only applicable for overseas corporate customers subject to qualifying conditions.

CANCELLATIONS & SUBSTITUTIONS

You may substitute delegates at any time. POWEREDGE PTE LTD does not provide refunds for cancellations. For cancellations received in writing more than seven (7) days prior to the training course you will receive a 100% credit to be used at another POWEREDGE PTE LTD training course for up to one year from the date of issuance. For cancellations received seven (7) days or less prior to an event (including day 7), no credits will be issued. In the event that POWEREDGE PTE LTD cancels an event, delegate payments at the date of cancellation will be credited to a future POWEREDGE PTE LTD event. This credit will be available for up to one year from the date of issuance. In the event that POWEREDGE PTE LTD postpones an event, delegate payments at the postponement date will be credited towards the rescheduled date. If the delegate is unable to attend the rescheduled event, the delegate will receive a 100% credit

4 ways to Register

- Online Web Registration
- info@poweredgeasia.com
- (65) 6741 9927
- (65) 67478737

RELATED COURSES

- ✓ [Keeping Electrical Switchgear Safe](#)
- ✓ [Introduction to Power Systems](#)
- ✓ [Excitation Systems](#)
- ✓ [Fundamentals of Power Generation](#)

On Site Training

Can't make it for the Course?
We'll make the course come to you!!

Simply let us know your preferred time and dates and we will meet you at your schedule and venue.

With a host of highly trained experts, we will be happy to customize your programme with your needs 100% fulfilled.

Contact us today at

- info@poweredgeasia.com
- (65) 6741 9927