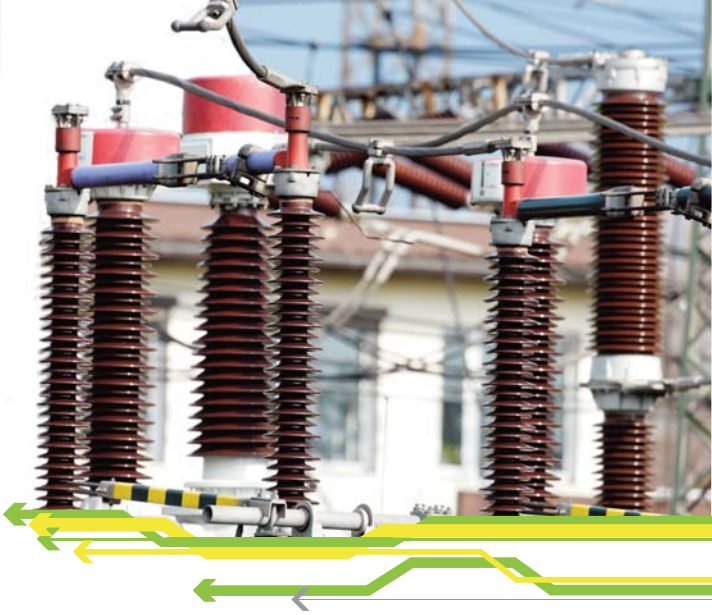
Smart Grid for a Finite Planet:

How Smart Grid + Smart Meters + Smart Prices + Smart Devices = **Smart Energy Consumption**

The Australian Power Institute



1 Day Master Class
Hobart 6 October 2010 | Sydney 11 October 2010
$660 API Members | $880 API Non-Members

Includes interactive presentation, comprehensive notes, luncheon, refreshments & attendance certificate recognised for Continuing Professional Development (CPD) by Engineers Australia (EA) in accordance with EA CPD Guidelines.

Target Audience

This course is suitable for a range of experiences involved with Smart Grids from new graduates through to experienced professionals and senior managers who need or wish to better understand how Smart Grid + Smart Meters + Smart Prices + Smart Devices = Smart Energy Consumption.

Course Summary

Smart grid means different things to different people. Broadly speaking, it encompasses a more flexible, more intelligent and more accommodating network that enables massive amounts of intermittent renewable energy resources to be absorbed while allowing distributed generation and a host of other innovations including storage and 2-way flow into and out of the grid.

With concerns about climate change, renewable energy resources are expected to play a growing role in the foreseeable future as well as other low-carbon generation options. Distributed generation is also likely to assume a more dominant role. These developments as well as variable pricing schemes will mean that the future smart grid must act as a two-way conduit and as an integrator – as opposed to its current one-way role delivering power from central generation sources to load centers.

Aside from examining the future role of smart grid, this course will focus on an evolution involving the application of smart meters to deliver smart prices to an increasing array of smart devices. With appropriate integration and variable pricing, this will result in smart energy consumption, reduce peak demand, encourage energy efficiency and lower GHG emissions.

Finally, the course questions the traditional engineering-dominated view that customer energy demand is a given and adequate investment in supply resources must be made to meet it. It turns out that future demand need not be taken as a given – it can be managed and controlled. As energy prices are likely to rise in the future, and should greenhouse gas emissions be restricted, clever means of meeting customer demand with modest energy input will become the norm.

Course Outline

The Evolution of Smart Grid
- Inception of smart grid concept
- From smart to flexible, versatile and integrated
- What can we expect from a smart grid
- What makes smart grid different than the grid we currently have

Renewable Energy Resources & Distributed Generation
- Why renewable energy resources?
- How much, how soon & at what cost?
- Characteristics of renewable energy resources
- The curse of intermittency
- Distributed generation & zero net energy buildings

Integration, Operation & Storage
- How to absorb renewable energy when available
- What to do when it is not
- Impact on operations & reliability
- Promise of storage technologies
- One- and two-way storage options

Smart Prices, Smart Devices, Smart Usage
- What makes a smart price?
- Smart price + smart device
- Smart meters
- Smart energy utilization
- Integration issues

Energy Efficiency & Demand Response
- Why energy efficiency matters?
- What do we mean by demand response
- What is the potential for EE & DR
- Implementation issues & barriers

Managing Energy & Peak Demand
- Fundamentals of energy services
- How can we accomplish more with far less energy?
- Why demand is not a given, nor should demand growth be taken for granted
- Managing declining demand

Beyond the Meter & Potential Game Changes
- Lifestyle & behavior
- Technology & human factor
- Think big: Renewable energy resources
- Think small: Zero net energy buildings
- Think smart: Smart prices & devices
- Think electric: Electric vehicles & battery storage
- Think lifestyles: Living happily with high cost energy

Course Wrap up and Discussion

About the Facilitator

Dr Perry Sioshanshi

Perry Sioshansi is President of Menlo Energy Economics, a consulting firm in San Francisco, California. Dr. Sioshansi's professional experience includes working at Southern California Edison Company (SCE), the Electric Power Research Institute (EPRI), National Economic Research Associates (NERA), and most recently, Global Energy Decisions (GED).

A frequent visitor to Australia, Dr. Sioshansi provides consulting services to the industry & policy makers on a range of topics including climate change, sustainability, energy efficiency & renewable energy.

He has authored and edited a number of books including Electricity Generation in a Carbon Constrained World, published in 2009 and What Energy Future? Sustainable Living on a Finite Planet, forthcoming in 2010, which provide a rich source of material for this class.

He is the editor and publisher of EEnergy Informer, a monthly newsletter with wide international circulation. He is a regular contributor to The Electricity Journal. He has degrees in Engineering and Economics, including an MS and Ph.D. in Economics from Purdue University.

Recognised for Continuing Professional Development (CPD) by Engineers Australia [refer to EA CPD Guidelines]

Registration Form

Please complete and mail, fax or scan email this form to EEA for each registration.
This registration form is also available at www.eeaust.com.au.
Please print clearly in black pen and in block letters.

EEA Short Courses details

Course title

City

Course dates

Participant's details

Title ☐ Mr ☐ Mrs ☐ Ms ☐ Dr

First name

Family name

Position

Engineering Discipline (if applicable; eg Civil, Electrical, Mechanical)

Organisation

Postal Address

Suburb/Town

State Postcode Country

Please indicate ☐ Home address ☐ Business address

Telephone

Mobile

Fax

Email

Are you a member of Engineers Australia?

☐ Yes _____

Engineering Australia Member Number *(if possible)*

Please indicate course fee $AUS

(Refer to EEA Website for course fees)

Payment details

(Payment is required prior to course attendance)

☐ **EFT Details** Bank: CBA BSB: 062 203 Account: 001 757 58

☐ **Cheque** (payable to EEA Pty Ltd)

☐ **Credit Card**

☐ Visa ☐ Mastercard ☐ Bankcard ☐ Diners ☐ American Express

Card number

Expiry date

Cardholders's name

Cardholder's signature

Tax Invoice

A tax invoice will be sent approximately two weeks prior to the course

Address for invoice if different from the participant's address

Postal Address

Suburb/Town

State Postcode Country

How did you find out about us?

☐ EEA website ☐ Engineers Australia ☐ HR/Training Manager

☐ EEA email ☐ Manager ☐ Colleague

☐ Other _____

Cancellation and Transfer Conditions

An acknowledgement email is sent following your registration. A confirmation email is then sent closer to the course date. **A confirmation email must be received and payment made before attending a course.** Following registration, a substitute participant is welcome at anytime, **otherwise the following conditions apply:**

5 or less working days before a course

- cancellation - no refund of course fee
- transfer to another EEA course - admin fee of $198 (inc GST) is payable

6 or more working days before a course

- cancellation - refund of course fee less admin fee of $198 (inc GST)
- transfer to another EEA course - admin fee of $198 (inc GST) is payable

Personal extenuating circumstances such as illness or accidents will be sympathetically considered, but admin fee of $198 (inc GST) would still be payable. Cancellations or transfer must be in a writing by email, fax or letter. **Only one transfer is allowed per participant per course.** If EEA cancels a course due to insufficient registrations or other circumstances beyond its control, a full refund would be provided.

We invite you to contact us at:

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