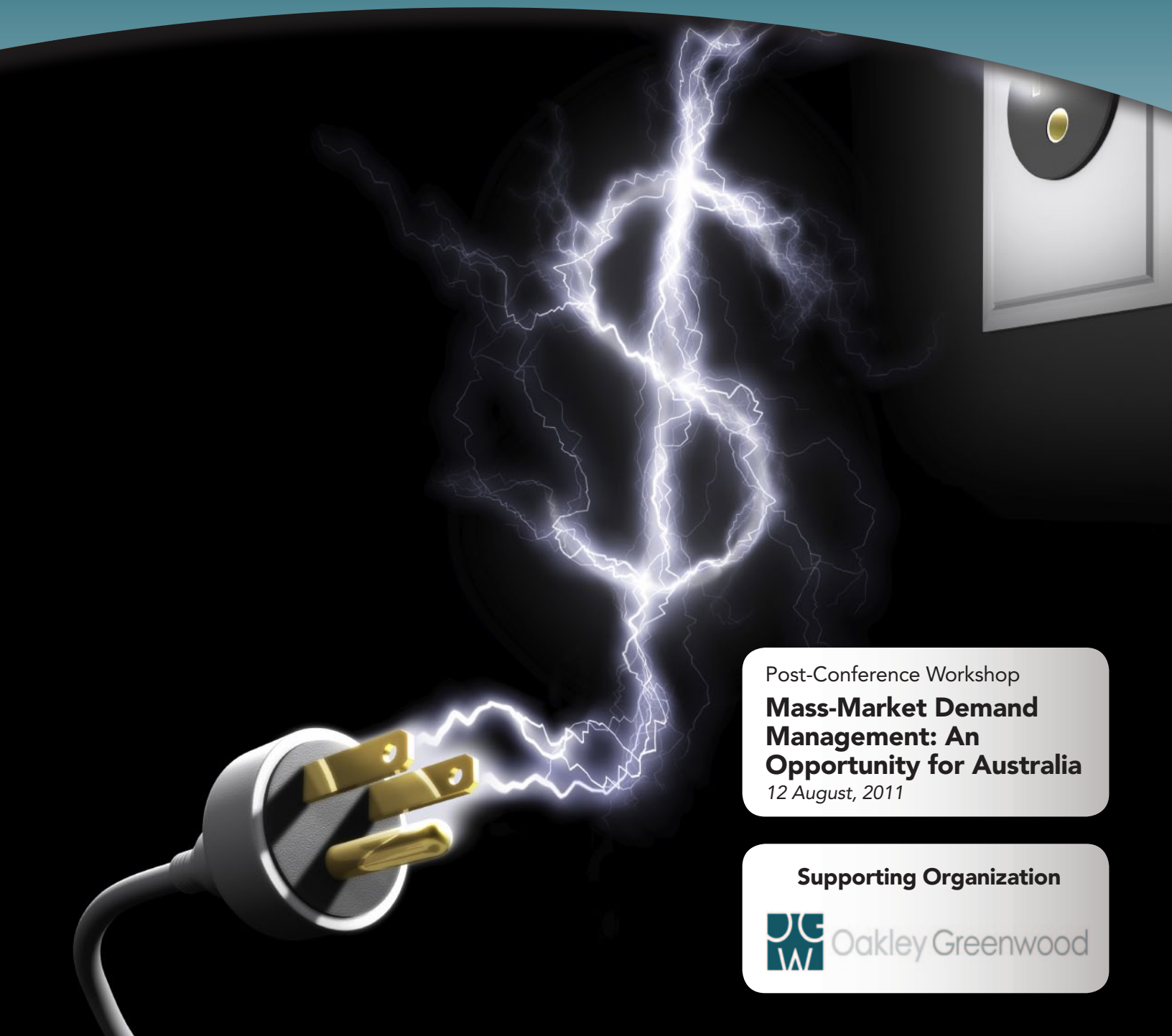
EUCI Presents a Conference on:

DEMAND MANAGEMENT IN AUSTRALIA: CREATING EFFECTIVE DSM THROUGH PRICING, POLICY, AND PROGRAMS

11-12 August, 2011 • Sydney, Australia



Post-Conference Workshop

Mass-Market Demand Management: An Opportunity for Australia

12 August, 2011

Supporting Organization

Oakley Greenwood

OVERVIEW

Demand management poses significant challenges in Australia. Peak demand and falling load factors are substantial issues for the National Energy Market (NEM) and require large investment in what is very low duty-cycle infrastructure in both the generation and networks sectors. In addition, rising electricity prices and smart technologies are creating additional pressure to implement effective DSM programs. In fact, the AEMC has identified increasing demand response as one of its top three strategic priorities for further development of the NEM.

Currently, the NEM has between 200 and 600 MW of demand response, according to a recent AEMO estimate. In comparison, the Western Energy Market (WEM) has about 450 MW of demand response – approximately 12 percent of peak demand – and it is still growing. The primary difference is that retailers in the WEM are required to show contracts – which can include contracts for demand management – for sufficient capacity to meet the aggregate load of their customers on a peak day, and there is a posted penalty price for falling short.

At EUCI's Demand Management in Australia: Creating Effective DSM through Pricing, Policy, and Programs conference, you will hear from power companies and industry experts whose responsibilities correspond to energy and facility management, sustainability, demand response, energy efficiency, research, and technology innovation.

Specific issues that will be covered include:

- What do customers want?
- What are the key ingredients for a successful DSM program?
- What could the new smart technologies make possible in pricing, automated control, and other forms of demand response?
- What can be done to increase the role of demand response in the NEM, what role can the various actors play, and what (if any) changes to the rules, regulations, or commercial and institutional arrangements within the NEM are needed to unlock this potential?

The goal of this program is to share cutting-edge ideas, potential solutions, and challenges regarding this valuable resource for the NEM.

LEARNING OUTCOMES

- Identify gaps in our understanding of both current practice and potential for demand management in Australia
- Evaluate who is buying demand response, who's providing it, and how it is being used
- Discuss why the government needs to ensure future home and building designs go beyond the current Australian "Start Rating" system to include considerations for low cost to operate innovations
- Understand how DSM is assessed as an integral part of Ausgrid's network planning process
- Recognise the electricity retailer's perspective on the potential value of demand response and describe the actions being taken to deploy the demand response of their customers
- Discuss the large customer's perspective on demand response
- Understand the real-world conditions that determine the ability of Australia's distribution networks to integrate renewable embedded generation and what that implies for impacts and benefits of these alternative generation systems
- Explain the benefits of air conditioning load management with particular regard to how they can be obtained from the ductless split-system units that are prevalent in Australia
- Discuss the results of a series of pricing trials that have been undertaken to ascertain customers' demand responsiveness to a range of price signals
- Identify how Energex is meeting the challenges of increasing peak demand and deteriorating load factor
- Demonstrate the potentially large DSM opportunity of leveraging smart meter and home area network (HAN) technology
- Describe the role networks can play in activating demand response
- Identify and discuss opportunities and barriers to DM for both rural and metropolitan distribution network service providers (DNSPs)
- Explain why there should be no need for explicit incentives from regulators, as participation in demand-side programs should be a "no-brainer," and some reasons why the NEM isn't working this way and how it could be fixed

PROGRAM AGENDA

THURSDAY, 11 AUGUST, 2011

8:30 – 9:00 a.m. **Registration and Continental Breakfast**

9:00 – 9:15 a.m. **Welcome and Opening Remarks by the Chair**
– Roger Rognli, Program Manager Demand Response, Cooper Power Systems, Energy Automation Solutions Group

SESSION 1: DM IN AUSTRALIA – PROJECTS AND STATUS

9:15 – 9:50 a.m. **Determining Demand Management in Australia**
In this session, we explore results from the first systematic survey on electricity network demand management in Australia. This new survey completed by the Institute for Sustainable Futures for the Australian Alliance to Save Energy underlines the importance of collecting available data and identifying gaps in our understanding of both current practice and potential for demand management in Australia.
– Chris Dunstan, Research Director, and Nicole Ghiotto, Research Consultant, Institute for Sustainable Futures

9:50 – 10:25 a.m. **Nega-Watt Products in the Nega-NEM**
Energy Response is a DSR aggregator that develops DSR programs in the NEM, WA, and New Zealand electricity markets. The aggregator has learned which of the disaggregated utilities in the NEM value DSR and how to package aggregated DSR into commercial products.

This session will explore who is buying DR, who's providing it, and how it is being used. It will focus on aggregated DSR as four generic products and where they have value in the NEM:

- Price response
- Network support
- Reserve capacity
- Frequency response

– Michael Zammit, Managing Director, Energy Response

10:25 – 11:00 a.m. **Energy Efficiency in Remote Indigenous Communities**
In this session, Horizon Power will discuss its Energy Efficiency Engagement Program to assist the community in achieving reduction in their personal energy consumption. Horizon Power's education program focuses on household energy use but is easily adapted to small business enterprises. The program enables residents to understand their energy use in heating, cooling, cooking, lighting, and appliances. This helps residents make informed decisions on how to best use and purchase energy-efficient appliances.

In addition, Horizon will discuss why the government needs to ensure future home and building designs go beyond the current Australian "Start Rating" system to include considerations for low cost to operate innovation to the homes or buildings they control in remote Aboriginal communities.
– Fleur Crowe, Sustainable Development Coordinator, Horizon Power Corp.

11:00 – 11:25 a.m. **Morning Tea**

PROGRAM AGENDA

THURSDAY, 11 AUGUST, 2011 (CONTINUED)

11:25 a.m. – 12:00 p.m. Diet, Exercise, and DM – Capturing Value and Turning Promise into Performance

Expectations for DM have regularly outstripped results – how do we bridge the gap? In this session, Ausgrid will discuss lessons from its extensive experience in energy efficiency and demand management programs, working with both end users and regulatory incentive frameworks. Issues that will be covered include how to manage expectations, opportunities in prices, opportunities in smart technologies, non-priced barriers, and overcoming "market failure."
– Robert Smith, Manager, Demand Management Policy and Strategy, Operational Technology and Innovation, Ausgrid

12:00 – 12:35 p.m. An Electricity Retailer's Perspective

This presentation will describe the various ways in which demand response can provide value to an electricity retailer, including how DR compares in cost, effort, and value to financial instruments. It will also explore the specific challenges that an electricity retailer faces in both setting up a demand response program and achieving sufficient DR volume to cost-justify the effort and expense involved, and why ERM Power has decided it is worth a try.
– Chris Parratt, National Business Development Manager, ERM Power

12:35 – 1:25 p.m. Group Luncheon

1:25 – 2:10 p.m. Perspective of a Large Customer Providing Demand Response

This presentation will explore the experience of a large customer that has provided demand response. It will include consideration of a) the factors that motivated them to provide demand response in the first instance, b) what was the nature of the demand response they did provide, c) their experience in providing demand response (what went well, what didn't, and how that was or is being improved), and d) what changes in the rules, regulation, or market or commercial/institutional arrangements would allow them to provide more demand response.
– Large end-use customer invited

SESSION 2: PROSPECTS AND TECHNOLOGY

2:10 – 2:45 p.m. Using Real World Data to Identify Unrecognised Issues

The Energy Networks Association (ENA) has completed a year-long project, initiated in partnership with the CSIRO, which focused on understanding the impacts and benefits of embedded generation (EG) for Australian electricity distribution networks. The comprehensive study investigated all types of EG from domestic solar photovoltaic cells to larger capacity units. This provided the industry with an assessment of the effect of EG on the grid under a wide range of circumstances. Following the significant growth in demand for EG, particularly from renewable sources, key industry stakeholders needed assistance in planning and designing their grids to cope with the uptake of renewable EG technology. This is the first comprehensive analysis of scenarios specific to Australian network conditions with real-world data used to identify issues that have been previously unrecognised. Key insights for industry, regulatory, and government stakeholders will be presented.
– Geoff James, Principal Research Scientist, CSIRO Energy

PROGRAM AGENDA

THURSDAY, 11 AUGUST, 2011 (CONTINUED)

2:45 – 3:20 p.m. **Mitigating Summer Peak Loads in a Cost-Beneficial Manner: A Moderated Discussion on Air Conditioning Load Management**

Air conditioning load is a major contributor to growing summer peak loads in Australia. Following a review of the various air conditioning technologies currently in use in Australia, this session will engage attendees in a discussion of the need for and benefits of air conditioning load management and, specifically, the problems presented by the prevalence of ductless split-system air conditioning units. The goal of the session is to gauge the audience's priorities for certain technical features that a load management technology for ductless spilt-system air conditioning could have. The speaker will present an "illustrative" technical solution along with possible features and benefits (utility and customer) and then solicit feedback from those in attendance. This session will provide attendees an opportunity to help direct future technology development aimed at helping mitigate growing Australian summer peak loads in a cost-beneficial manner.
– Roger Rognli, Program Manager Demand Response, Cooper Power Systems, Energy Automation Solutions Group

3:20 – 3:55 p.m. **Meeting the Challenges of Increasing Peak Demand and Deteriorating Load Factor**

Distribution businesses are faced with the challenge of increasing peak demand and deteriorating load factor. This presentation will discuss the programs that Energex is currently undertaking within its energy conservation and demand management (ECDM) program to address these challenges. The company is running a number of concurrent programs with both residential and commercial and industrial customers, which are delivering both energy and peak demand savings. This session will also discuss the results of a series of pricing trials that have been undertaken to ascertain customer's demand responsiveness to a range of signals.
– Peter Casey, Energy Conservation and Demand Management Strategy and Development Manager, Energex

3:55 – 4:20 p.m. **Networking Break**

4:20 – 4:55 p.m. **HAN-Enabled DR**

Very large numbers of smart meters are being rolled out to residential and small business customers of Utilities in North America, Europe, and Australia. Not only do smart meters enable the remote collection of detailed energy consumption data, but they also provide the ability to control loads either directly or through an interface to a home area network (HAN). This session will discuss the potentially large DSM opportunity of leveraging smart meter and HAN technology. At one level, using interval energy data enables offering customers time-varying tariffs, including critical peak pricing tariffs, which can elicit various levels of demand response. Direct load control of larger energy-consuming devices such as air conditioners, pool pumps, and electric vehicles can enable large percentage reductions in demand at peak times. Through the HAN, there is also potential to not only provide customers with instantaneous consumption information through in-home displays and similar devices, but also to enable demand reduction from smart appliances and network optimisation through control of micro generation (e.g., solar PV) and energy storage devices. However, in the Australian context, some of the potential benefits are limited by market rules, regulations, and some current commercial arrangements. Consideration will therefore have to be given to dealing with these limiting factors to enable the realisation of the large benefits that smart metering and HAN technologies can bring.
– Phil Perry, Director, Impaq Consulting

4:55 p.m. **Closing Remarks, Day 1 Ends**

5:00 – 6:00 p.m. **Networking Reception**

PROGRAM AGENDA

FRIDAY, 12 AUGUST, 2011

8:00 – 8:30 a.m. **Continental Breakfast**

8:30 – 8:45 a.m. **Second Day Opening Remarks by the Chair**
– Lance Hoch, Director, Oakley Greenwood Pty Ltd

SESSION 3: BUILDING THE CAPABILITY AND CAPTURING THE VALUE OF FLEXIBLE DEMAND

8:45 – 9:20 a.m. **The Role Networks Can Play in Activating Demand Response**
In this session, the Energy Networks Association (ENA) will explore how networks could play an important role in activating demand response and the benefits this could provide to the transmission and distribution businesses, customers, and the wholesale market. It will also discuss whether and what changes in rules, regulations, and/or commercial and institutional arrangements would be required for the distribution businesses to take up this role.
– Tanya Barden, Director, Smart Networks Policy, Energy Networks Association

9:20 – 9:55 a.m. **Opportunities and Barriers to DM for a Rural DNSP**
Utilities with rural distribution have unique demand management challenges but also unique opportunities. The same low density that makes serving these customers costly also results in situations where quite modest demand reductions can defer significant capital requirements, which arise when lines that serve very low energy densities have to be augmented. It also makes it very logical to think of the electricity distribution company taking on the role of full-service energy provider. In this session, Ergon Energy shares some of its strategies in implementing effective demand management in its territory.
– Tony Pfeiffer, Group Manager Alternative Energy Solutions, Ergon Energy

9:55 – 10:30 a.m. **Opportunities and Barriers for Demand Management for a Metropolitan DNSP**
Ausgrid operates in one of the most urban territories in Australia. Many opportunities exist for shaving peak demand from its system. But with a more concentrated customer base comes challenges as well. In this session, the utility shares both opportunities and barriers for improving demand management in its region.
– Catherine O'Neill, Executive Manager Regulation and Pricing, Ausgrid

10:30 – 10:55 a.m. **Morning Tea**

10:55 – 11:30 a.m. **Making Best Use of Demand-Side Capabilities**
This session will explore, among other things, the role aggregators can play in delivering more demand response in the NEM. The NEM was designed as an "energy only" market, which has a certain elegance that economists appreciate. In reality, however, it's not quite that pure: there's a range of distortions and baked-in assumptions. These may have seemed innocuous at the time they were established, but they have had the unintended consequence of skewing activity to the supply side by stifling the demand side.

Done right, demand-side response can be very valuable. There should be no need for explicit incentives from regulators, as participation in demand-side programs should be a "no brainer." This talk looks at some reasons why the NEM isn't working this way, and how it could be fixed.
– Dr. Paul Troughton, Head of Technology, Energy Response Pty Ltd

11:30 a.m. – 12:00 p.m. Panel Discussion

12:00 p.m. **Closing Remarks and Conference Adjourns**

MASS-MARKET DEMAND MANAGEMENT: AN OPPORTUNITY FOR AUSTRALIA

FRIDAY, 12 AUGUST, 2011

Registration: 12:00 – 12:30 p.m.
Workshop Timing: 1:00 – 4:30 p.m.

OVERVIEW

This workshop on mass-market demand management or demand response (DR) will cover an array of significant topics germane to the Australian circumstances and its institutional setting within the electricity industry.

The value of mass-market DR is covered from both the traditional and "deregulated" perspectives. Mass-market DR relies on the voluntary participation of residential and small commercial customers. The workshop will address why customers participate, how many can be expected to participate, and the history, current state, and possible future states of DR in North America and Australia.

A major contributor to peak demand and the growth in peak demand in Australia is air conditioning. The types and saturations of the various AC technologies will be reviewed and the Australian DR potential from AC load management discussed as well as the realistically achievable DR.

Centralised control of air conditioning is implemented in many ways. These control strategies and technologies will be reviewed covering the traditional direct load control methods as well as those evolving for the "smart grid" and those using "two-way" communications media. Finally, control technologies and strategies are presented that are designed for "split-system" and "wall-hung" ACs and also window air conditioners.

AGENDA

Introduction

- The traditional view
  - Avoided capacity — generation, transmission, distribution
  - Enhanced system reliability; reduced LOLP; less required reserves
  - Lower customer bills in the long-term
- DR in "organised" markets — like the NEM
  - Capacity markets?
    - Forward or spot
  - Energy markets?
    - Day-ahead
    - Hour-ahead ("real-time")
  - Ancillary services markets?
    - Frequency/voltage management
    - Spinning /non-spinning reserves
    - Balancing services

SPONSORSHIP OPPORTUNITIES

Do you want to drive new business through this event's powerful audience?

Becoming a sponsor or exhibitor is an excellent opportunity to raise your profile before a manageably-sized group of executives who make the key purchasing decisions for their businesses. There are a wide range of sponsorship opportunities available that can be customized to fit your budget and marketing objectives, including:

- Platinum, gold, or VIP sponsor
- Workshop sponsor
- Cocktail reception host
- Lanyard sponsor
- Networking break host
- Luncheon host
- Tabletop exhibit
- Breakfast host

Custom sponsorship opportunities are also available. Please contact Raj Mrig at 720-988-1225 or rmrig@euci.com for more information.

AGENDA (CONTINUED)

Mass-Market Customers: Why Participate?

- Incentives
- No significant loss in comfort or convenience
- Help control rising electric rates
- Help avoid blackouts and voltage reductions
- DR is clean, green, and the "right thing to do"

Mass-Market DR in North America and Australia

- History
- Current state
- Possible future

Air Conditioning in Australia

- Types of ACs
- Saturation of ACs
- AC DR potential
- Realistically achievable DR

Air Conditioning Control Technologies

- Traditional technologies
- Switches and thermostats
- Cycling and set-back strategies
- Advanced features
- Communications media
- PLC, VHF, 900 Mhz, RDS
- Evolving technologies
- Smart grids
- HANs and HEMs
- Thermostats and IHDs
- Technology-enabled dynamic pricing
- Two-way communications
- Media/protocols
- ZigBee, WiFi, Z-Wave, IP, SEP1.1 (Higher?), PLC
- Controlling AC in Australia
- Controlling "ducted" central AC
- Spit-system AC controller
- Window AC control

INSTRUCTOR

Roger Rognli, Program Manager, Cooper Power System

In his role as program manager, Roger works with some of the largest utilities in North America, including Baltimore Gas and Electric (BG&E), Duke Energy, Pacific Gas and Electric (PG&E), and Xcel Energy (XE), as well as many cooperatives, municipals, and hydros in Ontario, Canada, helping them to start-up, restart, or tune-up their demand response programs. Prior to his work at Cooper, Roger managed a utility program that controlled upwards of 300 MW both summer and winter, in a 2000 MW utility, making load management the utility's second largest source of capacity. Roger holds two patents in the field of demand response, with five more patents pending.

PROCEEDINGS

A copy of the conference proceedings will be distributed to attendees at the event. If you are unable to attend or would like to purchase additional copies, flash drives are available two weeks after the conference is complete. The cost per flash drive is $395 (add $50 for international shipments). Flash drives include visual presentations only. Upon receipt of order and payment, the flash drive will be shipped to you.

NOTE: All presentation flash drive sales are final and are non-refundable.

EVENT LOCATION

A room block has been reserved at the xxx for the nights of 10-11 August, 2011. Room rates are $xxx plus applicable tax. Call xxx-xxx-xxx for reservations and mention the EUCI course to get the group rate. Make your reservations prior to xxx. There are a limited number of rooms available at the group rate. **Please make your reservations early.**

REGISTRATION INFORMATION

REMEMBER, EVERY FOURTH REGISTRANT IS FREE
For instant registration, call 303-770-8800 or fax the registration form to 303-741-0849.

Register Three, Send Fourth Free!
Any organization wishing to send multiple attendees to this course may send one FREE for every three delegates registered. Please note that all registrations must be made at the same time to qualify.

All cancellations received on or before July 8, 2011 will be subject to a AUD $195 processing fee. Written cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event or publication. This credit will be good for six months. In case of event cancellation, Electric Utility Consultants' liability is limited to refund of the event registration fee only. For more information regarding administrative policies such as complaints and refunds, please contact our offices at 303-770-8800.

EUCI reserves the right to alter this program without prior notice.

MAIL DIRECTLY TO:
Electric Utility Consultants, Inc. (EUCI)
5555 Preserve Drive
Greenwood Village, CO 80121

FAX TO:
+1 303-741-0849

PHONE:
+1 303-770-8800

ONLINE:
www.euci.com

NOTE: ALL PRICES ON THIS PAGE ARE GIVEN IN AUSTRALIAN DOLLARS.

PLEASE REGISTER THE FOLLOWING

☐ Demand Management in Australia: Creating Effective DSM Through Pricing, Policy, and Programs, 11-12 August, 2011: $1695
Early-bird rate on or before July 8, 2011: $1495

☐ Demand Management in Australia conference AND post-conference workshop, 11-12 August, 2011: $2095
Early-bird rate on or before July 8, 2011: $1895

☐ I'm sorry I cannot attend, but please send me the conference proceedings for $395. (Please add $50 for international shipping)

ENERGIZE WEEKLY
EUCI's *Energize Weekly* e-mail newsletter compiles and reports on the latest news and trends in the energy industry. Newsletter recipients also receive a different, complimentary conference presentation every week on a relevant industry topic. The presentations are selected from a massive library of more than 1,000 current presentations that EUCI has gathered during its 24 years organizing conferences.

☐ **Sign me up for *Energize Weekly***

How did you hear about this event? (direct e-mail, colleague, speaker(s), etc.) _____

Name _____ Job Title _____

Name Preferred for Badge _____ E-Mail _____

Company _____ Telephone _____

Address _____ City _____ State _____ Zip _____

☐ Check here if you have any dietary or accessibility needs. We will contact you for more details.

PAYMENT METHOD

Please charge my credit card: ☐ Visa ☐ MC ☐ AMEX ☐ Discover Security Code _____

Visa and MC cards have a 3 digit code on the signature panel on the back of the card, following the account number. American Express cards have a 4 digit code on the front of the card, above the card number.

Name on Card _____ Signature _____

Account Number _____ Exp. Date _____

Card Holder Phone Number _____

Billing Address _____ Billing Zip Code _____

OR enclosed is a check for $ _____ to cover _____ registrations.

W1006