

FORECASTING FUNDAMENTALS FOR UTILITY/POWER INDUSTRY PROFESSIONALS

February 7 – 8, 2017

**New Orleans Downtown Marriott at the Convention Center
New Orleans, LA**



EUCI is authorized
by IACET to offer
1.0 CEUs for the
course

OVERVIEW

Utilities and other power organizations nowadays are caught in a crossfire of patterns and trends that often run counter to what seemed indisputable fact just a few years ago. Other perplexing conditions are present, also, that seem difficult to gauge – changes in the mix of supply and demand side resources, the impact of technology on the grid and access it allows to system and customer data, dramatic shifts in commodity prices, the emergence of intermittent and variable resources, flat to declining load growth, and so on.

The problem is largely due to the inaccurate, unexplainable and indefensible forecasts generated from the forecasting practices in the pre-computer era. Trend analysis and other traditional methodologies cannot properly capture these unstable conditions. Thankfully, though, new forecasting methods have been developed that take account of behavioral and technological changes affecting electricity use.

This course offers an introduction to forecasting principles, practices, and their applications in the utility industry, such as demand forecasting, renewable generation forecasting, and price forecasting – the essential tools for making sense of today's power environment and delivering proper guidance for industry decision-makers. It will be loaded with examples and illustrations that translate these methodologies into the resulting utility practices.

LEARNING OUTCOMES

- Examine and review the concept of predictability
- Recognize how to describe a forecasting process using formal and rigorous terminologies
- Identify the basic forecasting concepts, such as signal and noise
- Recognize the practical value of forecast combination
- Apply diffusion of innovation principle in long term forecasting
- Discuss the do's and don'ts in judgmental forecasting
- Relate how to evaluate forecasts and forecasting systems
- Distinguish the pros and cons of commonly used univariate models, multivariate models and machine learning techniques
- Define the general methodologies for short-term and long-term electric load forecasting, gas demand forecasting, wind and solar power forecasting, and gas and electricity price forecasting

INSTRUCTOR



Tao Hong

Director of BigDEAL (Big Data Energy Analytics Laboratory), University of North Carolina at Charlotte and Chief Data Scientist, Hong Analytics

Dr. Tao Hong is the Director of BigDEAL (Big Data Energy Analytics Laboratory) at University of North Carolina at Charlotte and Chief Data Scientist of Hong Analytics. He has been providing training and consulting services to more than 100 organizations in the energy industry worldwide. He is the Founding Chair of IEEE Working Group on Energy Forecasting, General Chair of Global Energy Forecasting Competition, lead author of the online book *Electric Load Forecasting: Fundamentals and Best Practices*, and author of the blog *Energy Forecasting*. Dr. Hong received his B.Eng. in Automation from Tsinghua University in Beijing and his PhD with co-majors in Operations Research and Electrical Engineering from North Carolina State University.

AGENDA

TUESDAY, FEBRUARY 7, 2017

8:00 – 8:30 am Registration and Continental Breakfast

8:30 – 10:15 am Forecasting Principles

- Predictable or not?
- Forecasting terminologies
- Signal, noise and tradeoff
- Forecast combination
- Diffusion of innovation
- Judgmental forecasting

10:15 – 10:30 am Morning Break

10:30 am – 12:00 pm Forecasting Practices

- Forecast evaluation
- Univariate models
- Multivariate models
- Machine learning techniques

12:00 – 1:00 pm Group Luncheon

1:00 – 2:45 pm Electricity Demand Forecasting

- Driving factors
- Short-term load forecasting
- Long-term load forecasting

2:45 – 3:15 pm Networking Break

3:15 – 4:00 pm Gas Demand Forecasting

- Driving factors
- Methodologies

4:00 – 4:45 pm Demonstration

WEDNESDAY, FEBRUARY 8, 2017

8:00 – 8:30 am Continental Breakfast

8:30 – 10:00 am Renewable Generation Forecasting

- Wind power forecasting
- Solar power forecasting

10:00 – 10:15 am Morning Break

10:15 – 11:30 am Price Forecasting

- Gas price forecasting
- Electricity price forecasting

11:30 – 11:45 am Summary

11:45 am Adjournment

“The course content is utility related and practical, and is easily transferrable to everyday working practices.”

T&D Manager, NEVLEC

“All forecasts are wrong, but this class helped us understand how to improve our practices.”

Power Supply Economist, PLM Inc

“I was very pleased with the information conveyed in this course. The multitude of data that can improve a load forecast and how to implement them was eye-opening.”

Sr. Energy Delivery System Planning, Alliant Energy

“Dr. Tao’s knowledge on the subject, along with his ability to divulge and present the material in an understanding format makes the course invaluable to forecasters.”

Manager of System Planning & Standards, PRECoop

REQUIREMENTS FOR SUCCESSFUL COMPLETION OF PROGRAM

Participants must sign in/out each day and be in attendance for the entirety of the course to be eligible for continuing education credit.

INSTRUCTIONAL METHODS

PowerPoint presentations, case studies, and workshop exercises will be used in this program.

PROCEEDINGS

The proceedings of the course will be published, and one copy will be distributed to each registrant at the course.

EVENT LOCATION

A room block has been reserved at the New Orleans Downtown Marriott at the Convention Center, 859 Convention Center Blvd., New Orleans, LA 70130, for the nights of February 6-7, 2017. Room rates are \$189, plus applicable tax. Call **1-504-613-2888** for reservations and mention the EUCI event to get the group rate. The cutoff date to receive the group rate is January 20, 2017 but as there are a limited number of rooms available at this rate, the room block may close sooner. Please make your reservations early.

IACET CREDITS



EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the AN-SI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the AN-SI/IACET Standard.

EUCI is authorized by IACET to offer 1.0 CEUs for the course.

REGISTER 3, SEND THE 4TH FREE

Any organization wishing to send multiple attendees to these courses may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.

REGISTRATION INFORMATION

EVENT LOCATION

Mail Directly To:

Electric Utility Consultants, Inc. (EUCI)
4601 DTC Blvd., Ste. 800
Denver, CO 80237
OR, scan and email to: courses@euci.com

WWW.EUCI.COM**p: 303-770-8800****f: 303-741-0849**

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PLEASE REGISTER

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POWER INDUSTRY PROFESSIONALS COURSE:**
FEBRUARY 7 – 8, 2017 US \$1495,
Early bird on or before January 20, 2017: US \$1295

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 course 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 29 years organizing courses.

Sign me up for Energize Weekly

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

Print Name

Job Title

Company

What name do you prefer on your name badge?

Address

City

State/Province

Zip/Postal Code

Country

Phone

Email

List any dietary or accessibility needs here

CREDIT CARD INFORMATION

Name on Card

Account Number

Billing Address

Billing City

Billing State

Billing Zip Code/Postal Code

Exp. Date

Security Code (last 3 digits on the back of Visa and MC or 4 digits on front of AmEx)

OR Enclosed is a check for \$ _____ to cover _____ registrations.

Substitutions & Cancellations

Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before January 6, 2017 in order to be refunded and will be subject to a US \$195.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of course cancellation, EUCI's 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.

