

The Wisconsin Public Utility Institute's

Energy Utility Basics Course

September 26-30, 2016 • Madison, Wisconsin



For more information on the course,
including fees and lodging info,
please visit our website:
wpui.wisc.edu



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Contact Cara Lee Mahany Braithwait, Director | samb@wpui.org | 608-890-1815

12.5 CLEs

The Pyle Center, 702 Langdon St., Rm 235, located on Lake Mendota

Draft Agenda

September 26, Monday

Electricity: Industry Structure

Pyle Center, Room 235

Time	Session Title	Speaker (s)
7:30-8:00	Welcome Coffee/Tea	
7:30-8:00	Registration	
8:00-8:20	Introduction	Cara Lee Mahany Braithwait <i>Wisconsin Public Utility Institute</i>
8:20-9:45	Why a regulated monopoly? Who's regulated, why and how: The Federal and State Perspective 1600's to 1985 <ul style="list-style-type: none"> • Why a monopoly • What is a public interest • The role of federal level commissions • The relationship between the utility and the regulator 	Enrique Bacalao <i>Public Service Commission of Wisconsin</i>
9:45-10:00	Break	
10:00-11:15	Utility Regulation from 1985 to Today <ul style="list-style-type: none"> • Drivers of Restructuring • Wholesale Markets and Open Access • Renewables and Energy Efficiency • Pricing and Rate Changes • Current Trends 	Nate Zolik <i>Godfrey and Khan</i>
11:15-11:30	Break	
11:30-12:30	The Public Service Commission-Roles and Rules, Balance of Power <ul style="list-style-type: none"> • PSC Authority and Jurisdiction • Organizational Structure of the PSC • A Case: Start to Finish 	Cynthia Smith <i>Public Service Commission of Wisconsin</i>
12:30-1:30	Lunch	

Time	Session Title	Speaker (s)
1:30 – 3:00	Utility Company Models-Presentations and Panel Discussion <ul style="list-style-type: none"> Utility Company Models-Presentations and Panel Discussion Why was this form of a public service company formed What do you own and operate-- How are you regulated or managed--(show differences for transmission, generation etc.) Who are your stakeholders (stockholders for IOUs) How do you secure power How do you sell power (retail only, wholesale customers etc) What other services do you offer customers Who are your customers 	Moderator: Cara Lee Mahany Braithwait <i>Wisconsin Public Utility Institute</i> Brian Rude <i>Dairyland Power Cooperative</i> Andy Onesti <i>Manitowoc Public Utilities</i>
3:00 – 3:15	Break	
3:15 – 4:00	The Independent System Operator <ul style="list-style-type: none"> History Responsibilities Areas of influence 	David Boyd <i>MISO Energy</i>
4:00 – 4:15	Break	
4:15– 5:15	Transmission-The Overlooked Connection Until 1970 <ul style="list-style-type: none"> History 1970 to date Order 2000 RTOs and then Repair Bill Order 890 The Underlying Driver for FERC FERC Order 1000 and then the Repair Bill 1000-A Right of First Refusal—Current Status 	Flora Flygt <i>Retired Utility Executive & Advisor</i>
5:15	Adjourn	

September 27, Tuesday
Electricity: Industry Operations
Pyle Center, Room 235

Time	Session Title	Speaker(s)
7:30-8:00	Welcome Coffee/Tea	
8:00-9:15	From Heat to Electricity-How we make Electricity in the U.S. <ul style="list-style-type: none"> How much energy do we use What is the difference between energy and power Creating electricity AC/DC—what does this mean? How does a generator make electricity Start-up Black starts Who uses what Cost of electricity 	Jake Blanchard <i>UW-Madison</i>
9:15-9:30	Break	
9:30-11:15	Field Identification Guide to the Electric Industry <ul style="list-style-type: none"> Recognizing a power line from a phone line Substations, boosters, inter-tie, DC lines Technical language used in the field Power flows Transmission basics Step-up & step-down Counterflows Curtailments Line losses Line loading Buses Basics of LMP Congestion 	Ken Copp <i>American Transmission Co.</i>
11:15-11:30	Break	
11:30-12:30	A Day in the Life of a Distribution Company <ul style="list-style-type: none"> The New Responsibility (Opportunity) Physical characteristics A typical day in 1990 A typical day in 2012 	Merlin Raab <i>Wisconsin Public Service Corporation/Integrus</i>
12:30-1:00	Break & pick up Lunch	

Time	Session Title	Speaker(s)
1:00-2:00	A Day in the Life of a Transmission Operator <ul style="list-style-type: none"> • What they do and why they do it • Scheduling • Forecasting • Selling into the market • Good days and bad days • Transmission investment decisions • Meeting renewable portfolio standards • Planning and cost allocation 	Mike Londo <i>American Transmission Co.</i>
2:00 – 2:45	Demo – What happens to carbon with different generation portfolios? Dealing with trade-offs and risks	Scott Patrick Williams <i>UW-Madison</i>
2:45 – 3:00	Pick up cookies & a beverage on the way out to the bus!	
3:00 – 3:15	Travel to Charter Street Heating and Cooling Plant	
3:15 – 4:30	Field Trip: Power Plant Tour	

September 28, Wednesday
Rate-making for Electric and Gas Companies
Pyle Center, Room 235

Time	Session Title	Speaker(s)
7:30-8:00	Welcome Coffee/Tea	
8:00-9:15	What drives utility stock prices? <ul style="list-style-type: none"> • How do investors value utility stock? • What is changing about the utility's business climate for earnings growth? • What are the implications of the changes on future stock value? • What are the value implications for utility investment in environmental infrastructure projects? 	Steve Kihm <i>Seventhwave</i>
9:15-9:30	Break	
9:30-10:45	Basics of Rate Setting <ul style="list-style-type: none"> • Cost of Service 	Bruce Chapman <i>CA Energy</i>
10:45-11:00	Break	
11:00-12:30	Basics of Rate Setting <ul style="list-style-type: none"> • Traditional Rate Design • Dynamic Pricing and Rate Efficiency • Niche Designs 	Bruce Chapman <i>CA Energy</i>
12:30-1:30	Lunch	
1:30-2:45	Basics of Rate Setting: Conclusion Challenge of Renewables Cost and Pricing	Bruce Chapman <i>CA Energy</i>
2:45-3:00	Break	
3:00-3:45	Strategies for Addressing Fixed Cost Recovery Issues	Dan Hansen <i>CA Energy</i>
3:45 – 4:00	Break	
4:00 – 4:45	One Utility's Response to Changing Customer Expectations	John Krueger <i>Madison Gas and Electric</i>
4:45	Adjourn	

September 29, Thursday
Electricity/Gas: Environmental Issues & Gas Markets
Pyle Center, Room 235

Time	Session Title	Speakers(s)
7:30 – 8:00	Welcome Coffee/Tea	
8:00 – 8:45	Nuclear Future—The Base Load of the Future?	Jake Blanchard <i>UW-Madison</i>
8:45 – 9:00	Break	

Time	Session Title	Speakers(s)
9:00–12:30	Work Done Without (or with a small) Carbon Footprint and Enabling Technologies— Moderator Rich Hackner, GDS Associates <ul style="list-style-type: none"> • Introduction to Renewables – Rich Hackner, GDS (9:00 – 9:20) • Efficiency: First, fix the holes in the bucket: Building Codes – Isaac Elnecave, MEEA (9:20 – 9:45) • Wind & Solar – Mitch Bradt, UW-Madison (9:45 – 10:30) • Break (10:30 – 10:45) • Biogas – Rebecca Larson, UW-Madison (10:45 – 11:20) • Storage – Bruce Beihoff, UW-Madison (11:20 – 11:50) • Supercritical CO₂ – Mark Anderson, UW-Madison (11:50 – 12:15) • Discussion (12:15 – 12:30) 	
12:30 – 1:30	Lunch	
1:30 – 3:30	Gas Markets How do traders evaluate options <ul style="list-style-type: none"> • What do customers pay for in a therm of gas—production, pipeline and distribution? • Driving Factors in Gas Prices. • General outlook for supply • How has the gas market changed in the past 4 years? • The role of storage. • New LNG markets? And its effect on domestic pricing • Short and long term pricing implications • Price outlook caveats 	Valerie Wood <i>Energy Solutions Inc.</i>
3:30 – 3:45	Break	
3:45-4:30	Legal Issues Facing the Utility Industry	Brian Potts <i>Perkins Coie</i>
4:30	Adjourn	

September 30, Friday
Gas: Status and Operations
Pyle Center, Room 235

Time	Session Title	Speaker
7:30-8:00	Welcome Coffee/Tea	
8:00 – 10:30	What Everyone Ought to Know About Gas <ul style="list-style-type: none"> • Where does natural gas come from • What is unconventional gas • How does the near term supply look • What about the future • Typical composition of a gas molecule • How natural gas is normally used-by time of day, coincident hourly demand, and month and by industry type • How efficient is natural gas as an energy source—and how clean is it compared to other fossil fuels • What is the natural gas production break-even point (Basin production cost per MMBtu) • Big picture of historical natural gas prices 	Alan Carroll <i>UW-Madison</i>
10:30 – 10:45	Break	
10:45 – 11:45	A Day in the Life of a Gas Company <ul style="list-style-type: none"> • Regulatory requirements • Trading • Forecasting • Dispatch 	Sarah Mead <i>WEC Energy Group</i>
12:00	Adjourn	