



Wisconsin Public Utility Institute

Rate Design and Regulation (2-1/2 days)

This will be a session that includes a full day of discussion with experts in topical fields of interest as nominated by the participants.

October 13-15, 2014

Pyle Center

Registration is \$650, includes all materials and all scheduled meals.

Hotel Rooms at the Lowell Center are available for a flat rate of \$109 on Lake Mendota.

Training facility is a half block down the street.

Monday October 13

8:30 – 9:30 *The Principles—everyone using the same vocabulary*

The Principles—everyone using the same vocabulary

Trainers: Bruce Chapman, Steve Braithwait CA Energy Consulting

The energy industry has moved from bundled to unbundled energy costs posing new problems and creating new opportunities for rate design. This first section will look at efficient rate design. We will present the economic principles for designing retail electricity rate structures that provide appropriate incentives for energy efficiency and variable rate design and discuss the resulting trade-offs.

- What should rates achieve?
- Examples of tradeoffs – e.g. revenue recovery vs. efficient pricing
- The role of price signals—to what prices do customers respond?
- Static (e.g. TOU) and dynamic (e.g. CPP, RTP) rate designs
- Customer, utility, stakeholder and commission risk

9:30 – 9:45 Break

9:45 – 12:30 *Cost Recovery Challenge*

Discussion leaders: Robert Camfield and Dan Hansen

- Institutional and statutory basis for determining utility prices.
 - Notion of a public utility – “for the convenience and necessity of the public”
 - Just and reasonable rates
 - Fair rate of return criteria
- Metrics for determining average cost-based prices
 - Revenue requirements
 - Fixed operating expenses and fuel charges
 - Rate base and return on capital
 - Rate of return, and operating income
 - Capital measurement
 - Original and current cost basis of resource value

- Cost of capital
 - Capital structure
 - Debt, equity, and zero cost components
 - Debt securitization
 - Regulatory capital structure: departures from the books
 - Double leverage: is it appropriate to apply?
 - Return on equity
 - Metrics and market models including DCF, Risk Premia, and CAPM
- Regulatory governance
 - Revenue sufficiency in the context of declining sales and rising costs
 - Cost trackers
 - Incentive properties
 - Performance-based regulation, and incentives to minimize costs
 - Principles for affiliate transactions
 - Managing the problem of competitive entry

12:30 – 1:30 Lunch

1:30 – 2:15 Recovery of Fixed Cost Options

Discussion Leader: Dan Hansen

2:30 – 4:30 Who causes a cost, and who should pay? It is not as easy as one might hope (Engineering and Economic principles of embedded cost of service).

Discussion Leader: Lawrence J. (Larry) Vogt is the Manager of Rates for Mississippi Power Company, noted author of Electricity Pricing –Engineering Principles and Methodologies (published 2014)

In this section we will review how costs are classified between *demand-related* and *customer-related* cost components. MDS is key to determining the monthly fixed costs of providing basic electric service. It provides a cost justification basis for the *Customer Charge* portion of the rate structure.

- Transformers
- Meters
- Sub-stations
- Whose fault is this cost (understanding customer and line faults)

4:30 Propose Questions for Wednesday

Tuesday October 14

8:30 Pricing of Renewable Products—Discussion Leader, Bruce Chapman

- Pricing Renewables
- Securing supply: Feed-in tariffs and renewable portfolio standards—principles, intended and unintended outcomes

- Auction-type renewable energy purchases—e.g. LIPA/Austin Energy
- Securing supply from customers: net metering issues
- Selling to customers: green pricing and cost recovery
- Training Coordinator: Bruce Chapman, CA Energy Consulting and other speakers as appropriate

9:45 Wholesale Costing and Pricing of Electricity with Respect to Marginal cost rate making and revenue allocation—includes breaks and lunch

Discussion Leader: Laurence Kirsch and Robert Camfield

We will cover topics such as:

- Carrying Charges on capacity: financial basis of charges
- Marginal Generation Costs
- Marginal generation capacity and reserve costs
- Marginal generation energy costs
- Marginal Transmission Capacity Costs
- Marginal Distribution Costs
- Marginal distribution customer-related costs
- Marginal distribution capacity-(demand)-related costs
- Determine appropriate costing periods
- Attributing costs to costing periods
- Adjustment of marginal costs for losses
- Reconciling marginal cost-based rates with revenue
- Requirements

3:45 Understanding the Wholesale grid and Transmission Connection

Discussant: Chris DeMarco, UW Madison

Case Discussion: The Physics of Electricity (Grid and Distribution)—Loading and unloading the grid and local distribution systems. In this section we will gain an understanding of what is needed to keep a grid running efficiently and reliably.

- *Understanding LMPs: Price of electric power varies rapidly with time, updated every five minutes, and has the **POSSIBILITY** to vary radically by geographic location (where geography is associated with transmission grid connection points).*
- *How does the system deal with substantial variations in load due to renewable energy resource additions to the grid?*

Discussant: Chris DeMarco, UW Madison

Wednesday: Discussion Seminar: 8:30 - 3:30

We will address five issues of concern that are nominated by the attendees. Experts that can be available are:

1. Larry Vogt—Mississippi Power (Utility rate designer—engineering/economic perspective)
2. Chris DeMarco UW Madison (Transmission and distribution—physics and economics)
3. Dan Hansen CA Energy Consulting (CAEC) Rate Design
4. Robert Camfield—CAEC (capital valuation, regulatory economics, wholesale electricity markets)

5. Steve Braithwait—CAEC (Expert on load management issues and outcomes, forecasting, pricing and customer response)
6. Others as needed

Proposed Topic: Discussion of Minnesota's Value of Solar