



2009 WISCONSIN

Renewable Energy Summit

Renewables, Sustainability, Energy Efficiency,
Social Responsibility, and Green Energy Practices

Energy Efficiency

Session #5-1

DATE:

WEDNESDAY, MARCH 25, 2009

Breakout Session 5-1:

Environmental Makeover for Existing Buildings

Time:

1:30pm - 3:15pm

Moderator:

Chris Hackner, Focus on Energy

Session Presenters:

Energy Efficiency through Operations & Maintenance:

Matt Matenaer, Franklin Energy

Today's business climate begs for energy efficiency, but at the same time economics don't allow for large expenditures of capital that may improve efficiency. This discussion will deal specifically with no to low cost opportunities that exist to reduce energy consumption as well as improvement equipment operation. The presentation will breakdown energy usage within a building into distinct categories so the audience has a clear picture of what areas can and will be impacted through the detailed efforts. Attendees can expect to learn about opportunities for lighting, heating, cooling, ventilation, refrigeration, compressed air, building envelope, office equipment and plug loads.

Retro-Commissioning:

Eric Wall, Focus on Energy

Commercial buildings are made up of complex, highly interactive systems that depend on each other to perform efficiently. If even one of these systems fail to operate as intended, a building's overall performance can suffer.

Focus on Energy understands this concept and offers building owners a systematic process for evaluating a structure's major energy-consuming systems and identify-ing opportunities to optimize equipment operation – saving energy and money!

Retrocommissioning "tunes up" your existing building to improve its efficiency and operation. The process begins with a comprehensive energy evaluation, which brings a qualified consultant to your facility to thoroughly review its systems and controls:

- Building envelope (sealing, insulation, etc.)
- Heating, cooling and chiller systems
- Lighting systems, exit signs and occupancy sensors
- Water heaters
- Industrial pumps and fans
- Industry-specific technologies



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Studies have shown it to be a key energy management strategy, often resulting in energy savings of up to 20 percent without significant capital investment and providing payback in less than two years. Focus on Energy also offers financial incentives to help you cover up to 85 percent of the cost of the building evaluation and a portion of the costs of qualifying improvements and upgrades.

Eric Wall will explain the process and benefits of retrocommissioning, along with sample successes and lessons learned through the Focus on Energy Retrocommissioning (RCx) pilot program. Attendees will learn how the commissioning of large facilities can save up to 20% on energy costs. Attendees will also receive copies of the presentation and RCx program documentation will be made available.

Individual Energy Customer Forecasting

Steven Vitullo, Marquette University

We are currently conducting research to help a heating oil company better forecast when to send trucks to fill their customers' tanks. The more accurate the forecasts, the less chance their customers have of running out of heating oil. Additionally, we also are saving the company money by reducing the number of trucks that are necessary to fill customer tanks and reduce the environmental pollutants given off by the operation of these trucks. This talk is an overview of the research project we are conducting to help heating oil companies better forecast when to send trucks to fill customer tanks.

The GasDay Project at Marquette University

Ronald H. Brown, Marquette University

The primary deliverable of the GasDay Project at Marquette University to the energy industry is daily natural gas demand forecasts to local distribution companies. Our models are used daily across the country to forecast about 20% of the nation's residential, commercial, and industrial demand. Better forecasts save rate payers \$10 of millions/year and reduces thousands of tons of CO2 emissions. The research at Marquette University is performed primarily by students. More than 130 graduate and undergraduate students from four colleges have participated in the project. This talk is an overview of the project and a discussion of the opportunities for students and industry.

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Presenter Biographies:

Eric Wall

Eric Wall has Bachelor's Degree in Mechanical Engineering from the University of Wisconsin-Milwaukee. He is a Certified Energy Manager and a Qualified Commissioning Professional. Eric is the manager for the Focus on Energy Retrocommissioning Program as well as leading the Large Commercial Building Initiative. Eric works with industry professionals, buildings owners and operators to spread the best practice of existing building commissioning throughout the state of Wisconsin.

Ronald H. Brown

Ronald H. Brown, Ph.D., Associate Professor, has been on the faculty at Marquette University since 1985. He has been applying his research to the natural gas distribution and transmission industries. He founded the GasDay Project at Marquette University in 1993. The work of this project includes helping the natural gas industry forecast daily and hourly demand and demand on design day conditions. His models are used daily at utilities across the country to forecast about 20% of the nation's natural gas consumption.

Steven Vitullo

Steven Vitullo received the B.S. degree in electrical engineering from Rose-Hulman Institute of Technology, Terre Haute, IN, in 2004 and the M.S. degree in electrical and computer engineering from Marquette University, Milwaukee, WI, in 2007. He is currently working on a Ph.D. degree in electrical and computer engineering with research in computational modeling, data mining, statistical models, operations research, controls and power, and forecasting. He is applying his research to the natural gas and heating oil industries