



EUCI Presents a Web Conference on:

THE BIOMASS GASIFICATION OPTION FOR REPOWERING EXISTING COAL-FIRED BOILERS

March 17, 2010



12:00 – 1:30 PM Eastern Time



EUCI is authorized
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OVERVIEW

Many regions with limited solar and wind resources have recognized the value of biomass as a source of renewable generation and are building stand-alone Greenfield biomass power plants to generate power for their area. These projects do require large capital investments in the \$2500-\$4000 per kW of capacity range. The feed handling and preparation portion may be about 1/2 of this investment, with the power conversion side (boiler, turbine-generator, and interconnection) amounting to the remaining 1/2 of the capital investment.

Rather than building entirely new facilities, another option is to repower an existing coal-fired boiler for direct biomass combustion. This is significantly less expensive at closer to \$1500 per kW, however this operation is not simple. Long downtimes are typical while converting the boiler. In addition, the process can lead to increased potential for corrosion or de-rating of the asset.

New gasification-based repowering has the potential to eliminate these issues. This presentation will explore technical and economic issues to consider during the design and implementation of gasification based repowering projects, including potential impacts to plant performance and emissions.

WHO SHOULD ATTEND

- Renewable energy project developers
- Attorneys
- City, State, and Federal officials investigating renewable energy
- Directors of renewable development
- Environmental and technical consultants
- Finance and investment professionals
- Investors in repowering with renewable energy
- Maintenance engineers
- NGO's and green advocacy groups looking to foster renewable adoption
- Plant engineers
- Regulators, communications staff, and others involved with coal-fired power plant operations
- Siting and permitting attorneys
- Sustainable fuel and feedstock interests
- Utility executives with renewable energy responsibilities
- Utility fuel mix and RPS specialists
- Utility CFO's and financial strategists

LEARNING OUTCOMES

- Analyze and distinguish the various technologies employed in biomass gasification
- Examine and appraise potential project options for repowering, including technical and economic feasibility
- Classify and analyze suitable alternative biomass feedstocks
- Differentiate gasification technologies in terms of their characteristic core conversion approach, gas conditioning, and potential application
- Identify potential impacts of repowering on the boiler, auxiliaries, and emissions control. Identify probable air quality and permitting compliance issues

IACET



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As a result of their Authorized Provider membership status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standards.

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Requirements for completing webinar:

Participants must be logged in to the web conference for its entirety to receive continuing education credit

Methods of Instruction:

Web based PowerPoint presentation and on-line interactive question/answer session.

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AGENDA

Technical and Economic Issues Associated with Gasification-Based Repowering

- Gasification technologies
- Gasification-based repowering
- Suitable feedstock types
- Feedstock moisture effects
- Auxiliaries, non-labor O&M (consumables), side products (ash or char-ash)
- Gasification product gas clean up and conditioning
- Economics of biomass repowering
- CVEC gasifier discussion

Dr. T. J. Paskach, Manager of Business Development, Frontline BioEnergy

Biomass Fuel: Issues & Options

Resource Assessment Issues & Options

- Typical amounts of biomass available & appropriate for co-firing
- High level vs. detailed resource assessment approaches
- Shelf-life issues for resource assessments

Biomass Handling

- Manual/mobile equipment approach
- Automated fuel handling systems

Bill Johnson, Manager Biofuels Development, Alliant Energy

Technical Feasibility of Biomass Repowering: Boiler Impacts

- Characteristics of new versus original fuel
- Combustion and furnace impacts
- Convection pass impacts
- Impact on performance and capacity
- Auxiliary equipment impacts
- Path forward – is a de-rate necessary?

*John E. Monacelli, Manager, Engineering, and Director, Operational Excellence,
Babcock & Wilcox Power Generation Group, Inc.*

INSTRUCTORS

Dr. T. J. Paskach, Manager of Business Development, Frontline BioEnergy

At Frontline BioEnergy, T. J. is responsible for identifying application opportunities for Frontline's gasification technology and performing techno-economic evaluations of potential biomass energy projects.

Prior to joining Frontline, T. J. was a development engineer and technical advisor for UOP, Inc., a petrochemical and petroleum refining technology company based in Des Plaines, IL. At UOP Dr. Paskach worked in catalyst, process, and software development. He was the chief technical advisor on the first hydrocracking unit in India at Mangalore Refining and Petrochemicals, Ltd.

Dr. Paskach received his PhD in Chemical Engineering from Iowa State University in 2002. Dr. Paskach received the UOP Presidential Award for his work on the UOP Hydrocracking performance team in 1996. He received the Iowa State University Research Excellence Award for Chemical Engineering in 2002, and the Iowa State University Professional Progress in Engineering Award in 2005.

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INSTRUCTORS

Bill Johnson, Manager Biofuels Development, Alliant Energy

Bill is responsible for biofuel planning and development for the company's baseload power plants.

Prior to his current position, Bill was Manager of Agricultural Customer Services responsible for stray voltage, commodity and non-commodity sales, electrical wiring programs, rural safety, demand side management and agriculture renewable energy programs for Alliant Energy's 53,000 farm customers.

Before coming to Alliant Energy he was Dean of Agriculture and General Education at Blackhawk Technical College, Janesville, WI, where he also taught comparative anatomy & physiology.

Mr. Johnson is a graduate of Southern Illinois University and the UW of Wisconsin-Madison, with degrees in Animal Science and Reproductive Physiology-Endocrinology. He is published in several peer reviewed scientific journals.

John E. Monacelli, Manager, Engineering, and Director, Operational Excellence, Babcock & Wilcox Power Generation Group, Inc.

John has over 30 years of engineering, engineering management and change management experience within Babcock & Wilcox. John has broad engineering experience that covers utility boiler, industrial boiler and environmental technologies.

John earned a B.S. in Chemical Engineering from the State University of New York at Buffalo. He has also co-authored papers presented to EPRI, ICAC, TAPPI Engineering and International Chemical Recovery Conference. John has been awarded three U.S. patents with three additional applications. Mr. Monacelli has been an instructor for numerous B&W technical training seminars.

LOGGING IN TO THE WEB CONFERENCE

After registration, each registrant will receive a confirmation of payment or an invoice, depending on method of payment. Each registrant will also receive an e-mail with appropriate login information and more information regarding the event 24 hours prior to the start of the event. To log on, you will need a Windows PC with a broadband connection and audio system.

WHAT IS A SINGLE SITE CONNECTION?

A site connection allows a single connection to the web conference. That connection is open to any number of users in a collaborative setting. Because there are no travel expenses and only a single registration fee is required, each additional participant lowers the cost per participant significantly.

By purchasing a site connection, you can invite as many people as you would like to view and participate in the session from a single location. Set up the session in a conference room and project the presentation and chat on a large screen. You also have rights to distribute copies of the presentation materials to everyone involved. Please note that audio is received via the computer sound system and must be broadcast to your group.

If for any reason a relevant stakeholder cannot co-locate for the session, we encourage you to include that person by purchasing an additional connection at the reduced fee of \$195 per session. This will ensure that every member of a team receives the same relevant, timely information in the most efficient way.

If you have any technical or purchasing questions, please contact us at (303) 770.8800.

Start Time: 12:00 PM Eastern Time

United States Regional Start Times:

9:00 AM Pacific :: 10:00 AM Mountain :: 11:00 AM Central :: 12:00 PM Eastern

Use the time zone converter (<http://www.timezoneconverter.com/cgi-bin/tzc.tzc>) to find your correct start time.

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REGISTRATION INFORMATION

Mail or fax this form along with payment. You will receive a confirmation and/or invoice within 48 hours. Make checks payable to EUCI.

MAIL DIRECTLY TO:

EUCI
4643 S. Ulster St., Ste. 350
Denver, CO 80237, USA

ONLINE:

www.euci.com

FAX TO:

(303) 741.0849

PHONE:

(303) 770.8800

REFUND / CANCELLATION POLICY

All cancellations received prior to February 26, 2010 will be subject to a \$50 processing fee per web conference per registrant. Written cancellations received after this date will create a partial credit of the tuition good toward any other EUCI conference, publication or web conference. This credit will be valid for six months. No refunds will be given after February 26, 2010 in any case. In case of webinar cancellation, EUCI's liability is limited to refund of the webinar registration fee only.

PLEASE REGISTER THE FOLLOWING

- The Biomass Gasification Option for Repowering Existing Coal-Fired Boilers, March 17, 2010, Single Site Connection: \$345
Early Bird on or Before March 16, 2010: \$295

- Additional Connection: \$245
Early Bird on or Before March 16, 2010: \$195 each
Number of additional connections: _____

- Web Conference Presentations Available on CD:**
CDs are available 2 weeks after the web conference is complete. The cost per CD is US \$295 [add US \$50 for international shipments]. Upon receipt of order and payment the CD will be shipped to you.

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

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When you sign up to "Energize Weekly" you will receive a new conference presentation each week via email on a relevant industry topic. The presentations are selected from a massive library of over 1000 current presentations that EUCI has gathered during its 22 years organizing conferences.

- Sign me up for "Energize Weekly"**

How did you hear about this event?
(Direct email, Colleague, Speaker(s), etc.)

Name _____ Job Title _____

E-Mail _____

Company _____ Telephone _____

Address _____ City _____ State _____ Zip _____

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