

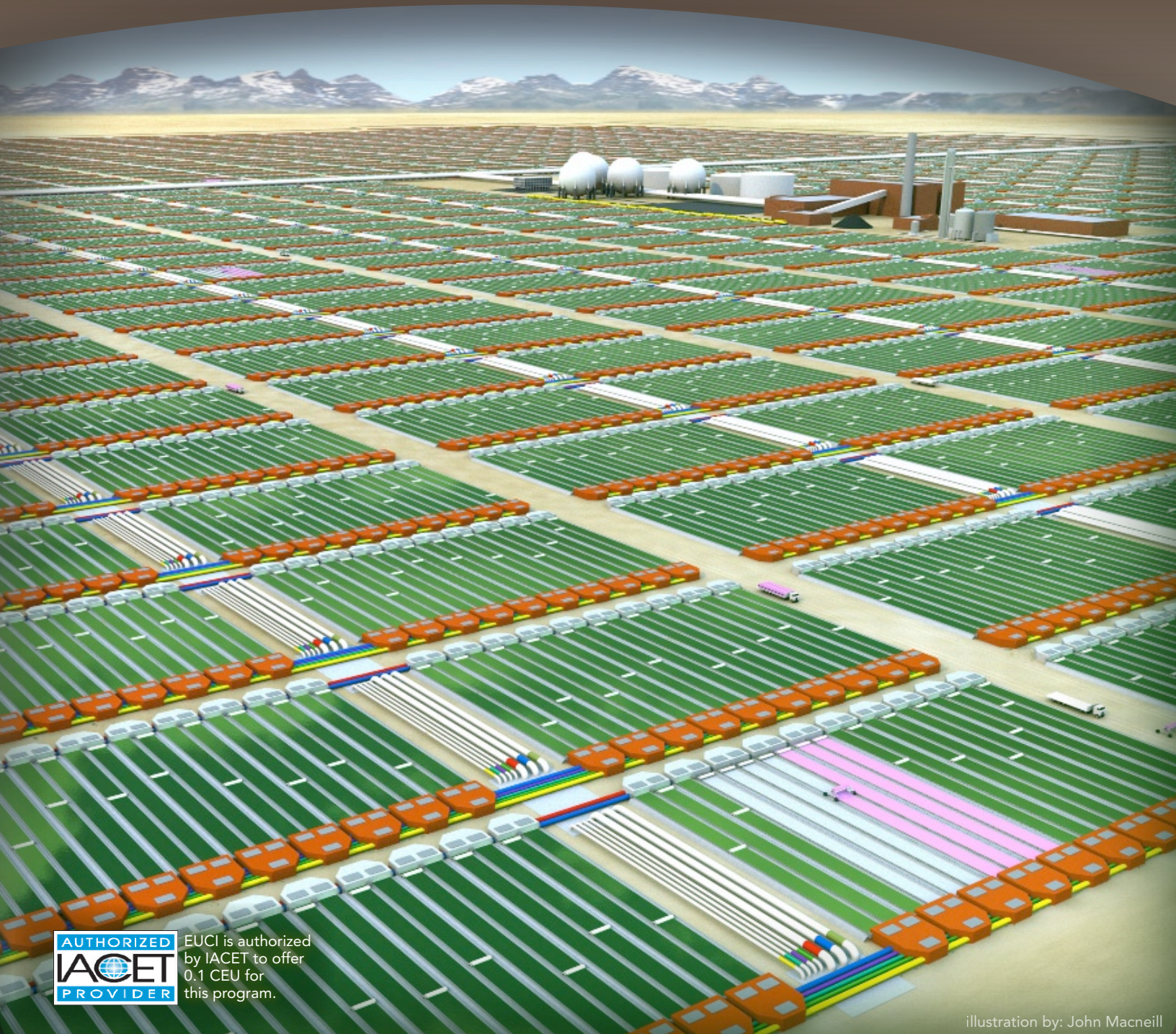
EUCI Presents a Web Conference on:

LOW CARBON FOSSIL POWER GENERATION THE ALGAE-OXYFUEL SYNERGY

November 12, 2009



12:00 – 1:30 p.m. Eastern Time



EUCI is authorized
by IACET to offer
0.1 CEU for
this program.

LOW CARBON FOSSIL POWER GENERATION

THE ALGAE-OXYFUEL SYNERGY

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OVERVIEW

This webinar is a tutorial on the financial, environmental, efficiency, deployability, and energy security synergies that exist between the emerging algal biomass industry and new/retrofit Oxyfuel fired coal and natural gas power generation. Additionally there will be an introduction to the size, siting and permitting parameters, political outlook, and co-deployment timing and planned projects within the evolving algae industry. The combination of technologies offers unique retrofit opportunities.

WHO SHOULD ATTEND

- Utility executives with renewable energy responsibilities
- Directors of renewable development
- Climate change specialists
- PUC staff and commissioners
- NGO's and green advocacy groups looking to foster renewable adoption
- Finance and investment professionals
- Renewable energy lawyers
- City, State, and Federal officials
- Government staff responsible for green program strategy and planning
- Renewable and clean-tech project developers

LEARNING OUTCOMES

- Review the fundamental workings, dynamics and players of the upcoming algal biomass industry
- Distinguish the developing algal industry metrics of CO₂ conversion, land use, water consumption, and product value
- Identify the unique synergies between proposed roller-film industrial algae production and maximizing the sustainability of coal/gas/biomass fired Oxyfuel Combustion based power generation
- Examine the prospective cost, land use, water use, economic, and jobs value of coal and natural gas fueled utility power generation examples
- Classify the siting and regulatory challenges
- Project industry rollout realities, plausible dates and predictive benchmark events

INSTRUCTOR

Jim Sears, Chief Technology Officer, A2BE Carbon Capture and Chairman of the Technical Standards Committee for the Algal Biomass Organization

Jim Sears is the Chief Technology Officer for A2BE Carbon Capture of Boulder, Colorado and is recognized as a thought leader on the creation and build out of the algal industry. He has an electrical engineering degree from the Georgia Institute of technology and 33 years of experience leading advanced and broad-bases technology teams in the development of land based, underwater, and space technology. A2BE Carbon Capture was formed to accelerate the growth of a technological and business collaborative base that is intended to globally commercialize highly scalable food and fuel production from algae. Jim previously founded Solix Biofuels in 2005 to demonstrate scalable photo-bioreactor technology and then moved on with A2BE Carbon Capture to complete the full scale development of roller-film closed PBR cultivation technology and further expand the scope and capabilities of collaboration within the industry. Jim has been a Boulder, CO based technology entrepreneur and researcher since 1990 in fields as diverse as water treatment, satellite devices, low-vision aids, agricultural electronics, and now bio-energy technology. Prior to 1990 he developed underwater mine countermeasures and underwater diving equipment for Navy Surface Warfare Center and satellite and missile technology for Ball Aerospace. Jim helped stand up the Algal Biomass Organization in 2007 where he now also serves as Chairman of the Technical Standards Committee.

IACET



EUCI has been approved as an

Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old meadow Road, Suite 500, McLean, VA 22102. In obtaining this approval, EUCI has demonstrated that it complies with the ANSI/IACET Standards which are widely recognized as standards of good practice internationally.

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.

EUCI is authorized by IACET to offer up to 0.1 CEU for this program.

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

Orientation

- What are Algae?
- Industrial vs. Biological respiration
- Valuable algal fuels & co-products
- Major divisions of "Open" and "Closed" cultivation technologies
- Overall algal industry description and status

Sustainability Lifecycle Metrics for Algae

- CO₂
- Land
- Water
- Nutrients
- Energy Balance

Potential Utility Power Generation Advantages of OxyFuel Combustion

- Easier and more water conserving CO₂ emissions capture
- Can often be retrofitted into older power plants
- NO_x, SO_x, Hg removal easier from smaller flue gas volume
- Enables future development of high-temperature "topping cycles" to add efficiency

Disadvantages of Conventional OxyFuel Concepts

- Conventional Oxyfuel generation can lose 23% gross power output due to oxygen generation and CO₂ compression
- Net electricity production and revenue could potentially be reduced 10-23%

Connection Between Oxyfuel Combustion and Roller-film Industrial Algae Cultivation

- Gas exchange and carbon recycling synergy
- Water use
- CO₂ pipeline role
- Carbon capture footprint and system operation

Case Studies: Algae - Oxyfuel Power Generation: Land, Water, Efficiency, Economics

- Algae + existing coal electric plant with Oxyfuel retrofit
- Algae + natural gas combined cycle with dry-wet hybrid cooling

Siting and Regulatory

- Current landscape
- Issues to watch
- Initiatives

Crystal Ball Predictions

- Adoption
- Regulation
- Application
- Timescale

Finding More Information

- Algal Biomass Organization (ABO)
- Commercial Aviation Alternative Fuels Initiative (CAAFI)
- A2BE Carbon Capture

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.

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.

Register Today! Call 303-770-8800 or visit www.euci.com

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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
5555 Preserve Drive
Greenwood Village, CO 80121

ONLINE:

www.euci.com

FAX TO:

(303) 741.0849

PHONE:

(303) 770.8800

REFUND / CANCELLATION POLICY

All cancellations received prior to October 30, 2009 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 October 30, 2009 in any case. In case of conference cancellation, EUCI's liability is limited to refund of the conference registration fee only.

PLEASE REGISTER THE FOLLOWING

Low Carbon Fossil Power Generation: The Algae-Oxyfuel Synergy, November 12, 2009, Single Site Connection: US \$345,
Early Bird Before November 11, 2009: US \$295

Additional Connection: US \$245,
Early Bird Before November 11, 2009: US \$195 each
Number of additional connections: _____

Web Conference Presentations Available on CD:
CDs are available 48 hours 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.

ENERGIZE WEEKLY

When you sign up for "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 _____

PAYMENT METHOD

Please charge my credit card: Visa MC AMEX Discover Security Code _____

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