



EUCI Presents:

COAL GASIFICATION

(POWER GENERATION TECHNOLOGY SEMINAR)

January 20-21, 2005

If you and your colleagues are interested in obtaining a clear and objective understanding of today's latest information on an important and successful clean coal technology for generating electricity and producing liquid fuels by using, Coal Gasification we encourage you to participate in EUCI's Clean Coal Technology Seminar.



Seminar Sponsored By:
Vista Energy Group

Marriot City Center
Denver, Colorado

COAL GASIFICATION SEMINAR

January 20 - 21, 2005

THURSDAY, JANUARY 20, 2005

Registration and Continental Breakfast

8:00 a.m. – 8:30 a.m.

Seminar Timings

8:30 a.m. – 5:00 p.m.

(Lunch will be provided)

FRIDAY, JANUARY 21, 2005

Seminar Timings

8:30 a.m. – 12:30 p.m.

(Continental Breakfast will be provided)

OVERVIEW

Join us for EUCI's Coal Gasification Technology seminar to learn the fundamentals on coal gasification technologies in the U.S. electric power sector. We will focus on Integrated Gasification Combined Cycle (IGCC) technology, the most successful method of producing electric power and liquid fuels utilizing coal gasification. This valuable seminar will provide the critical information you need to understand this important technology and its implications for the electric power industry.

WHO SHOULD ATTEND?

Executives and managers in the electric, coal and chemical industries should attend. In addition, economic and environmental regulators should consider attending. Those who attend will come away with a clear understanding of the concept and realization of coal gasification in the US and abroad.

PROGRAM AGENDA

• **An overview of the IGCC technology and how it works**

A general overview of the technology and how it is applied in the setting of an integrated gasification combined cycle power plant is presented. Focus will be on both the general operation and on specific components of the power plant. The differences in the proprietary application technologies will also be presented.

• **The history of gasification technologies, particularly IGCC technology and its applicability to the U.S. power industry**

Coal gasification has been used for almost 200 years. Its early development will be presented and the various phases of use will be explored. The developments that lead to the flexibility of this technology will also be discussed.

• **The economics of IGCC deployment versus other generation technologies**

Much attention has been paid to the relative capital costs and operating expenses between IGCC, PC technologies, fluidized beds and natural gas generating technologies. An overview of the relative costs and benefits will be discussed.

• **The use of commercial gasification throughout the world**

Gasification technologies are in widespread use throughout the world. While most applications are not specific to power generation, the basic technological components that are in use

are well developed and proven. Projected future use indicates that within several years the application of gasification to power generation will become the single largest use.

• **The ability of IGCC power plants to produce large quantities of transportation fuels as well as electric power**

IGCC power generation has the benefit of being able to produce chemicals and transportation fuels as well as power. The potential by products that can be produced include diesel fuels, naphtha, methanol and many others. The potential for influencing the economics of IGCC deployment will be explored.

• **Energy tax policy and gasification**

Like many new technologies, gasification research and development as well as demonstration has been supported by tax policies. The history of these tax policies in the US will be presented and potential new tax policies discussed.

• **Demonstration projects and their results**

There are a number of demonstration projects in the US and abroad that were initially funded to prove the commercial viability of IGCC technology to generate power and/or chemicals. A review of these projects and their levels of success will be discussed.

• **US and global research, development and future improvements**

While it is generally accepted that IGCC is no longer a speculative technology, near term and future technology advances could significantly enhance the reliability and efficiency of future applications. These areas of research and development will be presented and discussed.

The critical benefits that IGCC deployment provides will be explored and explained in four key areas including:

ENVIRONMENTAL:

• **Reductions in regulated air emissions**

NOx, SOx, Mercury, particulates and others

• **Reductions in unregulated air emissions**

Carbon Dioxide and other potential regulations

• **Reductions in effluents**

Water use and treatment systems

• **Production of salable by-products**

Chemicals, fertilizers, building materials and others

• **Taking account of potential future regulation and effects**

Future regulation of emissions, for instance, must be taken into account in power technology generation choices. These factors will be discussed.

ECONOMIC:

• **Use of domestic coal**

The history of the coal industry and the level of potential domestic assets will be presented. Types of coal and related coal issues, such as the need to remove waste coal piles will be discussed.

• **Preservation of natural gas supplies**

The use of natural gas to generate power has become an issue on a number of levels including cost and the use of the nation's most

COAL GASIFICATION SEMINAR

January 20 - 21, 2005

valuable fuel source. These issues will be presented and discussed.

- **Lower, more stable electric prices**

The electric market has changed dramatically over the last decade and that has affected the efficacy of various generation technologies. These factors will be discussed.

- **Foreign trade opportunities**

As nations like China which have large coal assets and a rapidly growing need for power and other IGCC by-products grow, the demand for IGCC technology deployment will increase as well. The US is in a position to be a market leader in this area and take advantage of these foreign trade opportunities.

TECHNOLOGY ADVANCEMENT:

- **Carbon sequestration opportunities**

There are at least two large carbon sequestration projects operating currently. While there are still some arguments about the validity of the global warming phenomenon, it is still a cause to examine and be knowledgeable concerning sequestration. Sequestration technologies will be examined and discussed.

- **Production of clean fuels**

The diesel fuels that are produced using IGCC are very clean and now meet the impending regulations on the quality of transportation diesel fuels. The impact of this will be discussed.

- **Hydrogen economy and fuel cells**

There has been much discussion concerning the prospects for a hydrogen energy economy. The prospects for a hydrogen economy will not be discussed in detail, however, the potential for IGCC to produce hydrogen will be presented.

- **Imminent technological advances in IGCC**

The federal government and private industry are moving toward several advances that will make IGCC more cost effective and environmentally friendly. These advances, their stage of development and their direct implications will be discussed.

- **Underground gasification**

There has been a great deal of interest abroad in the concept of putting the gasification facility underground to facilitate sequestration and reduction of other emissions and effluents. This concept will be discussed.



Polk Plant

ENERGY AND NATIONAL SECURITY

- **Dependence on imported energy supplies**

There is a renewed concern in the US about reliance on imported energy supplies. IGCC technology deployment can be used to address, at least in part, that concern. The ways that the level of imported energy supplies may be reduced will be discussed.

- **Gasification versus LNG**

The substantial interest in importation of liquefied natural gas has been a topic of great discussion. The economics of LNG versus gasification will be discussed including the issues related to the importation from unstable areas of the world.

- **Reduced infrastructure vulnerability**

The transportation of coal is far less vulnerable to terrorist threats than natural gas and oil. These factors will be discussed.

Existing challenges to IGCC deployment

- **What experts and stakeholders think**

The methods and results of a survey of experts and stakeholders on the most pressing non-technical challenges to rapid deployment of IGCC technology in the US power sector will be presented.

- **Results by industry sector**

Results broken down by industry sector and final rankings will be presented.

Recommendations in six key areas will be presented and discussed:

- **Siting and permitting**
- **Project financing and plant availability**
- **Co-production/national security**
- **Strategies for meeting present and future environmental standards**
- **Relative cost of IGCC power plants and natural gas combustion turbines**
- **Federal and State government roles**

For more information on our co-sponsor
Vista Energy Group
visit: www.vistaenergygroup.com

COAL GASIFICATION SEMINAR

January 20 - 21, 2005

PRESENTERS:

Dr. John N. O'Brien is President and CEO of the Vista Energy Group. He is a nationally recognized authority on the deployment of IGCC technologies, has been instrumental in developing the case for IGCC technology, working closely with the Department of Energy and NARUC. He was the Principal Investigator and author of the DOE/NARUC report entitled, *An Analysis of the Institutional Challenges to Commercialization and Deployment of IGCC in the U.S. Electric Industry: Recommended Policy, Regulatory, Executive and Legislative Initiatives*.

Dr. O'Brien has twenty-eight years of experience in the energy business. He has most recently become President & CEO of the Vista Energy Group. Before that he served as President of Global Change Associates; Principal at Skipping Stone, Inc.; Founder, President and CEO of Wheeled Electric Power Company, All Power Corporation, and Direct Gas Supply Corporation. He also served as a Full Scientist at the U.S. Department of Energy's Brookhaven National Laboratory for ten years. His areas of expertise include the restructuring and functioning of the electric and natural gas markets and infrastructure in the U.S. and Canada; investment banking and analysis in the energy sector; founding and building energy businesses; clean coal technologies; generation plant siting, permitting and project finance; mergers and acquisitions; cost-effective customer acquisition and retention techniques; energy management and accounting systems, among others.

Mr. Matthew F. Rose, Vista Energy Group Principal, has twenty years of experience in the energy business. He is a creative and seasoned consultant in the utility and energy industry. He has a proven ability to design and implement "grounded" business strategies, build stakeholder consensus, design and conduct valued research initiatives. His expertise is focused on business/strategic market planning, retail markets, environmental issues and market research. Mr. Rose was also co-author with Dr. O'Brien of the report entitled *An Analysis of the Institutional Challenges to Commercialization and Deployment of IGCC in the U.S. Electric Industry: Recommended Policy, Regulatory, Executive and Legislative Initiatives*.

LOCATION

A room block has been reserved at the Marriott Denver City Center, 1701 California Street, Denver, CO 80202, for the nights of Jan.18-20, 2005. The rate is \$129 single or double occupancy, plus applicable tax. Call the Marriott Denver City Center, 1-800-228-9590 or (303)297-1300 for reservations and mention the EUCI Seminar to get the group rate. Make your reservations prior to Dec. 31, 2004. Reservations after this date will be on a space available basis and **cannot be guaranteed at the conference rate.**

REGISTRATION

For instant registration, call **(303)770-8800** or fax the Registration Form to (303)741-0849.

Register 3, Send 4th Free!! Any organization wishing to send multiple attendees to these conferences may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.

All cancellations received on or before December 17, 2004, will be subject to a \$195 processing fee. Written cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI conference or publication. This credit will be good for six months. In case of conference cancellation, Electric Utility Consultants' liability is limited to refund of the conference registration fee only.

Fax or mail to:

Electric Utility Consultants Inc.;
5555 Preserve Drive Greenwood Village, CO 80121
Phone: 303.770.8800 **Fax:** 303.741.0849
<http://www.euci.com>

PAYMENT METHOD

Please charge my credit card Visa MC American Express Discover
(circle one)

Account Number _____ Exp Date _____

Signature _____

Billing Zip Code _____

Or enclosed is a check for \$ _____ to cover _____ persons.

PLEASE REGISTER THE FOLLOWING:

Name _____

Title _____

Name Preferred for Badge _____ Email _____

Company _____ Telephone _____

Address _____ Fax _____

City _____ State _____ Zip _____

Coal Gasification Seminar
January 20 - 21, 2005, \$1,395,
Early Bird Before Jan. 7, \$1,195