



Alternative Energy Workshop

Holiday Inn on the Lane
Thursday November 6, 2008
9:00 a.m. to 4:00 p.m.

Speakers Biographies & Abstracts

Alternative Energy Workshop

09:00 **Mitigating Risk - New Ways to Drive Innovation by Leveraging Government Partnerships**

Susan Ward, President, ITECS-Innovative

Abstract

With an uncertain economy, creativity is necessary to uncover new, stable R&D growth opportunities. One possibility may be to explore opportunities with the federal government. In 2008, the U.S. government spent more than \$145 billion on R&D, which is one-third of the total research dollars invested in the U.S. By leveraging some of this funding, a company can help mitigate risk in developing new technology products and markets. The federal government recently introduced a range of policies and programs designed to increase the effectiveness of government R&D and enhance US technology-based economic growth. These include: licensing of federal patents; cooperative R&D agreements; the advanced technology program; and the manufacturing extension partnership. These programs are important in stimulating technological innovation and improving U.S. competitiveness--especially when combined with incentives for capital formation and regulatory reforms.

This presentation will include:

- The history of the government's investment in R&D
- Identifying the latest trends in partnership

- The process of how to identify and develop partnering opportunities
- Case studies illustrating how businesses, universities and non-profits have secured millions of dollars in research funding and product sales

About the Speaker

Susan Ward is a performance oriented executive with over 20 years experience in business and technology development. While in industry Susan held a variety of positions from Product Development Manager to Director of Strategic Development to Vice President of Global Technology at CIBA-GEIGY, ICI, EXXON, Owens Corning and IMERYYS. She has created and led organizations in North America, Europe and China that supported businesses ranging in size from \$33 million to over \$5 billion.

Susan is founder and president of ITECS, a technology development company. ITECS has helped businesses, universities and not-for-profit clients secure more than \$100 million in government funding and assisted in more than \$500 million in successful technology product introductions.

09:45 **Energy Savings Opportunities in Continuous Running Applications with use of a Water Cooled Transformer System**

Stanley F. Rutkowski III; Senior Applications Engineer; BSEE; Roman Manufacturing Inc.

Abstract

With the rising costs of electrical energy in the global marketplace, manufacturing industries are investigating the opportunity to reduce costs in their processing. During the times of low cost energy, little or no influence was given to electrical losses in a system as it had minimal impact on the operating cost of manufacturing a product. As the cost of electricity has risen, the impact of the operating cost has come to the forefront as an issue of competitiveness.

About the Speaker

Stanley has worked at RoMan Manufacturing since 1991 and is a Senior Applications Engineer with the company. Stanley graduated from GMI Engineering & Management Institute with a Bachelor of Science in Electrical Engineering. Stanley has worked in the lab, design process and applications at RoMan and worked extensively in welding, resistance heating and the glass industry to apply the appropriate transformer for a given application.

10:30 Break

Safety – It’s Too Important to Be Proprietary

11:00 Introduction *Terry Berg, CertainTeed*

11:15 The Value of Safety/What is Safety Worth?

*Nicholas Guglielmo; Health and Safety
Specialist; Safety Control Technology*

Abstract

The topic of discussion revolves around the benefit of incorporating a comprehensive safety program at your place of work. Safety is not a new concern, but it has been deemed by some to be more of a requirement than a necessary function in the scheme of operating a business. This discussion is intended to increase the awareness of how safety is not a merely a mandate of compliance by OSHA and the NLRB, but how a complete safety program can be an effective tool in achieving goals and improving the bottom line.

This discussion will touch upon how safety is a value added tool as it relates to business and operation, and it will also reflect on what safety means to the individual. An assessment of how managing safety provides overall benefits not just for employees but for the corporation as well.

Details regarding facets and components included in a facility safety program are included in the discussion. Items such as management participation and employee involvement are important pieces to an effective safety plan. Key elements will be reviewed from policy statements to hazard recognition to identifying training requirements.

With safety we determined that value is created and benefits are derived from implementation of workplace program. It may also stand to reason that establishing a manufacturers' safety council would benefit the membership as well.

About the Speaker

Nicholas Guglielmo, (EI) has been working in the Environmental Health and Safety (EHS) field for the past eleven (11) years in and around the greater Cleveland Area. He possesses a Bachelor's Degree in the field of Chemical Engineering. Nicholas also has his Engineering Intern (EI) accreditation and is working towards obtaining a Professional Engineering (PE) license here in the State of Ohio. Nicholas has worked both in-house for industry and as a consultant during his Cleveland career. His work to date has included involvement with OSHA, the US EPA, Ohio EPA and other environmental protection agencies in several other states. Part of his duties has included employee training and orientation involving health safety and environmental programs. Nicholas was also at-one-time the facility coordinator for the on-site Emergency Response Team, which included about 20 full-time personnel. His work has also included facilitating and creating emergency/contingency planning for facility pollution prevention and chemical releases pertaining to oil spill control, storm water management, and hazardous waste generators.

12:00 Lunch

Alternative Energy – Addressing Rising Prices and Carbon Constraints

12:45 **Introduction**

Michael Greenman

1:00 **Evaluation of Low Energy Production Solutions for the Glass Industry**

Len Switzer; New Business Development Manager; Praxair, Inc.

Abstract

The sustainability of the glass industry hinges on its ability to reduce the energy costs associated with creating glass products. With the price of fuel, electricity, raw materials, and transportation on the rise, energy intensive industries such as glass manufacturing, must consider more complex and integrated approaches to energy management. When one examines the glass making process from the batch house to packaging, there are in general multiple opportunities to save energy. The challenge is in identifying which opportunities give optimal savings versus the investment cost. In this presentation, we will evaluate a number of scenarios for reducing energy in a glass making process, including ideas around furnace design, combustion technology, waste heat recovery, and energy & operational management. Multiple solutions exist to reduce the energy and environmental footprint of any given glass facility. However, integration of energy saving systems means optimizing for each specific case based on the technical and economic needs of the end-user.

About the Speaker

Len Switzer is Praxair's North American, Business Development Manager for Glass Technologies. In this role, Len focuses on bringing new technology to the glass industry to save cost, increase productivity and enhance quality through the use of industrial gases. Previously, Len worked in Praxair's Research & Development Group which concentrated on Combustion related applications mainly associated with glass melting and conditioning. He has worked on developing and commercializing new technologies for the utility, glass, aluminum, steel, and heat treating industries. Len earned a Bachelor of Science degree in Chemical Engineering from Michigan Technological University and a PhD in Chemical Engineering from the University of Wisconsin–Madison before joining Praxair.

1:30 **Coal Gasification – Pipeline-Quality Synthetic Natural Gas from a Low-cost, Low/no Emissions Technology**

Albert Calderon, President, Energy Independence of America Corp.

Note: Due to the developmental state of this program, the presentation has not been included in this CD. For information on the Calderon Gasification Project, please contact GMIC at +1-614-818-9423 or email Michal Greenman at mgreenman@gmic.org for additional information or to set up a visit to Bowling Green.

Abstract

The Energy Independence of America Corp. possesses a low-cost Integrated Gasification Combined Cycle (IGCC) technology that polygenerates low-cost power and low-cost methanol/gasoline or synthetic natural gas of pipeline quality as by-products from any coal, including high sulfur coal, while converting the flue gas containing CO₂ (from the heat recovery steam generator downstream of the combustion turbines of the generating complex) into a low-cost fertilizer, thus eliminating carbon capture and storage altogether to result in a most comprehensive technical and economic solution for Clean Coal.

About the Speaker

Albert Calderon, founder and president of Calderon Energy, has been an inventor working in the steel industry since 1950, first in scrap-charging (1950-1975), continuous casting of steel (1965-1969), pollution control of coke ovens (1969-1979), and in cokemaking, direct ironmaking, coal gasification, hot-gas cleaning, and conversion of flue gas containing CO₂ into fertilizer (1979-present). He has been awarded over 45 U.S. patents in coal gasification, cokemaking, hot-gas cleaning, direct reduction of iron, and upgrading of petroleum residuum; currently he has several patent applications on file.

2:00 Landfill Gases – A Proven Alternative Energy Source For Industry

Tony DiPuccio, P.E., Vice President, SCS Engineers.

Abstract

Landfill gas (LFG) is an available, proven, economically competitive, and growing energy resource. Currently, at least 455 LFG energy (LFGE) projects in the US were generating electricity or providing a direct-use energy source for kilns, boilers, furnaces, and other applications. Approximately 100 direct-use LFGE projects in operation burned over 79 billion cubic feet of LGE in 2007. These direct-use projects used pipelines that ranged from a few hundred yards long to 23 miles in length to deliver 20 to almost 10,000 cubic feet per minute of LFG. Based on estimates from the U.S. Environmental Protection Agency's Landfill Methane Outreach Program (LMOP), there are still over 550 existing landfills that are viable candidates for project development. These candidate landfills have the potential to generate over 1,300 MW of electricity or provide nearly 700 million standard cubic feet per day of landfill gas.

LFG is a byproduct of the decay process in municipal solid waste landfills. It contains approximately 50% methane and 50% carbon dioxide, with some additional trace compounds. The heat value of LFG ranges from 400 to 600 Btu/cubic foot and can burn in any application with minor adjustments to fuel delivery systems. The use of LFG provides significant environmental and economic benefits. In fact, most greenhouse gas markets value landfills as providers of emission credits.

Currently, at least one glass artisan studio uses LFG as the primary source for their glass blowing operations. LMOP is aware of two other LFG projects that are under construction or in advanced planning stages where LFG will be utilized as an energy source for artistic or industrial glass

production. These users of LFG have realized significant cost savings compared to the use of traditional fuels, as LFG costs are consistently less than natural gas. Because LFG is approximately half methane, a potent greenhouse gas, reducing landfill methane emissions by using it as a fuel can help glass manufacturers protect the environment and build a sustainable future.

LMOP is a voluntary assistance and partnership program that promotes the use of LFG as a renewable, green energy source. To encourage the use of LFG, LMOP provides free outreach, educational, and technical services to any parties interested in LFGE projects. LMOP works with landfills, communities, industry, utilities, and independent power producers to:

- locate landfills that are viable for project development
- estimate distance between viable landfills and galvanizing facilities
- estimate energy potential from the viable landfills
- conduct preliminary feasibility studies for LFGE projects
- provide a networking platform for parties involved in LFGE projects
- determine the environmental and economic benefits of LFGE projects
- communicate the benefits of LFGE projects

About the Speaker

Mr. DiPuccio has 25 years of experience in the environmental engineering field. He has worked in the development of numerous landfill gas recovery and utilization projects. Tony has a degree in Civil Engineering from the University of Cincinnati and is a Vice-President of SCS Engineers in their Cincinnati office.

2:30 A Glass Factory as a Power Plant - A Review of Options

*Dan Wishnick, Industry Manager, Siemens
Energy and Automation*

Abstract

This presentation will examine different options available to the industry for the self generation of power and/or the recycling of energy. Included will be highlights from zero energy buildings and a review of waste heat recovery options.

About the Speaker

Dan Wishnick is an industry manager in the Competence Center at Siemens Energy & Automation with responsibility for the Glass, Solar and Ceramic vertical industries. Dan has more than 25 years of experience in sales, marketing, engineering, business development and managing operations in the US, China, India, South America and Europe. Previous to Siemens, Dan had executive level global sales and technical positions with companies involved with high temperature control systems into glass and other process industries. Dan has a B.S. degree in ceramic engineering from Rutgers University.

3:00 Purchase Power Agreements – Financing Alternative Energy

*Russ Meeker, Principal, Renewable Concepts
& Design, LLC*

Abstract

This speaker will suggest ways to finance an alternative energy system so that it will pay for itself. Alternative energies are not sourced by burning fossil fuels (oil, natural gas, and coal) or splitting atoms (nuclear). Typically, alternative energies do not deplete natural resources. Using alternative energies not only can reduce traditional utility costs, but may also provide a new revenue stream for your company's bottom line.

About the Speaker

Russ Meeker formed Renewable Concepts & Design in 2003 to provide support to individuals, organizations, and communities who wish to implement energy efficiency and renewable energy solutions. Russ is a strong advocate for legislation and policy that support energy efficiencies and renewable energy, and has served as a resource to legislators for testimony. Renewable Concepts & Design is committed to a vision in which the community's existing energy needs are met without compromising the ability to meet the energy needs of future generations.

Russ is an active member many environmental and community organizations including the recently launched Alliance for Renewable Energy (charter member), the national 25x'25 initiative, Green Energy Ohio, the Ohio Environmental Council, Mid-Ohio Regional Planning Commission's Clean Air & Energy working group, Ohio Green Living (charter member), and the Ohio Consumers Council Community Advisory Panel.

Russ, and his partner Mary Cunyngnam, are Ecopreneurs – a growing group of enterprising individuals with ecologically sound and environmentally sustainable businesses.

3:30 Being Ready for Alternative Fuels

*Douglas Davis; Senior Glass Technologist;
TECO*

Abstract

With increasingly long campaign lives, a melter designed for one fuel alone will hamper its owner in adjusting to the pressures from energy costs and supplies, or environmental constraints. This paper encourages glassmakers to consider equipping a new or rebuilt melter with the hardware and systems to allow changing to different fuels or using combinations of fuels in the future.

About the Speaker

Doug Davis is currently Senior Glass Technologist for Toledo Engineering Co. – better known as TECO. Doug is a Ceramic Engineer from Alfred University, collecting some advanced degrees. He has worked for Norton, PPG, FMC, Manville, Envitco (a hazardous waste vitrification company) and finally TECO. In spite of his nomadic employment, his calling has remained clear (glass that is).

4:00

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