

**Call for Papers**  
**The 43<sup>rd</sup> International**  
**Technical Conference**  
**on Clean Energy**  
**June 3 to 7, 2018**  
**Sheraton Sand Key**  
**Clearwater, Florida, USA**

**If You Want To Learn More About Innovations That Are Meeting The Challenges to Energy Utilization From The World's Key Planners, Leading Experts and "Super Scientists" In The Most Comprehensive Program on Energy Technologies With Representatives From Six Continents, Then You Must Attend.**

**THE CLEARWATER**  
**CLEAN ENERGY CONFERENCE**



## Areas and Topics To Be Covered in the Technical Sessions at the 2018 Clearwater Clean Energy Conference

### ADVANCED COMBUSTION AND CYCLES

*Dr. Ligang Zheng, CANMET*

<b>Oxy-Combustion</b>	<i>Dr. Klas Andersson and Dr. Andrew Fry, Brigham Young University</i>
<b>Chemical Looping</b>	<i>Dr. Andrew Tong, Ohio State University</i>
<b>Supercritical CO<sub>2</sub></b>	<i>Dr. Joshua Stanislawski, UNDEERC; Dr. Jeong Ik Lee, Korea Advanced Institute of Science and Technology; and Bhupesh Dhungel, Air Liquide</i>

### POWER PRODUCTION AND INDUSTRIAL PROCESSES

*Bonnie Courtemanche, Babcock Power Inc. and  
Prof. Dr.-Ing. Viktor Scherer, Ruhr-Universitat-Bochum, Germany*

<b>Combustion Technologies and Issues</b>	<i>J.J. Letcavits, AEP and Alan Paschedag, Covanta</i>
<b>Biomass Co-Firing (Power Plant Based)</b>	<i>Les Marshall, Ontario Power Generation and Mathieu Insa, EDF, France</i>
<b>Radiative Heat Transfer in Combustion</b>	<i>Brad Adams, Brigham Young University</i>
<b>Energy From Waste</b>	<i>Alan Paschedag, Covanta</i>
<b>Ash Utilization</b>	<i>Horst Hack, EPRI and Prof. Viktor Scherer, Ruhr- Universität Bochum, Germany</i>
<b>Solids Handling/Fluidization/Attrition</b>	<i>Dr. Ronald Breault, National Energy Technology Laboratory, U.S. Department of Energy</i>
<b>Natural Gas Power Production</b>	<i>Massood Ramezan, KeyLogic and Prof. Ashwani K. Gupta, University of Maryland</i>
<b>Gas Turbines for Power Generation</b>	<i>Brad Adams, Brigham Young University</i>
<b>Combined Heat and Power</b>	<i>Dalia El Tawy, Siemens</i>
<b>Load Following Issues</b>	<i>Yogesh Patel, TECO</i>
<b>Energy Storage</b>	<i>Dalia El Tawy, Siemens</i>
<b>Industrial High Temperature Processes (Glass, Cement, Lime, Steel, etc.)</b>	<i>Prof. Viktor Scherer, Ruhr-Universität Bochum, Germany, and Dr. Lawrence E. Bool, Praxair</i>

### WATER TECHNOLOGIES

*Byron Burrows, Tampa Electric Company*

This year the Clean Energy Conference will spotlight Water Technologies. As such, technical papers and exhibit booths are encouraged to highlight the current state of available technologies and equipment relating to this topic. The spotlight is intended to include all water technology topics.

<b>Tailings and Fly-ash Treatment</b>	<b>TBD</b>
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### FUELS

*Prof. Ashwani K. Gupta, University of Maryland*

<b>Gas</b>	<i>Jared Ciferno, National Energy Technology Laboratory, U.S. Department of Energy</i>
<b>Coal</b>	<i>Dr. Dave Osborne, Somerset International Australia Pty</i>

	<i>Ltd.</i>
<b>Upgrading/Beneficiation</b>	<i>Dr. Dave Osborne, Somerset International Australia Pty Ltd.</i>
<b>Combustion Fundamentals</b>	<i>Prof. Dale Tree, Brigham Young University</i>
<b>Applications and Fundamentals</b>	<i>Massood Ramezan, KeyLogic</i>
<b>Co-Firing Fundamentals</b>	<i>Eric Eddings, University of Utah</i>
<b>Innovative Low Carbon Fuels</b>	<i>Dongke Zhang, The University of Western Australia</i>
<b>Oil Shale and Tar Sands</b>	<i>Prof. Raj Gupta, University of Alberta, Canada</i>
<b>Hydrogen Production</b>	<i>Bhupesh Dhungel, Air Liquide</i>
<b>Recovery of Rare Earth Elements</b>	<i>Eric Eddings, University of Utah</i>
<b>Waste Derived Fuels</b>	<i>Prof. Viktor Scherer, Ruhr-Universität Bochum, Germany</i>
<b>CO<sub>2</sub> Capture/Utilization/Storage</b> <i>Dr. Erik Meuleman, ION Engineering</i>	
<b>EOR/EGR Sequestration</b>	<i>Jared Ciferno, National Energy Technology Laboratory, U.S. Department of Energy (TBC)</i>
<b>C1 Chemistry</b>	<i>Dr. Sankhar Bhattacharaya, Monash University, Australia, and Prof. Dr. Jochen Lauterbach, University of South Carolina, USA</i>
<b>Carbon Capture</b>	<i>Dr. David Hopkinson, National Energy Technology Laboratory, U.S. Department of Energy</i>
<b>Other CO<sub>2</sub> Utilization</b>	<i>Lynn Brickett, National Energy Technology Laboratory, U.S. Department of Energy (TBC)</i>

## THE CLEARWATER CLEAN ENERGY CONFERENCE HIGHLIGHTS

**MISSION STATEMENT** – Increased demand – coupled with energy security issues, uncertainty in the oil sector, and tightening environmental regulations – **make this conference a must for those involved in all aspects of power generation** who must meet the competitive pressures and environmental concerns in the 21<sup>st</sup> century. **The current Administration continues to bring in many more challenges**

**The Panels, Short Courses and Technical Sessions** are works in progress and additional titles will be added after the January 15<sup>th</sup> deadline for abstracts.

**Technical Sessions** The conference presents topics of the greatest interest to the industry in the technical sessions. In some instances, energy leaders organize technical sessions on their area of expertise. The conference will offer at least 30 technical sessions on the topics listed above.

and opportunities for the energy sector. We plan to cover all the proposed programs and policies. As changes and additions occur, we will cover them.

Through the Technical Sessions, Short Courses, and Panels, cutting-edge developments dealing with **technical solutions to problems; specific strategies; projects; innovations; industry trends; and/or regulatory compliance** will be offered. The program presents an extensive overview of emerging, evolving, and innovative technologies, fuels and/or equipment in the power generation industry. We seek papers from all countries worldwide.

The **Clearwater Clean Energy Conference** offers participants about 150 technical presentations in four days. Buffet style luncheons in the Exhibit Center (an area dedicated for the use of attendees all day), refreshment breaks and a fabulous beach reception offer numerous networking opportunities.

## **CONFERENCE HIGHLIGHTS**

**International Programs – Technical Developments – Policy Issues**

**Panels** To provide our attendees with the most comprehensive and up-to-date information from the world's energy leaders, we offer panel presentations covering an overview of emerging, evolving, and innovative technologies, fuels, policy and/or equipment in the power generation industry.

### **Current State of the Energy From Waste System**

**Short Courses** On Sunday, we offer Short Courses on a wide variety of topics important to the energy community. **Participation is optional; is included in the registration fee; and open to all conference registrants.** The Short Courses are offered on Sunday, June 3<sup>rd</sup>.

### **Practical Optimization of the Coal Supply Chain**

*G.H. Luttrell, Virginia Tech; and  
P. J. Bethell, Marshall Miller and Associates*

### **Combustion Issues**

*Alan Paschedag, Covanta, Inc., and  
J.J. Letcavits, American Electric Power*

**Themed Luncheon** – A conference favorite is the Themed Luncheon. Industry leaders host tables of 8 where a specific topic is chosen by the host for discussion during lunch.

**Exhibit Center** An **Exhibit Center** showcasing 24 booths also provides opportunities to highlight accomplishments and achievements. We did something very different in 2017 in that we offered tables for Information Display. Those signing up for this were included in the write-ups and could include an ad in the Official Program.

Papers from the international community are strongly encouraged. In the 2017 conference 16 countries were represented at the conference. In addition, one-third of all attendees were from the international community. The international papers were related to energy/environmental developments throughout the world.

The Committee also encourages papers that deal specifically with the topics covered in the Keynote Session, Panels, Short Courses and Plenary Sessions.

## **BACKGROUND**

At the direction of the Conference Committee, it was decided to broaden the scope of the conference to include some new and exciting technologies currently on the horizon. Industry professionals representing nearly all the major players in the electric utility industry were in Clearwater, Florida, USA for the **42<sup>nd</sup> Clearwater Clean Energy Conference**.

This conference has earned a reputation for excellence as one of the premiere conferences on coal

## **Field Trips**

### **Polk Power Plant Tour – Friday, June 9, 2018**

Tampa Electric Company planned, engineered, built, and operates the Polk Power Plant Unit #1 Integrated Gasification Combined Cycle (IGCC) Power Plant. The project was partially funded under the Department of Energy's Clean Coal Technology Program pursuant to a Round III award.

### **Covanta Plant Tour – Friday, June 9, 2018**

The Pasco County Solid Waste Resource Recovery Facility in Spring Hill, FL, operating as Covanta Pasco, Inc., began commercial operation in May 1991, serving the residents of Pasco County. The facility processes up to 1,050 tons per day of municipal solid waste, generating 31.2 megawatts of renewable energy that is sold to Duke Energy. The facility uses secondary sewer treatment effluent from a nearby wastewater treatment plant for part of its process water make-up.

**Energy-from-Waste System:** Three 350 ton-per-day waterwall furnaces with Martin® reverse-reciprocating grates and ash handling system

**Boiler Design:** 865 pounds per square gauge (psig)/830°F superheater outlet conditions

**Air Pollution Control Equipment:** Semi-dry flue gas scrubbers injecting lime, fabric filter baghouses, nitrogen oxide control system, mercury control system, and continuous emissions monitoring (CEM) system

**Rated Refuse Capacity:** 1050 tons-per-day

**Energy Generation at Rated Capacity:** Up to 31.2 megawatts from one condensing steam turbine generator

**Sold to:** Duke Energy

**Best Student Paper Award** – Over the years the conference has benefitted from the many excellent papers given by students. To give these exceptional students well deserved recognition, the Conference Committee now presents the **Clearwater Clean Energy Conference Best Student Paper Award**.

technologies as it grows in size and scope since its inception in 1975.

### **CONFERENCE**

**HEADQUARTERS** – Sand Key is one of the 20 Best Beaches, according to many travel and tourism organizations. **Sheraton Sand Key**, 1160 Gulf Boulevard, Clearwater, Florida – Phone: 727-595-1611 FAX: 727-596-8488 offers the conference \$192/night for Single or Double accommodations. Identify as a conference participant and use code CE29AA.

<http://www.beachsand.com> for information about the Sheraton Sand Key

# **The 43<sup>rd</sup> International Technical Conference on Clean Energy**

**June 3 to 7, 2018**

**Sheraton Sand Key, Clearwater,  
Florida, USA**

**The abstract**

(one page in length),

**required by**

January 15, 2018,

**must be submitted via email.**

Visit

[www.ClearwaterCleanEnergyConference.com](http://www.ClearwaterCleanEnergyConference.com)

for complete conference details



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**ABSTRACT REQUIREMENTS**

The **ONE PAGE ABSTRACT**, required by January 15, 2018, must be submitted via email and include:

- The Proposed Paper with Exact Title and one page of information (no equations and no figures) must summarize the objective and current status of the work; and provide the committee with an accurate scope of the paper. **Please indicate under which Technical Topics this paper falls.**
- Principal Presenter Listing (name, title, company, address, phone, FAX and email). Email addresses are required since this will be the primary mode of communication. Please include Complete Listings for all Co-Authors (name, title, company, address, phone, FAX and email).

The Principal Presenter is the person to whom all correspondence will be sent and who must meet the deadlines and obligations of the conference: making a presentation at the 2018 conference; submitting a manuscript; and paying a conference fee.

The non-refundable registration fee of \$795 is due before January 31, 2018. There is no reimbursement for time spent or expenses incurred in preparing manuscripts or illustrations, or for transportation to, and expenses at the conference.

The Clearwater Clean Energy Conference does not provide financial support to authors. The registration fee covers one technical paper; authors submitting more than one paper must include an additional \$100 per paper.

Notification of acceptance will be made immediately. A manuscript for inclusion in the Proceedings and for distribution on thumb drive (not to exceed 12 pages in length, with illustrative material) is required by **APRIL 16, 2018**.

Instructions for preparation of manuscripts will be sent with letters of acceptance. Presentations will be scheduled in Panels and Technical Sessions, as determined by the Conference Committee. The **ONE-PAGE** abstract should be sent via email to [BarbaraSak@aol.com](mailto:BarbaraSak@aol.com).

**Best Student Paper Award** — Over the years the conference has benefitted from the many excellent papers given by students. To give these exceptional students well-deserved recognition, the Conference Committee awards the best paper from a student with the **Clearwater Clean Energy Conference Best Student Paper Award**. The student will be evaluated in the quality of the paper, grasp of the topic presented and quality of the presentation at the conference. The student must be present to win.

**THE CONFERENCE COMMITTEE** The dedicated efforts and expertise of each Committee member result in the excellent Technical Program offered each year. They reach out to all segments of the energy industry so that the state-of-the-art (and beyond) is presented. Through their hard work, we offer a world-renowned conference each year. This year's Conference Committee members are:

**AEP**, J.J. Letcavits  
**AECOM**, Dr. Guisu Liu  
**Air Liquide**, Bhupesh Dhungel  
**Arizona State University**  
 Dr. Klaus S. Lackner  
**The Babcock & Wilcox Company**  
 Prassana Seshadri  
**Babcock Power Inc.**, Bonnie Courtemanche  
**Boiler Combustion & Emissions Control Consultant**, Dr. Edmundo R. Vasquez  
**Brigham Young University**  
 Prof. Bradley Adams and Prof. Andrew Fry  
**CANMET Natural Resources Canada**  
 Dr. Ligang Zheng  
**Chalmers University of Technology**  
 Prof. Klas Andersson  
**Consultant**, Gerry Hesselmann  
**Covanta**, Alan Paschedag  
**CSIRO**  
 Dr. Louis Wibberley and Dr. David Harris  
**Electric Power Research Institute**  
 Horst Hack  
**Électricité du France**, Mathieu Insa  
**Energy & Environment**  
 Prof. Dr.-Ing. Klaus R. G. Hein (Chairman Emeritus)  
**Energy & Environmental Research Center, University of North Dakota**  
 Christopher J. Zygarlicke and Josh Stanislawski  
**Fuel Tech**  
 Chris R. Smyrniotis  
**Fuels and Combustion Consultant**,  
 David Tillman  
**Gas Technology Institute**, Howard Meyer  
**GE – Alstom Power Inc.**, Frederic Vitse  
**Government Contracting Specialists, LLC**  
 Philip W. Winkler  
**IEA Clean Coal Centre**  
 Dr. Andrew Minchener  
**ION Engineering**, Dr. Erik Meuleman  
**Korea Advanced Institute of Science and Technology**, Assoc. Prof. Jeong Ik Lee  
**KeyLogic Systems Inc.**, Massood Ramezan  
**Lehigh University**, Dr. Edward K. Levy  
**Massachusetts Institute of Technology**  
 Dr. Janos M. Beer, Professor Emeritus

**Mitsubishi Hitachi Power Systems Americas, Inc.**  
 Dr. Song Wu, and Robert Nicolo  
**Mitsubishi Hitachi Power Systems Europe GmbH**, Gosia Stein-Brzozowska  
**Monash University**  
 Dr. Sankar Bhattacharya  
**Northeastern University**  
 Dr. Yiannis A. Leventidis  
**Ohio University**, Dr. Gerardine G. Botte  
**Ontario Power Generation**, Les Marshall  
**Pennsylvania State University**  
 Bruce G. Miller  
**Praxair, Inc.**  
 Dr. Lawrence E. Bool III (Co-chair)  
**Reaction Engineering International**  
 Kevin Davis  
**Ruhr-University Bochum, Department of Energy Plant Technology**, Prof. Viktor Scherer  
**Somerset Pty Ltd.**, Dr. Dave Osborne  
**Southern Illinois University**  
 Dr. Joseph Hirschi  
**Tampa Electric Company**  
 Yogesh M. Patel and Byron Burrows  
**Technische Universität Hamburg-Harburg**  
 Prof. Dr.-Ing. Alfons Kather  
**The University of North Carolina at Charlotte**,  
 Dr. Nenad Sarunac  
**Tsinghua University**, Dr. Yao Qiang  
**U.S. Geological Survey**  
 Ronald H. Affolter, Emeritus  
**University of Alberta**, Dr. Rajender Gupta  
**University of Kentucky**, Dr. Kunlei Liu  
**University of Maryland**, Dr. Ashwani Gupta  
**University of Newcastle**, Prof. Terry Wall  
**University of South Carolina**  
 Prof. Jochen Lauterbach  
**University of Utah**, Prof. Eric Eddings,  
 Prof. JoAnn Lighty and Kevin Whittey  
**U.S. Department of Energy, National Energy Technology Laboratory**,  
 Dr. Ronald Breault (Co-Chair)  
**Wroclaw University of Technology, Poland**  
 Halina Pawlak-Kruczek Ph.D., D.Sc., and Dr. Janusz Lichota



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*Endorsing Organizations:*

- **American Institute of Chemical Engineers**
- **American Public Power Association**
- **CANMET Natural Resources, Canada**
- **China Coal Research Institute**  
**Ministry of Coal, People's Republic of China**
- **Edison Electric Institute**
- **Export Assistance Center, U.S. Commercial Service**
- **International Energy Agency: Coal Research**
- **Japan Coal Energy Center (JCOAL)**
- **National Mining Association**
- **National Rural Electric Cooperative Association**
- **Ohio Coal Development Office**
- **U. S. Geological Survey**

**The Clearwater Clean Energy  
Conference**

**Deadline for Abstracts:  
January 15, 2018**

*Post Office Box 1130*

*Louisa, VA 23093*

*540-603-2022 (Office)*

*240-751-0900 (Cell)*

*[www.ClearwaterCleanEnergyConference.com](http://www.ClearwaterCleanEnergyConference.com)*

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