

COGENCanada CHP Association Edmonton Seminar 2012 Program

Day 1: Tuesday, May 8, 2012

08:00 Breakfast

08:30 [Seminar Introduction](#)

Subash Vohra, COGENCanada CHP Association

08:45 [Keynote Speaker](#)

Mr. Ernie Hui, Deputy Minister of Environment and Water

09:15 [Cogeneration Basics](#)

Subash Vohra, COGENCanada CHP Association

- Objectives and advantages of Cogeneration configurations
- High Grade and Low grade heat, steam & hot water
- Topping systems, Bottoming systems.
- Efficiency vs. exhaust temperature
- Use of supplemental heat input (duct burners)
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10:00 Break [sponsored by Solar Turbines of Canada](#)



10:30 [Gas Turbines for Cogeneration](#)

Manfred Klein, National Research Council (NRC)

Basic designs

- Aeroderivative and Industrial models
- Emissions and Efficiency
- Applications

11:15 [Internal Combustion Engines for Cogeneration](#)

Frederic Lebel, Gas Drive Global

- Engine technology and efficiency evolution
- Fuels suitable for lean burn technology
- Emission controls for modern engine design
- Jenbacher engines and cogeneration packages

12:00 Lunch

13:00 [Gas Turbine design elements for high efficiency and long life](#)

Alex Davey, Siemens Energy Inc.

- Turbine and compressor clearances
- Metallurgy and Blade cooling techniques
- Cleanliness, water washes
- Gearboxes and turbine speeds
- Avoiding catastrophic failures
- Recommended Maintenance practices and outage planning

13:45 [HRSG and OTSG design elements for high efficiency and long life](#)

Landon Tessmer, IST

- Optimizing Heating Surface Arrangements and Pinch Points
- Material selection (tubes, tube support plates, fins, and liners)
- Gas-side flow distribution and pressure loss
- Water chemistry

14:30 Break [sponsored by ATCO Power](#)



15:00 [Opportunities for Co generators in the Alberta Market](#)

Biju Gopi, Alberta Electric System Operator (AESO)

- structure of the Alberta energy market
- supply/demand/price trends
- ancillary services market opportunities

15:45 Case Studies

1. [Dow Chemical, Sarnia -The Total Energy Plant](#)

Joseph P. Zanyk, J. P. Zanyk and Associates Energy Consultants

- design elements for high reliability and efficiency
- first three year after start-up – problems and learnings
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2. [University of Calgary Cogeneration Project](#)

Murray Sloan, University of Calgary

- technical Details, Design, Construction and Commissioning
- economics and Savings
- environmental Impacts and Emissions

16:45 [Day One Wrap-Up](#)

Subash Vohra, COGENCanada CHPAssociation

17:00 Networking reception [sponsored by Siemens Energy Inc.](#)

SIEMENS

Day 2: Wednesday, May 9, 2012

8:00 Breakfast

8:30 [Oil Sands Development Group 2012 Cogeneration Report](#)
Jonathan Carlson, MEG Energy

- Key Observations and Summary
- Co-Generation Trends in the Oil Sands
- 5 and 10 Year look into Future

9:15 [Noise and Vibration Issues with Cogeneration Facilities](#)
Vince Gambino, Aercoustics Engineering Ltd.

- Environmental Noise Permitting, Acoustic Performance Verification and Commissioning of the AbitibiBowater Cogeneration Plant, Thorold, Ontario
- Investigation and Resolution of Flow Induced Noise and Vibration in Heat Recovery Steam Generators
- Active Noise Cancellation of Wet Surface Air Condensing fans at the Ottawa Health Sciences Cogeneration Plant

10:00 Break

10:30 [Specification and Purchase of a Combustion Turbine Generator Unit](#)
Joseph P. Zanyk, J. P. Zanyk and Associates Energy Consultants

- What do you need to specify for operating availability, reliability and maintainability for a successful plant operation.
- The effect on performance of site conditions such as elevation, ambient temperature, Relative humidity and inlet and exhaust pressure drop.
- The need for online performance monitoring for efficiency, reliability and maintenance.

11:15 [Performance Evaluation of Cogeneration Plants](#)
Stan Danov, Suncor Energy

- Performance testing protocol
- Data collection and analysis
- Efficiency, Heat Utilization, HRSG Performance
- Emission Performance

12:00 Lunch

13:00 [Pre-Engineered CHP Systems](#)
Jan Buijk, European Power Systems

- System Reliability Improvements

- Life Cycle Cost Reduction
- System Optimization in response to varying Market Conditions

13:45 [The Economics of Co-generation, \(Panel Discussion\)](#)

New Electrical Energy Supply Decisions

Vittoria Bellissimo, Industrial Power Consumers Association of Alberta (IPCAA)

2. An overview of the risks and opportunities associated with new electricity supply decisions

3. Implications of transmission cost avoidance on behind-the-fence (and co-generation) economics

4. Implications of gas pricing on behind-the-fence (and co-generation) economics

[The GE Frame 7EA, The Workhorse of the Oilsands](#)

Jonathan Carlson, MEG Energy

5. Approximate incremental cost to add a Frame 7EA (85 MW nominal output) and upgrade the substation to 240KV over the cost of steam from OTSGs (once through steam generators).

6. Approximate annual operating budget for a 7EA over the first initial 6 year maintenance period.

7. Characteristics of the 7EA winter and summer production and annual expected MWhr output.

[The Alberta Government Perspective](#)

Kathryn Wood, Alberta Energy

14:45 Break

15:15 [The Case for Eco-Urban Zones](#)

Ian Bush, COGENCanada CHP Association

- Infrastructure sharing
- Resource sharing
- Efficiencies
- Eco-urban zones

16:00 [Dow Fort Saskatchewan Co-Gen Overview](#)

Dwayne Aasberg, Dow Chemical Canada

- Brief history of Dow's Fort Saskatchewan site (how'd we get here?)
- Technical overview of co-generation assets (what'd we got?)
- Recent challenges and new opportunities (where we goin'?)

16:45 [Day 2 and seminar Wrap-up](#)

Subash Vohra, COGENCanada CHP Association

Day 3: Thursday, May 10, 2012

08:00 Breakfast

9:00 Bus leaves for Tour – Dow Chemical, Fort Saskatchewan

12:00 Bus returns to hotel - Seminar over

Exhibitors



Statistics and Control Inc. **Statistics & Control, Inc.**

Improving enterprise
sustainability with
artificial intelligence
for process control.



Camfil and Farr Inc.



Cummins Power Generation



Wood Group GTS