



2019 VALUE OF BIOGAS WEST TUESDAY JANUARY 15TH

Coast Coal Harbour Hotel (Vancouver, B.C.)

BIOGAS OPERATOR'S FORUM

Hear first-hand what it is like to operate a biogas plant, including important issues to consider when planning your own biogas plant, and key lessons learned from those with years of hands-on, day-to-day experience owning and operating their own biogas plants.

Breakfast & Registration (7:30 – 8:30 am)

Registration opens at 7:30am. Breakfast and coffee will be served until 8:30am.

Biogas Operator's Forum (8:30 – 10:00 am)

Hear what it is really like to run a biogas plant from experienced biogas plants operators.

Coffee Break (10:00 – 10:30 am)

Biogas Operator's Forum (10:30 – Noon)

Hear what it is really like to run a biogas plant from experienced biogas plants operators.

Lunch (Noon – 1:00 pm)

Biogas/RNG Facility Tours (1:00 – 5:30 pm)

Ever wanted to see what a biogas plant looks like? Now is your chance. Sign-up for a site visit to one of the following biogas plants.

Fraser Valley Biogas: B.C.'s first on-farm biogas plant, and the first biogas plant in Canada to inject renewable natural gas (RNG) into the pipeline, Fraser Valley Biogas (FVB) has been operational since 2010. Today, FVB co-digests dairy manure from several farms with local food waste to produce 90,000 GJ/year of RNG. With plans for future expansion, FVB may soon become one of Canada's largest on-farm biogas plants.

Note: All attendees on the Fraser Valley Biogas tour should wear clothing and footwear appropriate for an on-farm tour in early January. This tour is held entirely outside.

Surrey Biofuel Facility: Located in Port Kells, the recently built Surrey Biofuel Facility will convert 115,000 tonnes/year of residential organic waste into approximately 120,000 GJ/year of renewable natural gas (RNG). This RNG will be used to fuel the City's natural gas powered waste collection vehicles, and provide a renewable fuel source for the City's new District Energy System.

*Note: All attendees on the Surrey Biofuel Facility tour **MUST wear steel toe boots**. Anyone without steel toe boots will not be allowed to enter the Surrey Biofuel Facility and must stay outside.*

Networking Reception (5:30 – 7:30 pm)

All attendees are invited to the Value of Biogas West networking drinks reception. Network with likeminded individuals while enjoying a few drinks and snacks.



2019 VALUE OF BIOGAS WEST WEDNESDAY JANUARY 16TH

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CONFERENCE AGENDA

Join us for a full day program covering biogas/RNG markets, challenges and opportunities, research and development, case studies, digestate management and more.

Breakfast & Registration (7:30 – 8:30 am)

Registration opens at 7:30am. Breakfast and coffee will be served until 8:30am.

Welcome Introduction (8:30 – 8:50am)

Canadian Biogas Association: Achievements and Future Direction (8:50 – 9:10 am)

With a vision of developing the biogas industry to its fullest potential, the Canadian Biogas Association (CBA) is the collective voice of Canada's biogas industry. Learn more about work the CBA is currently undertaking, and take this opportunity to help shape the CBA's future direction.

- **Jennifer Green**, *Canadian Biogas Association*.

RNG Assessment & Market Transition (9:10 – 10:20 am)

RNG market assessment and transition is important. Join us for presentations on development and promotion of RNG in Washington State, success of switching from diesel to natural gas fleets, and lessons learned transitioning from a compressed to liquefied biogas market in Sweden.

- An Expanded Look at RNG Development in Washington State - **Jim Jensen**, *WSU Energy Program*;
- Cost and Enviro Benefit of NGVs in Pacific Northwest - **Connor Reiten**, *NW Alliance for Clean Transportation*; and
- Transitioning from Compressed to Liquefied Biogas Market: Lessons Learned from Sweden - **Gustav Rogstrand**, *Research Institutes of Sweden*.

Coffee Break (10:20 – 10:50 am)

RNG Opportunities for Pulp Mills (10:50 – 12:00 pm)

Pulp mills consume large amounts of fossil fuels and produce large volumes of organic waste. This should make them ideal candidates for biogas and other renewables. Attend this session to hear more about the potential for turning pulp mill waste into biogas, and the opportunity of using indirect gasification for production of renewable gas.

- Anaerobic Digestion of Foul Condensate Wastewater in Kraft Pulp Mills - **Alex Hayes**, *InnoTech Alberta*;
- Modeling the Potential for Biogas Production at a Pulp Mill – **TBD**, *Research Institutes of Sweden*; and
- Renewable Syngas for use in Pulp Mill Lime Kilns - **Paul Watkinson**, *Highbury Energy Inc.*

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RNG in B.C. (12:00 – 12:30 pm)

As the first utility in North America to offer an RNG program to its customers, and as a key player in B.C.'s growing RNG market, FortisBC is heavily involved in everything RNG. FortisBC will discuss their recent Request for Expressions of Interest for Biomethane and Biogas supply. They will also provide insights on developing RNG supply and offer case studies from a range of sectors.

- **Scott Gram**, *FortisBC*.

Lunch (12:30 – 1:45 pm)

Breakout Session #1 (1:45 – 3:20pm)

RNG at Wastewater Treatment Plants

While anaerobic digestion is commonly used at wastewater treatment plants, biogas production is often flared. Join us after lunch to hear about research into the use of thermochemical hydrolysis processes, temperature-phased anaerobic digestion, and biochar to enhance biogas production, as well as the use of new technology to clean biogas for production of renewable heat and electricity.

- Biosolids Energy Optimization and Recovery with Thermochemical Hydrolysis Process - **Jerod Swanson**, *Centrisys/CNP*;
- Influence of Temperature Phased Anaerobic Digestion on Stabilization of Municipal Wastewater Sludge - **Bitia Nazyab**, *UBC*; and
- Biochemical Methane Potential Assays for Biochar Selection in Anaerobic Digestion - **Caroline Cimon**, *UBC Okanagan Campus*.

BCBN's Nutrient Recovery Challenge – Enhancing the RNG Supply Chain

Digestate management is a key component of any agricultural biogas plant. Learn about the B.C. Bioenergy Network's Digestate Challenge and how it is helping to drive development of technologies for lower-cost digestate management.

- BCBN's Nutrient Recovery Challenge - **Scott Stanners**, *B.C. Bioenergy Network*;
- Technology Development for Nutrient Recovery from Anaerobic Digestate using Biopolymer - **Niloofar Abdehagh**, *CHFour Biogas Inc.*;
- Digestate Harvesting...Bulk Cake to Granules, a Value Adding Journey! - **Chris Bush**, *Trident Processes*; and
- Introducing MagPi to Harvest Phosphorus and Nitrogen from Liquid Wastes - **Rob Stephenson**, *Muddy River Technologies*.

Break (3:20 – 3:50 pm)

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Breakout Session #2 (3:50 – 4:30pm)

Municipal Dry Batch Digestion Case Studies

High solids, dry batch anaerobic digestion plants are increasingly being used by municipalities to convert residential waste into biogas and digestate. Join us for the final session of the day to hear about two dry batch biogas plants in Edmonton, Alberta, and San Luis Obispo, California.

- A Case Study- Edmonton AB Conversion of Organic Fraction of MSW - **Douglas Renk**, *BIOFerm Energy Systems*; and
- San Luis Obispo. First HZI and Newest AD Operation in California - **Ricardo Hamdan**, *Hitachi Zosen Inova*.

Agricultural Biogas Plant Assessment & Optimisation

While beneficial for biogas production, digesting dry manure and straw can be difficult. Furthermore, knowing if your farm could be a suitable candidate for a biogas plant is challenging. Join us for the final session of the day to hear about dry manure and straw pre-treatment options, and learn about the B.C. Ministry of Agriculture's On-Farm Biogas Handbook.

- Pre-treatment of Bedpack, Horse, Poultry Manure and Straw for Anaerobic Digestion. **Gustav Rogstrand**, *Research Institutes of Sweden*.
- B.C.'s On-Farm Biogas Handbook - **Matt Dickson**, *Hallbar Consulting Inc.*

Wrap-up (4:30 – 4:45 pm)

Join us for final wrap-up of the day and to learn about the upcoming Value of Biogas East conference in Toronto (March 21st and 22nd).