ALBERTA AND SASKATCHEWAN’S CLEAN ENERGY TRANSITION
Compliance Strategies and New Development Opportunities

September 26-27, 2016
Delta Calgary Downtown
Calgary, AB

Pre-Conference Workshop
ALBERTA POWER MARKETS 101
Monday, September 26, 2016
OVERVIEW

This conference will explore the impacts of new climate policies and programs being implemented in Alberta and Saskatchewan to help the provinces reach their 2030 renewable generation targets, specifically:

- The Climate Leadership Plan and Alberta’s Renewable Electricity Program (REP) currently being designed by the Alberta Electric System Operator (AESO) to obtain 30% renewables
- Saskatchewan’s 50% renewable portfolio standard by 2030

This conference is designed for utilities, independent power producers, and other entities subject to these programs as they consider preparation strategies and adjustments to reduce the impact of power generation on climate change. It will draw on the expertise of industry professionals and experts working in the space to discuss strategies for optimizing compliance, and evaluate the various methods and resources necessary to generate a reliable and low carbon supply mix for Alberta and Saskatchewan. The program will also assess the impacts and preparation strategies for the incumbent power industry, as well as examine new renewable development and environmental market opportunities resulting from the provincial carbon and renewable policy regimes.

LEARNING OUTCOMES

- Discuss how existing offsets and renewable energy credits (RECs) may be transitioned under new policy regimes
- Evaluate updates and implications of new climate and renewable policies and programs in Alberta and Saskatchewan
- Assess carbon business risks on assets, operations, and short and long-term fuel choice
- Identify pathways for pro-active and reasonable carbon risk management
- Evaluate opportunities to capitalize on emerging offset markets
- Review opportunities for low-carbon coal generation through wood pellet co-firing
- Identify engineering techniques for modifications and conversions for wood pellet co-firing in coal plants
- Analyze the policy landscape for new renewable development in Alberta and Saskatchewan
- Evaluate an optimal future resource mix for Alberta and Saskatchewan
- Review technology-specific market trends for wind, solar, and energy storage
- Review business perspectives on the renewable development market and associated financing structures needed
- Assess how Alberta and Saskatchewan can strategize for increased renewable generation on the electric grid
- Identify best practices for collaborating with First Nations and cultivating development partnerships
- Assess practical tips for consultation and relationship lessons for Aboriginal consultation
AGENDA

Monday, September 26, 2016

12:30 – 1:00 p.m.  Registration
1:00 – 1:05 p.m.  Welcome and Overview

I. Setting the Stage


This session will discuss the emission offsets and renewable energy credit (REC) markets and compliance mechanisms that have been in place in Alberta since 2007. It will describe industry strategies for compliance as a result of the Specified Gas Emitters Regulation – which put a price on carbon dioxide emissions in Alberta since 2007 and was renewed to 2017 with increased stringency – and identify how incumbent Alberta industries have been effectively complying with these traditional markets. It will also provide context and grounding for later sessions that will speculate how these traditional credits and compliance mechanisms might be treated under the new policies. Specific topics include:

- Specified Gas Emitters Regulation overview and compliance options
- Dynamics of Alberta’s Emission Regulation and Trading System (ERTS) since 2007
- Ownership and value of emission offsets in Alberta — how it’s worked so far
- Renewable energy credits (RECs) in Alberta — generation, ownership, and market dynamics
- Current treatment of existing renewable assets and associated credits
- Economic impact of offsets and trading RECs since 2007
- Summary of offset and REC pricing and market dynamics since 2007
- Industry strategies for managing GHG exposure

- Braydon Boulanger, Senior Market Strategist – Carbon Risk & Trading, TransAlta
- Andrew Hall, Director – Environmental Products & Markets, C6 Emissions Corp

2:15 – 2:30 p.m.  Afternoon Break

2:30 – 3:40 p.m.  Alberta and Saskatchewan’s Clean Energy Transition: Policy and Program Update

Alberta and Saskatchewan have two of the highest carbon footprints in Canada, and transitioning to a low carbon future is no easy task. Alberta plans to phase out all coal power usage by 2030, imposing a carbon tax beginning in 2017 and placing a limit on carbon pollution from the oil sands industry. The provincial government will reinvest the carbon tax revenues (estimated at $2.5 billion/year) into renewable energy and efficiency programs to help offset price increases for customers, and assist the province in meeting its goal of 30% renewables by 2030. Saskatchewan is already reducing its coal generation emissions through carbon capture and storage (CCS) technology. The province’s crown corporation SaskPower — the largest GHG emitter — has also committed to increasing its renewable energy generation capacity from 25% today to 50% by 2030 through investments in wind, solar, hydroelectric and geothermal technologies. This session will explore how each province is strategizing to meet its ambitious goals climate and renewable goals, providing updates on their program designs and strategies. It will also discuss anticipated challenges and consider how the programs will influence electricity prices on consumers and key industries.

Moderator: Kris Aksomitis, Director, Power Advisory LLC
- Tim Schuster, Director – Independent Power Producer Development, SaskPower
- Alison Thompson, Chair & Co-Founder, Canadian Geothermal Energy Association (CanGEA)

3:40 – 4:00 p.m.  Understanding the Approval Process for New Renewable Projects

This session will discuss the Alberta Utilities Commission’s process for permitting and approving new renewable energy projects, highlighting tips on how to get a project approved.

- Wade Vienneau, Executive Director – Facilities, Alberta Utilities Commission
**AGENDA**

**Monday, September 26, 2016 (Continued)**

4:00 – 5:30 p.m.  **Carbon Business Strategies: Offset Optimization and Carbon Compliance Mechanisms**

All players in the power industry face increasing business and financial risks associated with carbon, at the provincial level in Alberta and Saskatchewan, as well as at a Federal level with regard to the new Canadian government’s commitment to taking action on climate change. This session will consider how to merge the concepts of carbon risk with asset valuation and financial risk assessment in relation to the assessment of carbon risk impacts on assets, operations, and short and long-term planning. It will identify best strategies for carbon compliance, and also explore future market opportunities with regard to offsets. Specific discussion points will include:

- Evaluating opportunities to capitalize on the future offset market in Alberta
- Optimizing offset and Renewable Energy Credit (REC) assets and investment/trading strategies
- Measuring business exposures, mitigating risks and developing a compliance strategy
- Incorporating carbon into long-term corporate strategy
- Preparing for greater compliance costs and actual emission reductions
- Dealing with carbon programs in the mobile market

- **Andrew Hall, Director – Environmental Products & Markets, C6 Emissions Corp**
- **Yvan Champagne, President, Blue Source Canada**
- **James Renouf, Director of Corporate Strategy and Environmental Portfolio, Capital Power**

**Tuesday, September 27, 2016**

7:30 – 8:00 a.m.  **Continental Breakfast**

8:00 – 9:20 a.m.  **Wood Pellet Co-Firing Opportunities: Low-Carbon Coal Generation**

The process of de-carbonizing Alberta and Saskatchewan’s electric grids will be costly and challenging. Thus, a pragmatic pathway and solution set is necessary. As the provinces develop more renewable generation, it is important to assess opportunities for modifying coal to be more sustainable, to avoid costly stranded assets and ensure there will be a reliable base-load power in the supply mix. Wood pellet co-firing or full firing is a proven technology that is already being implemented on a wide scale in plants all over Europe, England and Japan to achieve lower carbon footprints. This session will discuss how a wood pellet strategy can support Alberta and Saskatchewan’s climate goals by utilizing existing, pulverized coal station assets, and help reduce their combined carbon footprint by up to 90%. Specifically, it will address:

- Quantifying the carbon benefits of wood pellet co-firing or full firing
- Evolution of wood pellet co-firing and dedicated wood pellet firing
- Review of fuel options — chips, pellets (black vs white), wood, agriculture residues, municipal sludge and why pellets are the optimal solution that results in no de-rating and no loss of reliability
- Logistics considerations — how Alberta and BC can supply millions of tonnes of pellet fuel and eliminate fuel security concerns
- Overview of total modification or conversion costs and operating costs with estimates of the incremental cost per MWh at various pellet firing rates from 3% to 100%
- Opportunities for wood pellet co-firing to support Alberta and Saskatchewan’s climate goals and grid reliability

**William Strauss, President, FutureMetrics**

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Tuesday, September 27, 2016 (Continued)

9:20 – 9:35 a.m.  Morning Break

9:35 – 10:45 a.m.  Engineering Techniques for Wood Pellet Co-Firing in Coal Plants: Modifications and Conversions

This session will provide an overview of the engineering process involved in modifying and converting coal power plants for wood pellet co-firing or full firing, discussing:

- Cost/benefit analyses for co-firing and conversions in existing plants
- Co-firing basics — how and why pulverized coal power plants can use wood pellets
- Technology overview for modifications and conversions — fuel storage, pulverizers, conveying systems, burners, etc.
- Operating considerations — what is the same, what is different, how to manage the differences
- Lessons from abroad — co-firing case-studies from Europe, England, and Asia

- Graham Welford, Director, Doosan Babcock
- Preben Messerschmidt, Project Director, Ramboll Energy
- Paul James, Director–Energy Development, Ramboll Energy

10:45 – 11:05 a.m.  Wood Pellets in Canadian Power Stations — Ontario Power Generation (OPG) Conversions

Ontario case-study — details of the pellet conversion at the Atikokan and Thunder Bay generating stations

- Brent Boyko, Director – Biomass Business Development, Ontario Power Generation (OPG)

III. Renewable Development and Integration

11:05 – 11:45 a.m.  Policy Landscape for Renewable Development

- What is the outlook for new renewable development?
- Technology specific market trends — assessing markets for storage, wind and solar
- Relationship between broader policy landscape and specific renewable technologies
- Evaluating an optimal future resource mix for Alberta and Saskatchewan

- Patrick Bateman, Director – Market Intelligence & Research, Canadian Solar Industries Association (CanSIA)
- Evan Wilson, Regional Director – Prairies, Canadian Wind Energy Association (CanWEA)

11:45 a.m. – 12:45 p.m. Group Luncheon

12:45 – 2:15 p.m.  Business Perspectives on the Renewable Development Market and Associated Financing Structures

- Evaluating new renewable generation capacity needed in Alberta and Saskatchewan to meet renewable targets
- Considerations for renewable development and investment in Alberta and Saskatchewan
- Assessing opportunities for small-scale, community, and utility-scale solar energy projects
- Assessing opportunities for large wind projects (50 MW and above)
- Identifying project risks, permitting and financing challenges
- Optimizing financial packages for new renewable projects — where are the opportunities?

Moderator: Thomas Timmins, Partner & Leader-Renewable Energy Group, Gowling WLG
- Dan Balaban, President & CEO, Greengate Power Corporation
- Michael Crawley, Executive Vice President, Northland Power
- David Kelly, CEO, SkyFire
- Paula McGarrigle, Managing Director, Solas Energy Consulting, Inc.
AGENDA

Tuesday, September 27, 2016 (Continued)

2:15 – 3:30 p.m.  Preparing the Grid for Higher Renewable Penetration
Increased renewable generation creates new challenges on the electric grid with regard to variable
generation, congestion, and reliability issues. Thus, siting and integrating new renewable generation –
especially large-scale wind generation – is a challenging task that requires a lot of planning, preparation and
analysis. This technical session will discuss how Alberta and Saskatchewan can strategize for an optimized,
balanced grid that adequately integrates new wind generation without compromising reliability. Specifically,
this session will evaluate:

• Impacts to the province’s electric grid, transmission system, and market operations as a result of new
renewable generation coming online
• Identifying and dealing with current and anticipated areas of congestion
• Anticipated investments necessary to address transmission needs and constraints
• Potential impacts and changes needed to current grid and market operation practices
• Considerations for correlating renewable generation sites to avoid congestion on the grid
• Short term wind forecasting for Alberta using site specific data
• Anticipated changes to market roles and associated IT systems to integrate wind generation in Alberta
• ASEO’s work with stakeholders and industry groups to develop long-term wind integration
- Representative, AltaLink
- Alan Ross, Partner, Borden Ladner Gervais (BLG)

3:30 – 3:45 p.m.  Afternoon Break

3:45 – 4:30 p.m.  Collaborating with Indigenous Communities: Creating Good Relations and Development
Partnerships
This session will explore opportunities and considerations for working with Indigenous communities in the
context of new renewable development projects in Alberta and Saskatchewan, focusing on NextEra Energy,
Inc.’s experience working with communities in Canada to jointly develop renewable resources. It will discuss
challenges and opportunities the company has encountered and explore lessons learned as well as best
practices for working with communities in this capacity, such as:

• Key considerations for consultation and engagement for electricity transmission and generation
• Building relationships for mutually beneficial projects — in government, the private sector and among
Indigenous organizations and remote communities
• Challenges to be met — resources, capacity, and business relationships required to get things going
• Engagement advisory services and consultation support for communities, proponents and government
officials
• Infrastructure issues facing communities in Alberta and Saskatchewan
- Jennifer Tidmarsh, Director – Aboriginal Relations, NextEra Energy Resources

4:30 – 5:30 p.m.  Practical Guide to Consultation and Relationship Lessons Indigenous Communities Consultation
This session will focus on practicalities of Aboriginal consultation with Indigenous communities based on
processes experienced by the presenters. Specifically, it will discuss and evaluate:

• Triggers for consultation
• Forums for consultation
  o stand-alone consultation
  o consultation as part of a regulatory or environmental assessment process
• Identifying parties and other first steps in consultation
• Best practices for engagement
• Consultation by different parties
  o Crown, municipalities, tribunals, communities themselves
  o Common challenges and approaches to finding solutions to them
• Funding consultation and relationship building
• Layering UNDRIP and FPIC onto the Canadian constitutional framework for consultation
  o Evaluating real or “practical” changes in the field
- Indigenous Community Representative
- Adam Chamberlain, Partner, Borden Ladner Gervais

5:30 p.m.  Conference Adjourns
OVERVIEW

Alberta’s decision to phase out its coal-fired power plants will require that up to 30% of energy originate from renewable energy, and that over 5000 MWs of gas-fired generation will be constructed in the province. This workshop will explain the fundamentals of Alberta’s power market for new entrants into that market, providing context to its unique structure of combined competitive and regulated businesses. Attendees will gain a holistic understanding of Alberta’s wholesale market: its history and why it is designed as it is, key players and groups involved, and its overall functional and operational structure. The workshop will also consider how new policies currently under development — specifically, the Climate Leadership Plan and Alberta’s Renewable Electricity Program (REP) being designed by the Alberta Electric System Operator (AESO) — will fit within Alberta’s power market, or could potentially impact its structure and operations. This program will be beneficial to those who are new to Alberta’s electricity industry and assessing the business opportunities and the associated risks involved, as well as those who are already participating in the Alberta market but who would like more perspective and clarity on how it all works in Alberta.

LEARNING OBJECTIVES

- Review the history and operational structure of Alberta’s power market
- Identify key regulatory and industry agencies, regimes and protocols
- Review the functions and operations of Alberta’s wholesale market and electric grid
- Discuss business, financial, regulatory and legal considerations for developing new electricity projects in Alberta
- Evaluate implications of emerging environmental policies within the context of Alberta’s power market structure

AGENDA

8:00 – 8:30 a.m.  Registration and Continental Breakfast
8:00 — 11:45 a.m. Workshop Timing

History of Alberta’s Energy Market
The Current State of Generation (Thermal and Renewable) in Alberta
• Existing projects
• Proposed projects
The Renewable Energy Opportunity in Alberta
Fundamentals of Alberta’s Merchant Wholesale Energy Market
• Design and structure
• Regulatory regimes and agencies
• Key industry players
• Operations and functions
Alberta’s Electric Grid
• Regulated transmission businesses
• Distribution wire businesses
Alberta’s Climate Change Strategy
• Carbon levy
• Coal phase-out
• Renewable procurement
Considerations for Developing Power Projects
• Siting
• Permitting, regulatory and interconnection process
• Distributed and microgeneration opportunities
• Collaborating with Alberta’s First Nations
• Collaborating with electric cooperatives
• Collaborating with municipalities
PRE-CONFERENCE WORKSHOP:
ALBERTA POWER MARKETS 101
Monday, September 26, 2016

WORKSHOP INSTRUCTORS

Kent Howie / Partner / Borden Ladner Gervais (BLG)

Kent Howie is a lawyer and a chartered accountant who began his career as a tax lawyer, but who now practices corporate commercial law in the firm’s Calgary office. He acts for a broad range of clients in the energy and electricity sectors, with a particular focus on the development of new, or the acquisition of existing, energy and electricity projects. Mr. Howie has experience advising clients on legal matters related to liquefied natural gas, oil sands, natural gas storage, refinery/upgrader, pipeline and offshore oil projects. He has also acted as lead counsel with respect to a number of electricity projects, including large hydro, coal, natural gas, solar, wind and geothermal projects in various parts of Canada.

Paula McGarrigle / Managing Director / Solas Energy Consulting, Inc.

Paula McGarrigle is a Managing Director at Solas Energy Consulting. She has more than 20 years of experience in the energy sector in North America. The majority of her experience has been in the renewable energy sector. She is the co-founder of Solas Energy Consulting. Her experience includes project development, climate change, business development, and strategic planning. Ms. McGarrigle was previously the head of Shell Wind Energy for Canada, and started the Suncor Alternative and Renewable Energy group. She is a member of APEGA and the Canadian Wind Energy Association (CanWEA) and the Canadian Solar Industry Association. She was invited by the British High Commission to work on sustainability as part of the 2002 G8 summit, and has been a participant in the National Roundtable on Energy and the Environment (NRTEE).
INSTRUCTIONAL METHODS

Case studies, PowerPoint presentations and group discussion will be used in this event.

REQUIREMENTS FOR SUCCESSFUL COMPLETION OF PROGRAM

Participants must sign in/out each day and be in attendance for the entirety of the event to be eligible for continuing education credit.

IACET CREDITS

EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

EUCI is authorized by IACET to offer 1.0 CEUs for the conference and 0.4 CEUs for the workshop.

EVENT LOCATION

A room block has been reserved at the Delta Calgary Downtown, 209 4 Ave SE, Calgary, AB T2G 0C6, Canada for the nights of September 25-26, 2016. Room rates are $199 CAD, plus applicable tax. Call 1- 403-266-1980 for reservations and mention the EUCI program to get the group rate. The cutoff date to receive the group rate is August 25, 2016, but as there are a limited number of rooms available at this rate, the room block may close sooner. Please make your reservations early.

PROCEEDINGS

A copy of the conference proceedings will be distributed to attendees at the event. If you are unable to attend or would like to purchase additional copies, a downloadable link will available two weeks after the conference is complete. The cost per download is $495 CAD. The link includes visual presentations only. Upon receipt of order and payment, the link will be sent to you via email.

NOTE: All presentation sales are final and are nonrefundable.

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Custom sponsorship opportunities are also available. Please contact Maggie Field at 720-988-1250 or mfield@euci.com for more information.
**REGISTRATION INFORMATION**

Mail Directly To:
Electric Utility Consultants, Inc. (EUCI)
4601 DTC Blvd., Ste. 800
Denver, CO 80237

OR, scan and email to: conferences@euci.com

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**PLEASE REGISTER THE FOLLOWING**

☐ ALBERTA AND SASKATCHEWAN’S CLEAN ENERGY TRANSITION CONFERENCE AND PRE-CONFERENCE WORKSHOP: ALBERTA POWER MARKETS 101: $2495 CAD + 5% GST ($2619.75 CAD), EARLY BIRD ON OR BEFORE SEPTEMBER 9, 2016: $2295 CAD + 5% GST ($2409.75 CAD)

☐ ALBERTA AND SASKATCHEWAN’S CLEAN ENERGY TRANSITION CONFERENCE ONLY, SEPTEMBER 26-27, 2016: $1995 CAD + 5% GST ($2094.75 CAD), EARLY BIRD ON OR BEFORE SEPTEMBER 9, 2016: $1795 CAD + 5% GST ($1779.75 CAD)

☐ PRE-CONFERENCE WORKSHOP ONLY: ALBERTA POWER MARKETS 101: $695 CAD + 5% GST ($729.75 CAD), EARLY BIRD ON OR BEFORE SEPTEMBER 9, 2016: $595 CAD + 5% GST ($624.75 CAD)

☐ I’M SORRY I CANNOT ATTEND, BUT PLEASE SEND ME A LINK TO THE CONFERENCE PROCEEDINGS FOR $495 CAD + 5% GST ($519.75 CAD).

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How did you hear about this event? (direct e-mail, colleague, speaker(s), etc.)

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Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before August 26, 2016 in order to be refunded and will be subject to a CAD $295.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of conference cancellation, EUCI’s liability is limited to refund of the event registration fee only. For more information regarding administrative policies, such as complaints and refunds, please contact our offices at 303-770-8800. EUCI reserves the right to alter this program without prior notice.