

---

# BC BIOENERGY NETWORK



**BC Bioenergy  
Network**

PARTNERING FOR  
A GREENER FUTURE

# 2021 YEAR IN REVIEW

---

# ABOUT BC BIOENERGY NETWORK

---

BC Bioenergy Network (BCBN) guides the development of the bioenergy sector in British Columbia as a facilitator of strategic partnerships that attracts investment from private and public sources to advance the production and use of low carbon fuels in the province to displace fossil fuels, spur innovation, and support economic development.



**BC Bioenergy  
Network**

PARTNERING FOR  
A GREENER FUTURE

***Partnering for a Greener Future***

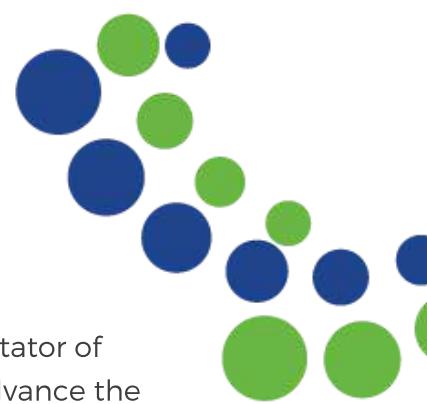
University of British Columbia,  
2337 Lower Mall,  
Vancouver, BC, V6T 1Z4  
604-889-4549  
scott.stanners@bcbioenergy.ca



---

# MORE ABOUT BCBN

---



## WHO

BCBN guides the development of the bioenergy sector in British Columbia as a facilitator of strategic partnerships that attracts investment from private and public sources to advance the production and use of low carbon fuels in the province to displace fossil fuels, spur innovation, and support economic development.

## WHAT

- Identification of Problems and Conceptual Solutions
- Commission Research and Feasibility Studies
- Project Management and Oversight
- Network Building and Event Hosting
- Investment Attraction and Funding Coordination

## WHY

- **Reduce GHG Emissions:** There is global need to reduce GHG emissions and mitigate our effect on the environment.
- **Accelerate Innovation:** There is a need to accelerate the move to lower carbon solutions in transportation and other sectors of the economy.
- **Reach Government Targets:** BCBN has a critical role in supporting the Province of BC toward its 2030 GHG emission reduction targets in CleanBC.
- **Move from Planning Phase to Commercial Scale Operations:** BCBN acts as a catalyst to move projects from the planning phase into commercial deployment at scale, including efforts to attract invest and remove barriers to deployment.

## HOW

- **Strategic Partnerships:** Form strategic partnerships with local, national and international entities to fund purposedriven research and feasibility studies in the low carbon fuels sector.
- **Convene Key Stakeholders:** Convene key stakeholders in the low carbon fuels sector to enable a coalition approach to solving solutions for complex challenges.
- **Project Leadership:** BCBN undertakes projects from initiation to completion that are focused on accelerating the bioenergy sector in BC.
- **Advisor to Government:** Use our knowledge and information from research and project activities to advise government on the strategic direction of the low carbon fuels sector in BC, Canada and internationally to meet GHG reduction targets.
- **Capacity Building and Training Programs:** Develop and facilitate training, education and capacity building programs through workshops, webinars, conference sponsorship, and the West Coast Bioenergy Guild to strengthen the low carbon fuels network in BC and Canada.
- **Event Management:** Plan and host virtualand in-person events to facilitate information exchange related to innovation and policy developments in the bioenergy sector.



# WEST COAST BIOENERGY GUILD SPECIAL GUESTS 2021

WEBINAR

April 13th, 2021



## DAVID BENNETT

Director, Renewable Gas and Low Carbon Fuels for FortisBC

Presentation Topic: "FortisBC Renewable Gas Program Overview, Rethinking BC's Energy Future"

WEBINAR

May 11th, 2021



## DR. BRETT MCLEOD

Pacific Regional Outreach Coordinator, Western Pacific Region, Scientific Research and Experimental Design (SR&ED) Division - Canada Revenue Agency (CRA)

Presentation Topic: "The SR&ED Tax Incentive Program"

WEBINAR

July 13th 2021



## MARK KIRBY

President and CEO of the Canadian Hydrogen Fuel Cell Association (CHFCA)

Presentation Topic: "The Canadian Hydrogen and Fuel Cell Sector"

WEBINAR

September 14th 2021



## JENNIFER LITTLEJOHNS

Program Director, Advanced Clean Energy at National Research Council Canada

Presentation Topic: "Opportunities in Advanced Clean Energy from Negative Value Wastes in Canada"

WEBINAR

November 23rd, 2021



## STEFAN MULLER

President of Vytterra Renewables; and Senior Vice President, Project Engineering at Ensyn Corporation

Presentation Topic: "Accelerating Decarbonization"

# BC SMART LOW CARBON FUELS CONSORTIUM

## Project Title:

**BC Sustainable Marine, Aviation, Rail and Truck Low Carbon Fuels Consortium**



## Consortium Members:



BCBN funded the establishment and growth of the BC Sustainable Marine, Aviation, Rail and Truck (BC SMART) Low Carbon Fuels Consortium. BC SMART leverages industry and government support to develop “software” recommendations such as policy and regulatory measures as well as “hardware” recommendations that identify supply chain and infrastructure to facilitate the production of low carbon transportation fuels in BC.

Nearly 20 organizations including Air Canada, WestJet, Boeing, YVR Airport Authority, CP Rail, CN Rail, and Seaspan executed a memorandum of understanding to collaborate on the decarbonization of the transportation fuels they consume including gasoline, diesel, jet and marine fuels. BC SMART publishes a bi-annual newsletter, hosts theme-driven workshops, and publishes reports that evaluate low carbon fuel options in BC for these sectors.

[Read the Latest BC SMART Newsletter Here](#)

## Latest Webinar:

BC-SMART/IEA Bioenergy Task 39 Virtual Panel Discussion: “Decarbonizing the trucking sector using low carbon-intensive fuels” held on November 22nd, 2021.

[View Recording and Slides Here](#)

BC SMART Low Carbon Fuels Consortium | BC Bioenergy Network | IEA Bioenergy | Task 39 IEA Bioenergy

**“Decarbonizing the Trucking Sector Using Low Carbon Intensive Fuels”**

- David Schick**  
Moderator  
Vice President of the Canadian Fuels Association, Western Division
- Pierpaolo Cazzola**  
Advisor- Energy, Technology and Environmental Sustainability, International Transport Forum (ITF)
- Evan Dacey**  
Fleet Strategy and Asset Management, the City of Vancouver
- Neville Fernandes**  
Vice President, Corporate Affairs and Development for Renewable Energy Group, Inc.
- Don O'Connor**  
President, (S&T) Squared Consulting, Inc.

Monday, 22nd November 2021, 8:30-10:00 PST (17:30-19:00 CET)

# CLEAN FUEL OPPORTUNITIES IN BC'S PULP & PAPER SECTOR

## Project Title:

## Clean Fuel Opportunities in BC's Pulp & Paper Sector (Phases 1, 2 & 3)

BCBN, in partnership with the BC Government, FortisBC and the BC Pulp and Paper Bio-Alliance, identified clean fuel opportunities for BC's pulp and paper sector to diversify revenue streams and decarbonize operations.

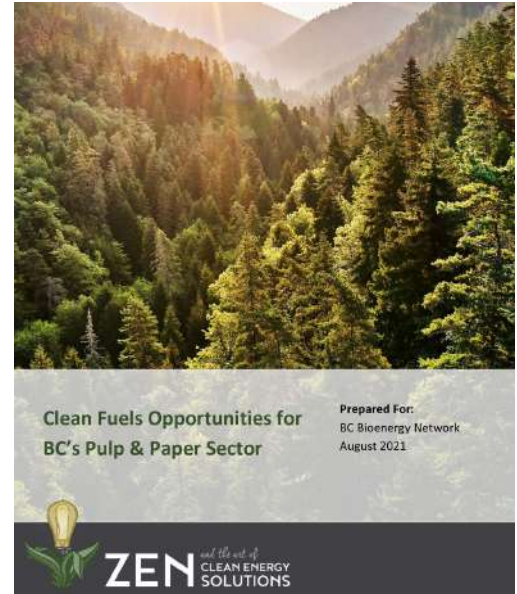
### [Read Phase 1, 2 and 3 Reports Here](#)

The CleanBC Plan set a target of 15% renewable content in the natural gas system in BC by 2030. As the pulp and paper sector consumes 10% of the domestic natural gas supply in BC, it represents a formidable opportunity to lower greenhouse gas emissions by transitioning to cleaner fuels. BCBCN, BC Ministry of Energy, Mines and Low Carbon Innovation, FortisBC and BC Pulp & Paper Bio-Alliance partnered to assess clean fuel opportunities including syngas, renewable natural gas, hydrogen, and lignin.

**Phase 1:** The results of Phase 1 revealed that the displacement of natural gas in lime kilns at pulp mills with syngas provides a favourable business case for decarbonization. Next steps involve conducting a pre-engineering study to evaluate the feasibility of a commercial demonstration plant at a BC pulp mill.


**Phase 2:** The results of Phase 2 demonstrated that the production of hydrogen through electrolysis is the most mature and scalable pathway and can utilize existing cogeneration or grid substation capacity. The business case for hydrogen is positive today if a portion of the fuel can be used in transportation applications, with BC Low Carbon Fuel Regulation (LCFR) credit sale revenues being a key driver. Mills can also become focal points in the emergence of regional hydrogen hubs in BC by producing hydrogen to supply to local transportation networks. Hydrogen hubs are a key element of BC's recently released hydrogen strategy.

**Phase 3:** The results of Phase 3 determined that the production of lignin presents an opportunity to generate an alternative fuel stream by diverting a portion of the mill's black liquor supply to create a dry lignin product that may be used as a combustion fuel in lime kilns. A secondary benefit is decreasing the black liquor load in the recovery boiler which can lead to increased pulp production if the mill is bottlenecked at the recovery boiler. The business case for lignin is dependent on the quantity and properties of the mill's black liquor and the constraints on the recovery boiler. The production of lignin may represent a feasible business with the right market opportunity.




# INAUGURAL BC BIOENERGY SECTOR AWARDS 2021


2021 was the inaugural year of the BC Bioenergy Sector Awards, hosted by BCBN. The awards recognized leaders who have made meaningful contributions to advance bioenergy research, policy, innovation, or sector building in British Columbia. The awards were presented on October 20th, 2021 at the virtual BC Bioenergy Day event.



**BC BIOENERGY  
SECTOR AWARDS**  
OCTOBER 20TH, 2021



**RESEARCHER AWARD**  
**Jack Saddler**  
NSERC Industrial Senior Chair, Task Leader, IEA Bioenergy Task 39 / Professor, Wood Science, UBC



**CHANGEMAKER AWARD**  
**David Bennett**  
Director, Renewable and Low Carbon Fuels, FortisBC



**CHAMPION AWARD**  
**Michael Rensing**  
Director, Low Carbon Fuels Branch, BC Ministry of Energy, Mines and Low Carbon Innovation

## Congratulations to the Winners of the 2021 BC Bioenergy Sector Awards

**Researcher Award 2021** – Professor Jack Saddler, NSERC Industrial Senior Chair, Task Leader, IEA Bioenergy Task 39 and Professor of Wood Science at UBC.

**Changemaker Award 2021** – David Bennett, Director, Renewable and Low Carbon Fuels at FortisBC.

**Champion Award 2021** – Michael Rensing, Director, Low Carbon Fuels Branch, BC Ministry of Energy, Mines and Low Carbon Innovation.

*The Awards were presented for outstanding leadership and contribution to the bioenergy sector in British Columbia.*

# BC BIOENERGY DAY

On Wednesday, October 20th, 2021, BCBN hosted BC Bioenergy Day, a celebration of accomplishments and the presentation of the inaugural BC Bioenergy Sector Awards.

In addition to hearing from the winners of the inaugural BC Bioenergy Sector awards, the online event featured comments from Special Guests including: Doug Hooper, Director, Policy and Regulations, at Advanced Biofuels Canada; David Schick, Vice President of Canadian Fuels Association, Western Division, and Don Roberts, Chair of the Board at Arbios Biotech; plus a surprise musical performance by Pat Guidera, Former Director, Forest Technologies at Alberta Innovates Bio.



**BC Bioenergy Day**

Featuring comments from:

					
<i>Doug Hooper, Advanced Biofuels Canada</i>	<i>David Schick, Canadian Fuels Association</i>	<i>Don Roberts, Arbios Biotech</i>	<i>Jack Saddler, Award Winner: Researcher</i>	<i>David Bennett, Award Winner: Champion</i>	<i>Michael Rensing, Award Winner: Changemaker</i>

Brought to you by:



**BC Bioenergy  
Network**  
PARTNERING FOR  
A GREENER FUTURE

## View Event Recording Here

Thank you to all stakeholders who submitted award nominations for the 2021 BC Bioenergy Sector Awards. Our judging panel found it challenging to select only one recipient per category due to the high quality of nominees. If your nominee did not receive an award this year, please nominate them again in 2022.



# HIGHLIGHTED BCBN EVENTS 2021

Hosted:

## Clean Fuel Standard: Fueling Conversation



When: February 28th, 2021

Biomass Energy Network and BCBN hosted a two-panel discussion titled "Clean Fuel Standard: Fueling Conversation". With diverse perspectives on both panels and many valuable questions from the audience, these discussions helped enhance public feedback to Environment and Climate Change Canada prior to the March 4th deadline.

[View Recording Here](#)  
[Read Summary Here](#)

Sponsored:

## Value of Biogas West Conference



When: November 9th and 10th, 2021

The 2021 Value of Biogas West Conference was held in the heart of downtown Vancouver, B.C. on November 9 and 10, 2021.

[View Recap and Read Event Report Here](#)

## Canadian Bioeconomy Conference and Exhibition



When: June 22nd-23rd, 2021

The Canadian Bioeconomy Conference and Exhibition is one of the largest and longest-running events of its kind in Canada. It has grown to cover the entire value chain of forest-based bioproducts – from the sustainable management of forests through to energy, wood products, bio-based chemicals.

[View Recap Here](#)

# BC BIOENERGY NEWS HIGHLIGHTS 2021

## Industry in BC

### Parkland Sets New Low Carbon Fuel Production Record at its Burnaby Refinery

Parkland Corporation announced it co-processed approximately 44 million litres of Canadian-sourced canola and tallow bio-feedstocks in 2020 and aimed to increase this to up to 100 million litres in 2021.

[Read More Here](#)



### Arbios Moving Forward with Innovative Biomass to Low Carbon Biofuel Plant in BC

Arbios Biotech, a joint venture of Canadian Forest Products Ltd. and Licella Holdings Ltd., announced the decision to proceed with the development of a pioneering biomass to low carbon biofuel plant in Prince George, British Columbia.

[Read More Here](#)



### Creation of Tidewater Renewables Ltd.

Tidewater Midstream announced the creation of Tidewater Renewables and capitalization via initial public offering. Tidewater Renewables formed to become a multi-faceted, energy transition company focused on the production of low carbon fuels.

[Read More Here](#)



### Air Canada to Invest \$50 Million in Sustainable Aviation Fuel (SAF)

Air Canada will invest \$50 million in SAF over the next decade. The airline plans to realize a goal of a 20% reduction in emissions (from a 2019 baseline) by 2030, and to reach net-zero emissions throughout its global operations by 2050.

[Read More Here](#)



### Seaspan Ferries to Reduce Greenhouse Gas Emissions Through Using Carbon- Neutral Renewable Natural Gas

Seaspan Ferries Corporation became the first Canadian marine company to pilot the use of renewable natural gas to reduce greenhouse gas emissions produced by its roll-on, roll-off liquefied natural gas powered marine fleet.

[Read More Here](#)



# BC BIOENERGY NEWS HIGHLIGHTS 2021

## BC Academia

### **New University of British Columbia (UBC) Bioenergy Facility Set to Pave Way for Carbon-Negative Future**

Building on work conducted at UBC's Clean Energy Research Centre over the past 15 years, the new Biorefining Research and Innovation Centre will bring together top academic researchers and industry partners to create leading-edge technologies that could significantly reduce our reliance on carbon-intensive fossil fuels.

[Read More Here](#)



### **Federal Government Invests \$3.5 Million in UBC's BioProducts Institute**

The Government of Canada announced more than \$3.5 million in funding for UBC's BioProducts Institute. The money is meant to help support the development, scale-up and production of sustainable bioproducts.

[Read More Here](#)



### **Simon Fraser University (SFU)'s New \$33 Million Corix Biomass Plant Helps Sustainably Heat a Community**

SFU's campus in Burnaby, B.C., is now home to a new \$33 million biomass plant that is using urban wood waste to provide heating and hot water to the campus and a nearby residential community, UniverCity.

[Learn More Here](#)



# INDIGENOUS BIOENERGY HIGHLIGHTS IN BC 2021

## Indigenous Clean Energy Opportunities (ICEO) - Engagement Now Open

The Ministry and First Nations Energy and Mining Council, and The Ministry of Energy, Mines and Low Carbon Innovation warmly encourage First Nations rights holders and organizations to participate in the ICEO engagement. A virtual engagement session was held on November 17th, and three virtual regional workshops are coming in early 2022. An early engagement questionnaire is available for submission.

[Learn More Here](#)

## Indigenous Forestry Initiative (IFI)

The IFI accepts applications throughout the year. Submissions are reviewed periodically, subject to the availability of funds.

[Read More Here](#)

## Ten B.C. First Nations Receive \$3-Million to Fund Clean-Energy Projects

Ten First Nations in British Columbia are to receive nearly \$3-million through the B.C. Indigenous Clean Energy Initiative, a funding partnership between the B.C. and federal governments and the New Relationship Trust, a non-profit focused on building capacity in First Nations in B.C. Funding includes \$500,000 for a biomass system to supply hot water heating and domestic hot water to the Northern Haida Gwaii Hospital and Health Centre.

[Read More Here](#)



### Indigenous Forestry Initiative

#### Funding opportunity - open

The Indigenous Forestry Initiative (IFI) accepts applications throughout the year. Submissions are reviewed periodically, subject to the availability of funds.

Applications received by **Wednesday, July 7, 2021, 23:59 PDT** will be reviewed at the next evaluation session, scheduled for August 2021.

Notification of funding decisions will be shared with applicants by October 2021.

[Submit an application](#) through our online system.

[Contact the IFI team](#) with your questions or if you are interested in taking part in a webinar on how to apply.



# BIOENERGY POLICY HIGHLIGHTS 2021

## B.C. Launches CleanBC Roadmap to 2030

The CleanBC Roadmap to 2030 plan accelerates measures in B.C.'s continent-leading climate plan that has been proven effective and introduces new ideas to help B.C. achieve the Paris emissions reduction targets for 2030 and reach net-zero by 2050.

[Learn More Here](#)

[Download the Roadmap Here](#)

## B.C. Wins Climate Award at Glasgow Conference

The CleanBC Program for Industry was awarded most creative climate solution from the coalition, which is a global alliance of state and regional governments committed to ambitious climate action in line with the Paris agreement.

[Learn More Here](#)

## Province Enables Increased Investments in Renewable Gas, Hydrogen

The Government of B.C. has amended the Greenhouse Gas Reduction Regulation (GGRR) to expand the definition of renewable gas and increase production and consumption in BC.

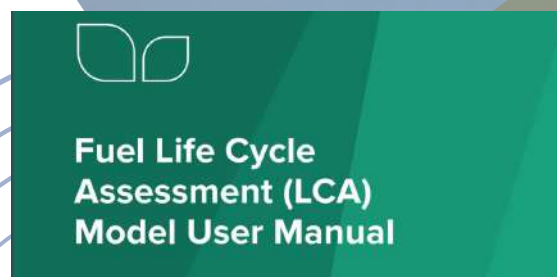
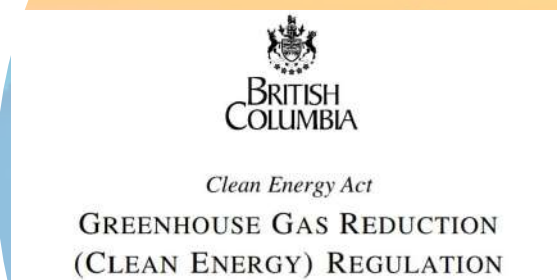
[Read More Here](#)

[Read GGRR Here](#)

## Environment and Climate Change Canada (ECCC) Pre-Publishes Canadian Fuel Regulations (CFR) Life Cycle Assessment (LCA) Model

The Federal Department of ECCC announced the pre-publication of the Fuel LCA Model for the CFR on their Data Catalogue.

[Learn More Here](#)



# 2021 REPORTS

## Advanced Biofuels Canada (ABFC) Releases Annual 'Biofuels in Canada' 2021 Report

The report is fifth in a series commissioned annually by ABFC and independently authored by Navius Research.

[Learn More Here](#)



## B.C. Releases Hydrogen Strategy

The strategy document outlines a series of short- and long-term policy and procedural goals, including the development of a framework for provincial regulators to work co-operatively with hydrogen industry players.

[Read More Here](#)

[Read Strategy Here](#)



## Canadian Fuels Association Releases: "On Our Way: An Update on Driving to 2050 Vision"

The CFA released this report to highlight to role of transportation fuels in Canada's low-carbon future.

[Read More Here](#)

[Download the Report Here](#)



## 2020 Reports to Watch

### Canada Releases Hydrogen Strategy

The Hydrogen Strategy for Canada lays out an ambitious framework for actions that will cement hydrogen as a tool to achieve our goal of net-zero emissions by 2050 and position Canada as a global, industrial leader of clean renewable fuels.

[Read More Here](#)

[Read Strategy Here](#)



### Canada Releases Clean Fuel Standard (CFS) Draft Regulations

The CFS will help drive innovation and create job opportunities across multiple sectors, including clean technology, agriculture and low-carbon energy sectors, such as biofuels and hydrogen.

[Read More Here](#)

[Read Draft Regulations Here](#)

### Clean Fuel Standard



# PROGRAMS TO WATCH

## B.C. Centre for Innovation and Clean Energy (CICE)

The CICE was founded by the Government of British Columbia, Government of Canada and Shell Canada to bring together innovators, industry, governments and academics to accelerate the commercialization and scale-up of B.C.-based clean energy technologies. It is also intended to be a catalyst for new partnerships and world-leading innovation to deliver near- and longer-term greenhouse gas emission reductions.

[Learn More Here](#)

## Clean Fuels Fund

This commitment was re-affirmed in Budget 2021 with an investment of \$1.5 billion over five years to establish a Clean Fuels Fund, to de-risk the capital investment required to build new or expand existing clean fuel production facilities (including facility conversions).

[Read More Here](#)

## Investments in Forest Industry Transformation (IFIT) Program

The IFIT Program accepted applications for two separate funding opportunities.

[Read More Here](#)

## \$500-Million Investment Fund Paves Way for InBC Investment Corp. (InBC)

The B.C. Government introduced legislation to support the operations of InBC, a new \$500-million strategic investment fund.

[Read More Here](#)

## Jobs and Growth Fund

The Government of Canada launched the Jobs and Growth Fund to help job creators and the organizations that support them to future-proof their businesses, build resiliency, and prepare for long-term growth.

[Read More Here](#)



### Investments in Forest Industry Transformation (IFIT)

#### Funding Opportunity – Open

The Investments in Forest Industry Transformation program is accepting applications for two separate opportunities.

Eligible firms of all sizes across Canada's forest sector are encouraged to apply.

#### Capital Investment projects

Capital funding to support transformational projects by forest sector firms to diversify into new product streams and ensure industry competitiveness.

**Deadline for project proposals: Thursday, July 22, 2021, 5:00 pm EDT.**

#### Studies project

Funding to conduct studies linked to the development of innovation in the forest sector in support of capital investment or strategic shift by firms.

**Applications are accepted on an ongoing basis until all funds have been allocated.**



# MEET THE TEAM

ON BEHALF OF BCBN, WE THANK ALL OUR PARTNERS AND STAKEHOLDERS FOR A WONDERFUL 2021. WE LOOK FORWARD TO 2022.

## BOARD OF DIRECTORS



**David Schick**

Chairperson



**Paul Austin**

Director



**Vivian Kan**

Director



**David Bennett**

Director



**Scott Stanners**

Director

## MANAGEMENT



**Scott Stanners**

Executive Director



**Ralohn Hunt**

Project Director



**Ashley Callister**

Operations Manager

*Learn more about BCBN at [bcbioenergy.ca](http://bcbioenergy.ca)*