



our nature. our power. **our future.**

**CleanBC Communities Fund (CCF)
Innovation and Resilience Webinar**

March 2, 2022



TERRITORIAL ACKNOWLEDGMENT



CLEANBC COMMUNITIES FUND - CCF

- Investing in Canada Infrastructure Program (ICIP) \$3.9B Federal/Provincial ICIP Agreement announced Apr 2, 2018
- Green Infrastructure - Climate Change Mitigation sub-stream
- [Clean Communities Fund \(CCF\)](#) contributes to Canada's target of GHG reductions
- Infrastructure that creates economic growth; sustains well-paying jobs; builds inclusive communities; supports a low-carbon, green economy
- Intake 3: \$134 million (combined federal and provincial funding)
 - Opened Jan 26, 2022 and closes May 25, 2022

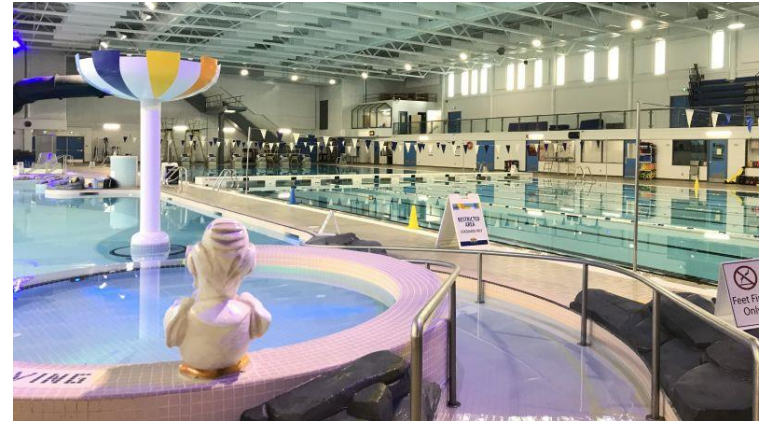
CLEANBC COMMUNITIES FUND - CCF

Must meet one program outcome:

1. Increased capacity to manage renewable energy
2. Increased access to clean energy transportation
3. Increased energy efficiency of buildings
4. Increased generation of clean energy

Projects must also:

- Support public infrastructure, defined as tangible capital assets primarily for public use and benefit



CCF INTAKES



- Intake 1 (2018-2019):
 - Up to \$63 million combined Federal/Provincial funding
- Intake 2 (2020):
 - Up to \$47 million combined
- Intake 3 (2022):
 - Up to \$134 million combined
 - Opened Jan 26, 2022 and closes May 25, 2022
- Search for other funding opportunities in new [BC Community Climate Funding Guide](#)



Ideas to add additional innovation to CCF applications

Neil Dobson, Executive Director, BC
March 2, 2022



Foresight is Canada's Cleantech Accelerator.

We are a national not-for-profit, working with our network across Canada to **fuel the transformation to a green economy.**

We hope you'll join us as we support the growth and commercial impact of cleantech across the country.



We accelerate cleantech through...



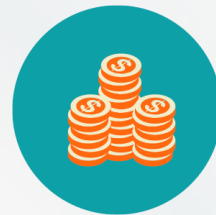
Accelerator Programs

Proven successful programs available across Canada



Innovation Challenges

Problem-driven approach to solving industry challenges



Capital Attraction

Program and matchmaking for funding at all stages



Export Development

Market intelligence, industry roadmaps, data, and events



Ecosystem Building

Multi-stakeholder networks for collaboration and leverage

We define cleantech quite broadly.

This covers any environmental benefit, including:



**Reduction of
Resources Used**



**Repurposing of Traditional
Waste Streams**



**Supply Chain Innovation
& Additive Manufacturing**



**Innovations with Definable
Environment or Climate Impacts**

What are we seeing in the innovation ecosystem?

ESG

The speed of change in the financial markets is not slowing. GHG reduction policy and action is a critical driver of credit rating/ access to capital.

Systems Change

Sector by sector focus is not going to be enough. Finding overlaps between sectors and win-win-wins is going to be critical. Policy innovation not just tech innovation is key.
E.g. circular economy and turning waste into a resource/ distributed renewable energy to manage different use patterns.

Hydrogen

There is a hydrogen 'gold rush' with jurisdictions ramping up ambition and intent. BC has a competitive advantage.

Building demand and supply at the same time

Deliberate curation of both sides of the system can help a smooth and more rapid transition.

E.g. many people won't buy EVs until chargers are widespread. Without a regular supply of renewable energy, industry can't pivot off fossil fuels.

Mitigation + Adaptation

The siloing of GHG reduction projects and climate resiliency and adaptation projects is changing for the good.
E.g. nature based solutions/ resiliency of energy systems in disasters/ 'buildings of the future'.

What are we seeing in climate policy?

LCFS/ ZEVs

- Carbon intensity decline speeding up, making renewable drop in fuels/ alternative fuels more necessary and economically valuable.
- Accelerating shift to ZEVs in LDV and MHDV.

NG Utility GHG Cap

FortisBC and PNG must decrease emissions 47% from 2020 levels by 2030 creating an increase in demand for blendable renewable fuels and other solutions on the NG system including fuel switching.

Hydrogen

Big push on hydrogen as a decarbonization solution for MHDV, NG system GHG reductions, industry, power generation.

Communities

CleanBC Roadmap committed to:

- Supporting better land-use planning,
- Supporting local climate action,
- Improving local governance,
- Supporting natural asset infrastructure,
- Encouraging “mode shifting” to more energy efficient forms of transport.

Building and Equipment Standards

Speeding up off building envelop and heating equipment standards:

- Highest efficiency standards for new space and water heating equipment,
- Zero-carbon new construction by 2030,
- More low carbon building materials.

What does this mean for CCF applicants?

Overall

- Think about cities own ESG requirements re debt markets
- Take a systems approach - how can projects achieve multiple objectives at once? Can a project support supply of a fuel needed or demand to help create a market?
- Add future climate adaptation elements to GHG reduction projects to avoid need for second retrofit
- Future proof by trying to build ahead of current regs because stringency will keep increasing

Renewable Energy

- Fuel switching remains a large part of decarbonization
- Is there waste heat or other waste sources in your community that could displace fossil fuels?
- NG utilities need to reduce GHGs in their system so are looking for new supplies of cleaner gaseous fuels
- Hydrogen supply is coming - may be opportunities to build out delivery infrastructure or convert fleets
- Work with local industry to develop hydrogen or RNG projects to fuel district energy systems

Clean Power

- Energy storage as part of system upgrades to add resiliency
- Heat pumps provide cooling options for warmer summers
- BC Hydro system may need local resiliency and local increased peaks so may be opportunity to build renewable power systems and use for self/ sell onto grid

What does this mean for CCF applicants?

Clean Transportation

- Mode shifting infrastructure increasing needed – bike lanes/ sidewalks/ bike parking/ transit
- Alternative fuelling/ charging options needed for all vehicle classes and economic opportunities from credit sales
- Urban redesign options – densified, compact, liveable communities
- Opportunities to electrify transit and earn LCFS credits
- Opportunity to electrify fleets and partner with companies who will build out charging stations so they can earn the LCFS credits
- Include trees within active travel projects to help provide shade and avert urban heat island effect

Building Efficiency

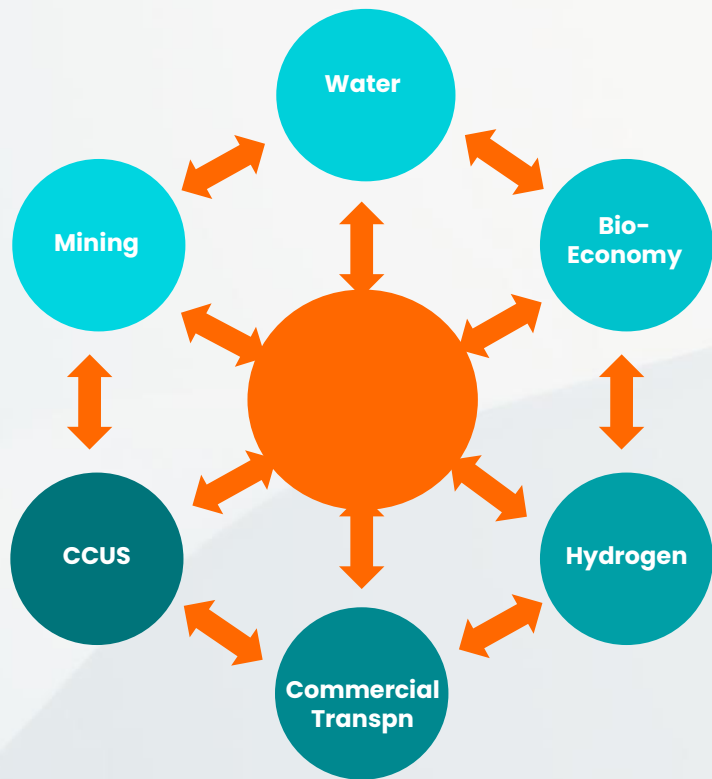
- Opportunity to BC wood based building materials
- Incentive to fuel switch to electricity now to avoid redundancy of fossil systems post 2030
- Fortis has incentive to support electrification projects in their joint service area
- Commercial buildings (efficiency/fuel switch) still an area that needs a lot of effort to move sector towards 2030 target and new software/ hardware options coming online
- Think circular economy when doing new builds/ retrofits and reclaim materials/ avoid landfilling
- Think adaptation even when primary retrofit purpose is GHG reductions – e.g. backup power supply/ heat pumps for air conditioning/ fire-proof envelope/ sewer flood protection

Some interesting BC companies/ projects to consider

**Including these companies here should not be considered to be an endorsement of them by Foresight*

- **Moment Energy** – winning lots of awards in energy storage
- **Portable electric** – targeting mobile and temporary energy storage applications
- **Origen Air** – HVAC improvement systems
- **Audette Analytics** – improving building efficiency in commercial building systems
- **Lambda Science** – targeting retrofit and new build residential
- **Reusables** – deploying to combat single use plastics
- **Refeed** – upcycling food to avoid methane emission from composting or disposal
- **Plugzio** – EV charging without the infrastructure upgrades
- **Earthtube** – HVAC energy reduction targeting new builds with improved air quality
- **HTEC** – hydrogen refuelling infrastructure
- **Hydra** – hydrogen dual fuel bolt-ons to diesel engines to reduce emissions
- **Intelligent City** – modular mass timber building materials
- **Unbuilders** – take buildings apart for reuse
- **Sewervue** – pipe inspection technology to avoid leaks
- **Kanaka Bar Challenge** – low-carbon resilient building materials

BC Net Zero Innovation Network



A Network of Interlinked Sector Hubs

A dynamic, flexible, integrated workspace for cleantech innovation that:

- Solves market and industry needs
- Grows economic opportunities for BC and Canada from cleantech
- Connects, collaborates, accelerates solutions
- Supports achievement of 2030 climate goals

Thank you

Please get in touch - we're excited to learn more about you and explore opportunities to collaborate.



Neil Dobson

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CLIMATE CHANGE RESILIENCE



BC has drafted the [Climate Preparedness and Adaptation Strategy](#) with initial actions for 2021-2022 and key themes proposed for 2022-2025.

1. Recognizes that communities are directly affected by impacts of climate change and the first line of response to severe weather and disasters.
2. Building community capacity to reduce and manage risks from climate change to protect our buildings and infrastructure to ensure capital investments incorporate climate risk
3. Ensure needs of rural and indigenous communities are met as they often differ from urban communities

- Examines the risk and resilience of the project to a climate change related disruption or impact
- Are you employing measures that increase the resiliency of your public infrastructure and/or your community to climate impacts?
- Have you consulted, or will you consult, climate change data and tools, such as future climate projections available through the Canadian Centre for Climate Services, PCIC, ClimateData.ca, other?
- [New Climate Lens General Guidance \(2021\)](#)

If no or low significance of climate change risks:

- Outline process undertaken, evidence generated, and conclusions of the assessment

If medium/high risks identified:

- Provide analysis of risk, consequence, likelihood, and vulnerability
- Include risk mitigation measures considered and evidence presented
- Rationale must be provided if risk mitigation measures are identified but not selected for implementation

IDENTIFICATION & ASSESSMENT OF RISK



Evaluation should look at:

- a) Climate change hazard;
- b) Impact on assets (reflects vulnerability);
- c) Consequence of impact.

Example:

- a) Flooding exacerbated by climate change;
- b) Impaired operation of community centre and interrupts service
- c) Direct impacts to the community centre and potential to increase risk to public if the facility could not function as community gathering centre.

Risk assessment should also consider:

- Extreme events, incremental or slow onset events, and cascading cumulative impacts

RISK ANALYSIS, VULNERABILITY & ADAPTATION MEASURES



- Consequence and likelihood considered in the context of:
 - Climate change scenario(s) being considered
 - Existing controls to manage the risk
- Adaptation measures to be taken:
 - Requires narrative outlining which risk treatment or adaptation measures analyzed, which will be implemented and why – including resulting proposed change in resilience
 - Identify risks that are not being addressed and why
 - Anticipated residual risk and cost considerations should be noted

CONTACT US



- Brief description of infrastructure: what you are building and why?
- What are projected greenhouse gas (GHG) reductions?
- Partnerships with local governments and Indigenous Communities?
- High-level project costs
- Rough timeline (start and completion dates)
- What are your specific issues and questions?

Please email questions about your project to: claire.yick@gov.bc.ca

QUESTIONS?



Appendix: Foresight Canada

We're proud of our impact.

Since 2015, our work has led to...

\$1B+

Economic Impact

6,700+

Green Jobs

\$840M

Company Financing

750+

SMEs Supported

\$310M

Revenue Generated

150+

Regional & Global Partners



We are cleantech focused & sector agnostic

and have supported cleantech ventures in agritech, built environment, carbon, energy, water, and more, including hardware, software, and services.

agriNEXT 

buildNEXT 

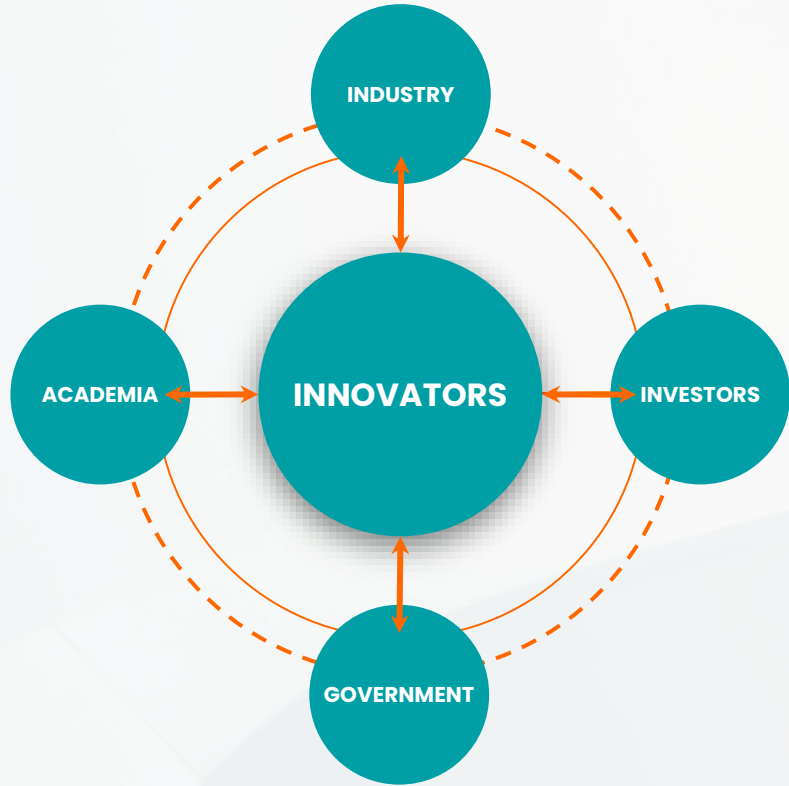
bioNEXT 

carbonNEXT 

energyNEXT 

powerNEXT 

waterNEXT 



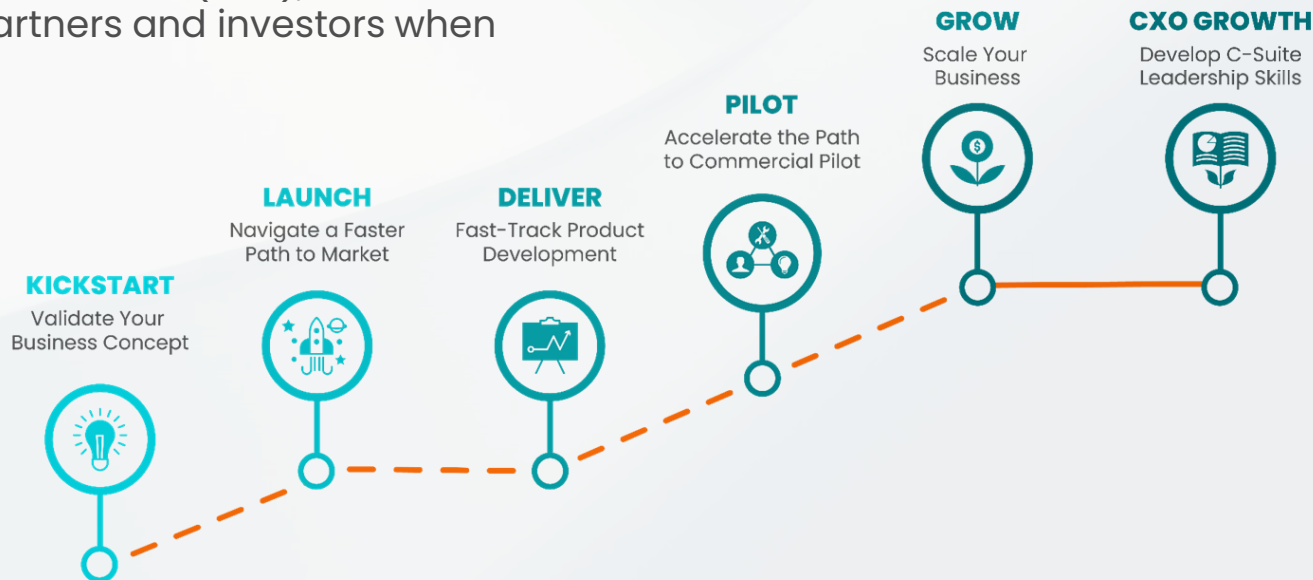
We collaborate through a Helix-5™ approach.

This is our term for the groups that we prioritize and work with most closely.

Unlike the triple helix, we see both the need and the opportunity to connect and support five distinct groups who all have different strengths and challenges: **SMEs (innovators), industry, government, investors, and academia.**

We support SMEs at every stage of their growth.

We provide training, access to mentors and Executives in Residence (EIRs), as well as introductions to partners and investors when they're ready.



We work with industry to help understand their needs...

and connect them with the technologies and solutions to help them meet urgent climate targets through our *Industry Challenges*.

This reverse pitch format ensures that innovation is market driven and ready for adoption.



We work with provincial, regional, and federal governments, and Indigenous leaders...

to position Canada as a global leader in cleantech excellence, and to support the realization of Canada's net-zero climate targets.

We market Canadian regional strengths, build provincial clusters of excellence, and support export opportunities and training for Canadian small and medium businesses through training, curated introductions, and matchmaking events.



We work with investors to attract capital that Canada's cleantech businesses need to succeed...

and connect high potential growth businesses to Angels, VC's, and the non-dilutive funding they need to effectively scale.



We work with academia to support the commercialization of technologies...

and solutions to meet real world
cleantech needs, and to connect
student and recent graduate talent
to employers in the green economy.



Our core values set us apart.



Entrepreneurial

We act with ownership, we are keen to embrace new ideas, and we are comfortable taking calculated risks.



Collaborative

We believe that the Canadian cleantech ecosystem is stronger together. We act without self-interest to enact meaningful change.



Passionate

We understand the climate targets, and we take meaningful action to address real world problems on a personal level and as a business.



Transformational

We are not okay with the status quo. We work towards audacious goals and take the road less travelled.



Connectors

We believe in removing silos and building an ecosystem of cooperation and *co-opetition*. We advocate and lead sharing information, resources, and best practices.