



**Pacific Institute  
for Climate Solutions**

CLIMATE FORESIGHT DIALOGUE REPORT

# Planning for Collective Ownership of Climate Transition Infrastructure in B.C.



**Report prepared by Dr. Holly Caggiano and Giulia Belotti**

*Cover image: Solar panels at the Salish Sea Renewable Energy Co-op, Galiano Island. Photo by Charlotte Taylor.*

## Climate Foresight Dialogues

PICS **Climate Foresight Program** aims to germinate transdisciplinary and cross-sectoral collaborations that explore complex and emergent climate challenges and generate transformative knowledge and solutions. By funding early scoping workshops and ongoing networks, this program fosters innovative collaboration between researchers, Knowledge Holders, and those directly applying climate insights.

**Climate Foresight Dialogues** bring together teams of scholars and practitioners situated across multiple academic disciplines and sectors for multi-day, intensive retreats to scope collaborative approaches to complex climate challenges.

The Dialogue on **Planning for Collective Ownership of Climate Transition Infrastructure in B.C.** was held on Galiano Island, B.C., October 14-16 2025. Led by Dr. Holly Caggiano (UBC), Dr. Alex Tavasoli (UBC), and Ana Guerra Marin (Iron and Earth), the Dialogue brought together scholars and practitioners in renewable energy, energy cooperatives, Indigenous and rural community planning, and land trusts to explore how collective ownership and community governance models could reshape B.C.'s energy transition, and to map a research agenda to advance these models. A full list of participants appears in the Acknowledgements.

This report was prepared by Holly Caggiano and Giulia Belotti. The views expressed in this Dialogue report may not reflect the views of all Dialogue participants or their organizations, or those of PICS. All participants were invited to review and offer comment on the final report, and we thank them for their contributions.

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## 1. Purpose of the Dialogue

We planned this Dialogue, Planning for Collective Ownership of Climate Transition Infrastructure in British Columbia, to bring together researchers and practitioners who share the belief that communities should play a central role in shaping the technologies and systems intended to support decarbonization. We used the broad framing of ‘climate transition infrastructure’ to include a wide range of technologies and practices that facilitate emissions reductions, including but not limited to renewable energy generation, electric transmission lines, and battery storage. Historically, the development of these systems has relied heavily on private investment and developer-led project initiation. As we have seen across our wide range of experiences, this model often risks reproducing patterns of environmental harm and social inequity by limiting local agency, constraining community benefits, and sidelining community knowledge.

The Dialogue brought together seventeen academic researchers and practitioners to reflect on existing collective ownership initiatives for climate transition infrastructure across sectors in British Columbia and to identify priority areas for future work. From these discussions and participants’ experiences and ideas, we drafted a preliminary roadmap for future research to catalyze community-led climate infrastructure projects across British Columbia, although we hope that this effort may also serve as a foundation for broader efforts across Canada. This report summarizes key insights surfaced in conversations during the Dialogue and highlights future opportunities for advancing the study of equitable energy and decarbonization transitions through collective ownership of climate assets and processes.



From left: Ana Guerra Marin, Jordan Koe, Kuan Jian Foo, Zoé Yunker, Sarah Sinclair, Sara Nelson, Charlotte Taylor, Giulia Belotti, Stephanie Cairns, Julie MacArthur, Brad Nickel, Holly Caggiano, Tom Mommsen, Alex Tavasoli.



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## 2. Establishing common ground: Context and foundations

### 2.1 Defining collective ownership

At the start of the workshop, we aimed to form a shared working definition of “collective ownership” and to identify how it currently manifests across Canada, particularly in British Columbia. We quickly realized that pinning down a concrete definition was a difficult task, which could potentially be limiting, but was important to establish common ground. Participants emphasized that a rigid definition could risk overlooking the many ways communities govern, control, and benefit from shared assets.

From a legal perspective, ownership has a specific definition: “the legal right to use, possess, and give away a thing” (per [Cornell Law](#)). Ownership is often used in relation to material property or land, but can also include intangibles like intellectual property. Recent scholarship has tackled definitional issues for terms like “community energy”. A systematic review of community energy literature found (1) a shift away from an understanding of community as participatory process, and a more prevalent use of community to refer to a particular place; and (2) focused on community economic objectives rather than social or political goals ([Bauwens et al. 2022](#)).

With this in mind, we considered what we might explicitly deem not collective ownership. For example: consider BC Hydro, a Crown Corporation owned by the province of British Columbia. We agreed that we would not consider this collective ownership; though government ownership might be considered ‘collective’ by some, the wide provincial scale and distance between decision-makers and the public weakens the sense of collective control. The Commons Network draws a similar distinction between ‘public’ and ‘collective’ stewardship using the case of the digital commons, where collective stewardship is done by groups of citizens or organizations and public stewardship refers mainly to government ([The Commons Network 2024](#)). That said, participants noted that municipal ownership can often be achieved with a great deal of community participation and control. Another helpful thought exercise asked if publicly traded corporations, in theory owned by shareholders, would count as collective ownership (our answer: no). Importantly, models of collective stewardship are not new: traditional communities around the world have practised forms of shared, collective resource governance for thousands of years.

**To guide the conversation, participants agreed on a scope for meaningful collective ownership: projects should be grounded in direct community decision-making power, be accessible to a defined set of community members, be responsive to community needs, and work at a relatively local scale (community as opposed to provincial or national levels).** This emphasizes procedural control and participatory governance rather than solely financial or legal ownership; namely, who makes decisions, how governance responsibilities are shared, and how benefits and risks are distributed across groups. Further discussion highlighted the importance of asking questions about processes and outcomes associated with projects: At what scale can collective ownership be exercised? How many people must be involved for something to be genuinely collective? How do we distinguish ‘ownership’ from decision-making power and control?



## 2.2 State of collective ownership in Canada & B.C.

Our discussion of collective ownership projects currently operating in Canada reveals a landscape shaped heavily by policy design. There are currently 214 operational cooperatively owned electricity generation projects, most of which are solar and concentrated in Ontario and Alberta (mapping project by [MacArthur et al. 2025](#)). Ontario's experience likely reflects the influence of feed-in-tariffs (FITs) that created stable demand and revenue streams, whereas Alberta's more flexible regulatory environment has allowed co-ops to more easily participate in the energy market. However, the degree of "community" behind each project varies. Some co-ops hold only minority stakes, limiting their influence, while others develop multiple projects with different partners, sometimes resulting in arrangements that sit at a distance from the core cooperative organization (e.g., Peace Energy Coop).

Across the sector, the primary focus remains on electricity generation rather than other forms of climate transition infrastructure, and priorities differ substantially between regions that enjoy reliable, affordable, and relatively clean energy and those that do not, particularly areas that are not integrated into the electricity grid (i.e., non-integrated areas or NIAs). On this note, it is crucial to differentiate between connected rural communities and remote or isolated communities, as the challenges for the latter are often exponentially greater regarding grid access, energy security, supply chain resilience, and capacity. For truly remote communities (NIAs), traditional grid extension or private investment is often not viable, making collective ownership not just desirable but often the only practical pathway to climate transition infrastructure and energy security.

While our initial 'climate transitions infrastructure' scope was broad, discussions often focused on distributed energy generation. Some participants highlighted other opportunities for collective ownership, including of services (like broadband internet), demand-side technologies (like energy retrofits), or manufacturing (for example, an employee-owned pulp and paper mill), but the overall the conversation was dominated by energy generation – likely because of participants' experiences and the predominant types of existing collective ownership initiatives in the province and country. Thus, many of our observations are specific to energy and cooperative models, but a strand of future work might specifically focus on other sectors.



## 2.3 Cooperatives

Collective ownership in the energy sector has largely been achieved through cooperatives, and participants with extensive experience in the cooperative sector offered insights into what makes co-ops work. We discussed the group's experiences with co-ops, including how opportunities to form them arise and under what conditions they thrive.

Co-ops aggregate community demand and capacity, enabling members to achieve what individuals cannot. This aggregation is particularly vital in markets too small to support competition (e.g., rural broadband, energy co-ops, or even single-community grocery stores). Participants with co-op experience stressed that successful co-ops require a unifying story beyond solely making a profit: one rooted in shared values like independence, fairness, and local control. Many examples cite emotional and cultural drivers such as anger at exploitation (e.g., by developers or corporations), which can provide strong motivation for organizing. Co-ops often emerge where private actors have withdrawn or failed the community, filling gaps left by government or investor-owned utilities. They tend to flourish in low-risk, low-reward environments, where steady returns and resilience are prioritized over maximizing profits. The underlying financial model plays a critical role: just as credit unions channel local capital toward local purposes, energy co-ops depend on keeping money circulating within the community. To levelize risk and reward, successful co-ops share the upfront investment risk across many members while pursuing long-term payoffs. Some examples discussed beyond energy include broadband internet and housing.

We also discussed how established co-ops can play an important role by incubating new ones, providing legal and administrative support and building regional networks. For example, mature co-ops often have low debt ratios, creating opportunities to leverage existing assets and provide services or financing to emerging co-ops. By pooling expertise (legal, financial, technical), they can deliver shared service efficiencies and economies of scale across multiple initiatives. Local governments—including municipalities, regional districts, and First Nations—can also serve as conveners, helping communities organize, connect with partners, and articulate their long-term goals.



*Dialogue participants board Galiano Island's community-owned electric bus for a field tour.*

**“Co-ops excel in markets that cannot sustain multiple private competitors, providing essential services that neither government nor private firms can deliver efficiently.”**



In rural contexts, local governments often play a central role as catalysts, conveners, and potential owners/operators due to limited private sector interest and community capacity constraints. They are often the most stable local institution capable of initiating and sustaining such projects. Rural local governments are uniquely positioned to leverage their mandate, land assets, and connections to provincial funding to initiate collective ownership projects, even when capacity is low. This might involve exploring regional co-ops where multiple small communities pool resources through their regional district. Co-ops can multiply impact by aggregating across communities or sectors, forming federations or partnerships that share expertise and financing. Municipal or regional co-ops, for example, allow small towns to combine capacity without each hiring full technical teams.

**“Rural local governments are uniquely positioned to leverage their mandate, land assets, and connections to provincial funding to initiate collective ownership projects, even when capacity is low.”**

Scale is also a critical component to co-op design, and a source of barriers and enablers. Co-ops tend to excel in markets that cannot sustain multiple private competitors, where profit margins are too slim or the customer base is too small for traditional business models. In these contexts, co-ops provide essential services that neither government nor private firms can deliver efficiently. Some models have failed when scale is insufficient, and early-stage co-ops often struggle to secure initial seed funding and achieve sufficient scale before operations become viable. For example, projects like energy retrofits or microgeneration need thousands of participants to succeed. Balancing control and capacity also presents a challenge, as communities often want control but lack the technical or administrative capacity to operate large or complex systems.

#### 2.4 Barriers & enablers

Major barriers that impede the growth of collective ownership in climate transition infrastructure include: limited community capacity, lack of literacy (whether energy, policy, or financial) among communities, engagement fatigue, difficulty accessing funding, replication challenges, and trust issues in potential partnerships. Funding cuts, such as changes to gas tax allocations or cuts to supportive programs, compound these obstacles. As an example, the suspension of the Province’s Rural Dividend Program has had significant impacts on rural communities’ ability to pursue local projects, directly impacting rural non-profits, community-ran infrastructure (such as local broadband and water systems), and organizations like the BC Rural Centre. This is especially an issue in rural areas where volunteer burnout is high, and access to specialized skills (legal, financial, technical, project management) is scarce.



Tom Mommsen (left) and Dialogue co-lead Alex Tavasoli.



Yet the discussion also surfaced key enablers: robust policy frameworks, collaborative networks, storytelling and knowledge-sharing, and bottom-up engagement processes. In rural contexts specifically, secure, dedicated, long-term funding and programs for capacity building and technical assistance (such as provincial support for rural energy project facilitators, shared resource pools, or mentorship programs) would be beneficial. Lastly, a clear enabler that emerged from the discussion was a favorable regulatory environment allowing co-ops to sell energy and other commodities to wider markets. Demand guarantees such as FITs were repeatedly cited as a critical mechanism not only for financial viability, but also for building public acceptance. We did not dive deeply into specific regulatory enablers, but [Julie MacArthur](#) is leading an ongoing project to understand what kinds of regulatory environments would facilitate collective ownership of energy systems.

### *2.5 Collective ownership beyond energy*

Insights from other sectors, particularly housing, provided valuable analogies and lessons. Community Land Trusts (CLTs) share many structural features with energy co-ops: they are place-based, membership-driven, and oriented toward long-term community stewardship. Their success often hinges on early government partnership, enabling policy environments, and access to social finance mechanisms. The conversation also highlighted tensions that shape collective ownership in both energy and housing sectors: balancing outside investment with local control, reconciling environmental and economic goals, navigating short political cycles, and confronting persistent power imbalances that impact who benefits from “community” models.



*From left: Sarah Sinclair, Julie MacArthur, Charlotte Taylor, Kuni Kamizaki, Maggie Low, Giulia Belotti, Holly Caggiano.*

## **3. Key areas identified for future work: Themes, gaps, and opportunities**

The workshop identified several priority areas for advancing community energy and collective ownership in British Columbia. Participants agreed that distributed energy resources, such as rooftop solar and battery storage, present opportunities for community resilience, autonomy, and self-sufficiency.

Barriers to progress are both institutional and technical. B.C.’s regulatory and policy environment remains deeply centralized, leaving little room for the experimentation, autonomy, and responsiveness that community-led approaches require. **We highlight four major themes to guide future work: (1) transforming the policy landscape; (2) expanding conceptions of resilience; (3) strengthening education and community engagement; and (4) developing comparative studies and researching alternative business models.**



### 3.1. Transforming policy and regulatory contexts for community energy ownership

Perhaps the strongest consensus among participants was that B.C.'s policy and regulatory framework is the single most significant impediment to realizing community energy initiatives in the province. Although there have been significant technology developments that enable distributed energy systems, there are technical and regulatory challenges to solve around grid load balancing. At the provincial level, BC Hydro has primarily focused on major infrastructure projects (as opposed to distributed renewable generation) and supplying population-dense areas, risking deprioritization of NIAs. Participants raised challenges associated with working on energy cooperatives in this context, specifically considering grid interconnection. Some participants raised issues with B.C.'s handling of "community energy", which often excludes meaningful community participation and serves to reinforce a narrow interpretation of community energy. Additional conversations raised issues with the BC Utilities Commission's (BCUC) priorities and planning efforts, specifically its outdated integrated resource plans.

This regulatory environment generates substantial uncertainty, especially for small solar groups and independent developers who operate in isolation and struggle to intervene effectively in regulatory hearings. Several participants noted that access to BC Hydro data is restricted, often requiring Freedom of Information requests to obtain even basic system information, which leaves both decision-makers and the public uninformed. The group discussed other possible arrangements for utility provision in the province (for example, re-municipalization, or the creation of new municipal utilities at a smaller and more inclusive scale of governance), and noted that under the current system, calls for new power supply overly depend on commercial investment which essentially cause BC Hydro, a public utility, to function like a private company.

#### Emergent Questions, Theme 1

- What are the existing levers for regulatory reform across provincial utility governance?
- Which collective ownership strategies require policy intervention, and which can be self-initiated at the community level without government action?
- How can we articulate the socio-economic impacts of collective ownership, including value beyond kilowatt-hours or cost savings? How might we quantify the socio-economic impact of existing cooperatives, and thus the potential impact of regulatory reform?
- How might First Nations' generation and distribution activities outside BCUC jurisdiction inform new pathways for local control in other communities?



### 3.2. Resilience and wellbeing: Socio-technical approaches to community preparedness beyond electricity

A second theme emphasized the need to situate community energy within broader frameworks of community resilience. Electricity is only one component of what communities require to meet basic needs, and participants noted that an effective resilience strategy must also consider water, food, cooling, heating, localized manufacturing, waste streams, and emergency response capacities. For many rural, remote, and Indigenous communities, the interdependency of energy, water, and local food production is critical for self-determination and adaptation to climate change. Indigenous and rural food sovereignty is at an all-time high, driven by supply chain disruptions, transportation costs, and the desire and need to be self-sustaining. Collective energy solutions can directly support local food systems (e.g., powering greenhouses, vertical farming, irrigation) and water infrastructure, making the case for integrated resilience planning even more compelling for rural areas. Despite the importance of these systems, little work has been done to map local assets, identify critical needs, or develop metrics that can help communities evaluate their own self-sufficiency.

Participants highlighted the need for research that examines what goods and services are essential during crises, what materials and waste streams could be repurposed for local production, and what low-cost, community-built technologies might support survival. This includes learning from people who already live in conditions of chronic precarity (e.g., unhoused community members) whose lived realities offer insights into improvisation, resourcefulness, and what “resilience” looks like outside formal infrastructures. A potential research pathway begins with community-based assessments of needs, materials, and maintenance capacity; proceeds to the development and testing of community-built technologies; and then repeats this process across multiple locations to extract cross-community insights that can inform policy. In B.C., where wildfire risk, geographic isolation, and uneven access to reliable power are ongoing challenges, this line of work is particularly relevant.

#### **Emergent Questions, Theme 2**

- How can we assess community sufficiency and resilience (e.g., how many days of self-sufficiency can a community realistically achieve)?
- Which materials or goods are most critical for resilience, and what ‘low-tech’ solutions could communities build and maintain themselves?
- What can we learn from the lived experience of communities on the margin who innovate to meet basic needs? How might work prioritize at-risk communities while centring self-determination?



### 3.3. Education, narratives, and community engagement

A third priority area focused on the educational and narrative foundations required to make collective ownership both desirable and feasible. Participants stressed that technical knowledge alone will not lead to durable change. Rather, what matters is cultivating a shared sense of purpose, identity, and possibility. This begins with meeting communities where they are (recognizing local priorities, cultural contexts, and political orientations) and making information accessible. Many communities face significant barriers, including language accessibility, limited climate literacy, or vulnerabilities such as flooding that shape how energy issues are experienced.

Workshop discussions highlighted the importance of narrative-building: using storytelling, humor, success stories, and local symbols of care or independence to ground collective ownership initiatives in familiar frames. Education should also operate across scales, from neighbor-to-neighbor learning to municipal training and provincial-level data mobilization targeted at party leaders and policymakers. Effective engagement requires both creativity and intention, whether through hands-on demonstrations, thoughtfully designed pop-up booths, media-friendly installations, or ensuring diverse representation among educators so that communities can see themselves reflected in the process. These approaches will be particularly important in B.C.'s varied social and geographic landscapes, where trust in institutions differs widely and where collective ownership will succeed only if it aligns with local realities.

#### **Emergent Questions, Theme 3**

- How can collective ownership be framed beyond economic metrics of success (e.g., as independence, care, security, youth opportunity, or community identity?)
- Who needs to be in the room for decision-making around collective ownership, and how does this differ across communities?
- What communication strategies enable participation across barriers of language, trust, or political orientation?
- What partnerships can best facilitate sustained engagement and coordination?



### 3.4. Comparative analysis and business model innovations

The final theme, perhaps most broad, highlights a need for systematic comparative research and experimentation with new business models for collective ownership and community energy. Participants noted that B.C. lacks a clear evidence base to compare different ownership structures and partnered models, such as coop-municipal arrangements, coop-private partnerships, or fully public versus private configurations across various technologies. Comparative work could help clarify which structures deliver the greatest environmental, social, and economic value, and under what conditions. Studying existing projects offers opportunities to measure metrics of success, including local economic multipliers, community benefits, sufficiency-based indicators, and ecological impacts. In the context of rural and remote communities, analyzing existing cases could help assess whether these projects effectively contribute to rural economic diversification, job creation, and retention of wealth and sovereignty, perhaps through the creation of new local enterprises and training programs, and reduced leakage of capital from rural economies.

Alongside comparative work, participants emphasized the need to explore alternative business models that reflect the realities of B.C.'s diverse communities. Questions remain about how communities can aggregate demand, identify unmet needs, raise seed capital, or pool land and resources in ways that maximize local benefit. Risk aggregation, whether through shared credit profiles, insurance mechanisms, or mutual support systems, may help overcome early-stage barriers, while existing co-ops in sectors like housing or agriculture could potentially serve as platforms for energy-related services. Tensions will inevitably arise, including those between scalability and replicability, or between formal management structures and the more informal, community-centric models that help co-ops thrive. Yet these are precisely the issues that future research can help clarify.

#### **Emergent Questions, Theme 4**

- How can demand aggregation be identified and mobilized for community projects? What resources or land could be aggregated to increase local benefit?
- What unmet needs could cooperative ownership models address? How can researchers surface unmet needs to identify opportunities?
- How can communities raise seed capital and overcome early-stage financial barriers?
- Which risks currently hinder community energy development, and how could aggregation de-risk them? What other mechanisms exist for de-risking cooperative enterprises?
- How might existing co-ops (e.g., agricultural or housing co-ops) serve as platforms for new energy services?



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## 4. Resources of interest

### Recent reports and datasets

- [Kamizaki, K. \(2025\)](#), "A Case for Community Land Trusts in Canada: Promising Community Practices and Public Policy Options", Canadian Network of Community Land Trusts
- MacArthur, J., Tarhan, D., Janelle, K., Blagogie, L., Argandona, G. (2025), "Canadian Community and Co-Operative Energy Database (CCED) Co-Operative Energy Map", <https://doi.org/10.5683/SP3/ISWGR1>

### Recent academic papers

- [Beattie, L., & Doyon, A. \(2025\)](#). [Resilience planning in Canada: An Analysis of Resilience in Local Governments' Strategic Land Use Planning Documents](#). *Journal of Planning Education and Research*. <https://doi.org/10.1177/0739456X251372895>
- [Hoops, B. \(2025\)](#). [Different notions of community in energy community legislation](#). *Journal of Energy & Natural Resources Law*, 43(3), 311–335. <https://doi.org/10.1080/02646811.2025.2540695>

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## 5. Moving forward

In closing, we are excited about the opportunities this Dialogue has opened for future work. Dialogue leads and academic research participants are actively working on existing and emerging projects, including but not limited to: (1) surfacing community needs and opportunities for community energy infrastructure ownership (Holly Caggiano); (2) community-driven engineering design and self-sufficiency beyond electricity generation (Alex Tavasoli); (3) roadmaps for provincial regulatory reform (Julie MacArthur). We welcome continued collaboration from partners interested in shaping this growing agenda.



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## 6. Acknowledgements

Thank you to each participant for contributing your energy, experience, and ideas to this Dialogue! We are grateful for the generous support of PICS through the Climate Foresight Program that made it happen.

We are grateful for the presentations, insights, and expertise offered by the participants in the Dialogue retreat that informed this report:

### Lead Researchers

- Holly Caggiano, Assistant Professor, School of Community and Regional Planning, UBC
- Alex Tavasoli, Assistant Professor, Mechanical Engineering, UBC
- Ana Guerra Marin, Communities Director and Just Transitions Lead, Iron and Earth

### Graduate Student Researchers

- Giulia Belotti, Research Fellow at the Institute for Responsible Carbon Removal and PhD student at the Institute for Resources, Environment, and Sustainability, UBC
- Charlotte Taylor, Master of Arts in Planning Student, UBC

### Participants

- Julie MacArthur, Associate professor and Canada Research Chair, Reimagining Capitalism, Royal Roads University
- Tom Mommsen, founding board member of the Salish Sea Renewable Energy Coop
- Sarah Sinclair, Executive Director, BC Rural Centre
- Jordan Koe, Ecotrust
- Kuni Kamizaki, Assistant Professor, School of Community and Regional Planning, UBC
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