Category
Partnerships

Geography/ Location
AB, BC, NS, SK

Municipality Size
All

Tier
Enabling

Constraints
None

Administrative Capacity Required
Medium

Fiscal Tool Brief: Co-operatives (Co-ops)

Local Governments for Sustainability
Les gouvernements locaux pour le développement durable
CANADA

Renewable Energy Co-operatives let communities collectively invest in shared clean energy projects, lowering costs, expanding access, and sharing benefits through mechanisms like virtual net metering.

Co-operatives are member-owned and democratically governed organizations that operate across many sectors, including finance, renewable energy, agriculture, housing, retail, health, insurance and others.[1] They allow individuals and communities to pool resources, share risks, and collectively benefit from services or investments that might otherwise be inaccessible. For the purpose of this brief, we will focus on Renewable Energy Co-operatives.

Renewable Energy Co-operatives (RECs) are often referred to as community renewable energy projects often include wind or solar power. They offer municipalities a way to expand access to clean electricity without requiring individual installations.

Through these programs, a municipality, utility, co-operative, or Indigenous government develops a shared wind or solar array and enables residents, businesses, and institutions to subscribe or invest in a portion of the system. Participants then receive credits on their electricity bills for the power generated by their share, a mechanism often referred to as virtual net metering.[2] This aggregated demand and centralized energy generation in a single professionally managed location, reduces per-unit costs, simplifies maintenance, and spreads financial risk across many participants. This mechanism can help overcome some common barriers, such as lack of access for rental housing and high upfront capital investments, although participation still depends on regulatory frameworks and project design. Across Canada, provincial energy regulators and utilities are gradually enabling virtual net metering arrangements that support municipalities to launch REC projects. Early uptake and active projects can be seen in provinces such as British Columbia, Alberta, Saskatchewan, Ontario and Nova Scotia.[3]

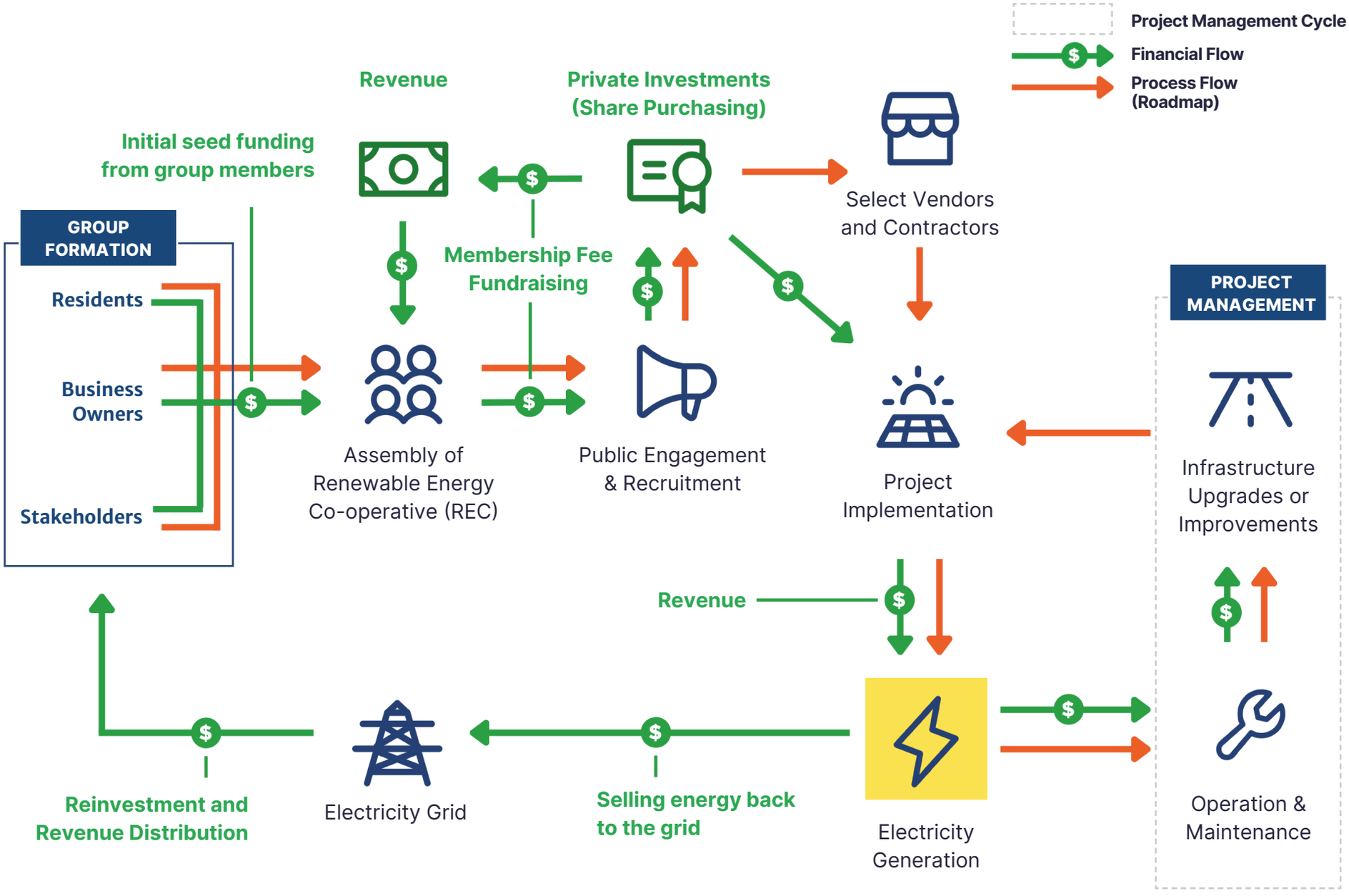

Figure 1. Visual representation of how Renewable Energy Co-operatives work

Examples

Numerous Canadian municipalities and communities have implemented REC projects to help lower greenhouse gas emissions and provide cleaner energy to the grid. For example, in June 2025 the Ulkatcho First Nation (BC) Anahim Lake Solar Project was launched as one of the largest off-grid community solar initiatives in Canada. Backed by a combined federal–provincial investment of $15.8 million, the project is 100% owned by the Ulkatcho Energy Corporation (UEC) and designed to displace the community's exclusive reliance on diesel generation. Once complete, the hybrid system, integrating solar panels, battery storage, and a diesel back-up, will cut diesel use by about 64%, significantly lowering greenhouse gas emissions and energy costs.[4] Under a Community Electricity Purchase Agreement with BC Hydro, the solar power will feed into the local microgrid, providing reliable clean electricity.

The Alberta Solar Co-op, based in Starland County (AB), is developing Alberta's first community-owned solar farm, a project that aims to become a model for other Prairie communities. Established in 2015, the co-op overcame early regulatory barriers and helped shape the province's Community Generation Program, which provides long-term price guarantees for locally generated renewable electricity and offers a 30% Community Economic Development Corporation (CEDC) tax credit for investors.[5] The planned 12-acre solar farm is designed to generate 1–2 megawatts of power, enough to supply roughly 400 homes, with an estimated $5 million in community investment raised through co-op share offerings and crowdfunding.[6] Electricity from the array will be sold back to the grid under Alberta's Small Scale Generation Regulation, creating a revenue stream for local investors while supporting the province's goal of achieving 30% renewable electricity by 2030.[7]

In June 2024, Shelburne (NS) approved a 10 MW community solar park in Jordan Branch under Nova Scotia's Community Solar Program. Developed by ABO Energy, the project will install 13.8 MWDC of panels with 10 MWAC inverters, generating about 18.4 GWh of power annually, enough for over 1,300 homes. Subscribers, including the municipality and local residents, will receive a $0.02/kWh credit, with potential savings of $369,000 per year.

Relevance to Advancing Adaptation

While primarily a clean energy and emissions reduction strategy, RECs can support municipal climate adaptation indirectly by increasing local energy security and resilience. Shared wind and solar arrays can diversify electricity supply and reduce reliance on centralized fossil fuel generation, helping communities better withstand grid disruptions caused by extreme weather events where systems are integrated with storage or microgrids. By pairing wind or solar generation with storage or integrating into microgrids, RECs can maintain critical services, such as emergency shelters or municipal water systems, during outages that are becoming more frequent. The model also lowers financial barriers for households and municipalities to access renewable power, reducing exposure to volatile energy prices. For municipalities, these projects provide a stable, locally controlled source of clean electricity that supports both mitigation and the capacity to adapt to increasingly frequent and severe climate impacts.

Accessibility

Access to RECs depends primarily on provincial regulations that determine who may generate and sell electricity, and whether mechanisms such as virtual net metering or community generation programs are permitted. Provinces like Nova Scotia, Alberta,

shared solar subscriptions, enabling municipalities to participate directly or partner with local co-ops.[8,9,10] A key advantage of this fiscal tool is that municipalities of different sizes can participate, including smaller and rural communities, since the model allows for distributed financial contributions across many members, although implementation still depends on provincial enabling frameworks and utility participation. This approach helps address one of the most common barriers, access to private funding, by distributing investment across participants. Access also depends on grid interconnection capacity and utility participation. Utilities must support billing credit mechanisms, subscriber management, and interconnection studies. Regions with advanced interconnection procedures or community-generation tariffs tend to have significantly higher uptake, as demonstrated.[11,12] Lastly, land availability affects accessibility, although projects can be developed on brownfields, municipal parcels, or underutilized land. Municipalities with spatial constraints can still participate through partnerships in co-ops located in neighbouring jurisdictions or through virtual crediting models if permitted by provincial regulation.

Feasibility

The primary constraint with RECs is the high upfront capital requirement for site preparation, equipment purchase, and interconnection upgrades, which often requires multi-party financing involving co-op member shares, lenders, and private developers. Evidence from Canadian community solar developers shows that interconnection studies and required grid upgrades can add significant cost and delays to projects. Furthermore, administrative feasibility is also shaped by a municipality's capacity to manage or partner on subscriber recruitment, billing coordination, and long-term operations. These tasks require dedicated administrative systems, especially for projects using virtual net metering, where revenues depend on accurate and timely utility crediting.[14] REC models can be attractive to municipalities because they offer flexible participation options, particularly where municipalities act as subscribers or partners rather than primary project sponsors. When municipalities participate as subscribers or land hosts rather than owners, projects may proceed without requiring municipal capital investment or affecting borrowing capacity, depending on local accounting treatment and governance arrangements.

Risk

One commonly identified risk for RECs is the uncertainty of long-term revenue streams, as changes to virtual net-metering rules or credit valuation can affect the project's cash flow. In jurisdictions where utilities can revise compensation rates or billing structures, REC revenues may fluctuate, increasing exposure for both municipalities and members of the co-operative. Moreover, REC projects also face challenges when trying to connect their solar systems to the electricity grid. Before a project can connect, the utility must study whether the local grid can handle the new power. Studies can take a long time, and projects often end up waiting in a queue behind others. If the grid in that area is already overloaded, the utility may require upgrades, such as new lines or equipment, before the project can connect. These steps add both time and cost, and in some cases can delay a project for months or even years, as highlighted in a recent independent review of Nova Scotia's interconnection process.[15] Lastly, the shared ownership model also introduces operational risk, as billing errors, subscriber turnover and management, or inaccurate utility data transfers can disrupt revenue allocation. These risks noted above

vary significantly across provinces and regulatory frameworks, reinforcing that project viability and performance are highly context dependent.

Scalability

There is a growing demand for REC projects as solar power becomes cheaper, and communities look for cleaner local energy options. As more municipalities and co-ops gain experience developing these projects, and as provincial programs become better established, RECs can expand gradually over time. Since these projects can generate revenue through electricity sales and bill credits, early successes may help attract new investors and finance larger follow-on installations, although revenue stability depends on regulatory conditions and credit structures. This pattern has already emerged in several community solar initiatives, where initial projects have set the foundation for bigger, more ambitious projects.[16] However, scalability is constrained by grid hosting capacity and interconnection availability. Distributed solar can only expand to the extent that local feeders and substations can accommodate additional electricity generation, and many municipal distribution systems have limited surplus capacity, requiring upgrades before new REC projects can proceed.[17] Overall, RECs provide a flexible and community-driven model that can expand over time, but scalability is contingent on stable provincial rules, available grid capacity, and sustained organizational and financial capacity.

Evaluation Matrix

Scoring: High = +1 | Medium = 0 | Low = –1

Criterion	Rating	Score	Key Evidence	Assessment
Effectiveness & Performance	Medium	0	Indirect adaptation benefits (energy resilience)	Supports adaptation indirectly through energy resilience but does not directly finance targeted resilience infrastructure.
Economic Efficiency	Medium	0	Shared costs but high upfront and coordination complexity	Cost-sharing improves efficiency, but financing, interconnection, and governance requirements add complexity.
Equity & Fairness	High	+1	Expands access to renters and low-capital households	Inclusive ownership model distributes benefits broadly and reduces participation barriers.
Political Acceptability	High	+1	Community ownership and local benefits	Strong local alignment and participatory governance support high public acceptance.
Feasibility (Admin/Legal)	Medium	0	Dependent on provincial regulation and utility cooperation	Implementation is viable but contingent on regulatory frameworks and coordination with utilities.
Coherence (Portfolio Fit)	Medium	0	Aligns with energy program but not core fiscal tool	Fits within broader climate strategies but functions as a complementary, not primary, finance instrument.

Best Use Context

Best suited for municipalities aiming to enhance energy resilience and community participation, particularly as a complementary tool rather than a primary municipal revenue instrument. Most effective where enabling provincial policies (e.g., virtual net metering) support cooperative energy models and where adaptation is pursued indirectly through system resilience.

Context Factor	Relevance	Notes
Municipal Size	Medium	Applicable across sizes; smaller municipalities benefit from pooled investment.
Administrative Capacity Required	Medium	Requires coordination with utilities, developers, and co-op governance.
Development Pressure	Low	Not dependent on growth or land value dynamics.
Climate Risk Targeting	Low	Indirect adaptation benefits; not risk specific.
Fiscal Flexibility Required	Medium	Flexible participation reduces direct municipal fiscal burden.

Recommended Citation

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