

CANADIAN CENTRE FOR THE STUDY OF CO-OPERATIVES (CCSC) and NORQUEST COLLEGE

Community Energy Co-operative Policy Index

Report

Author(s): Dr. Marc -André Pigeon, Josie Ward, Dr. Martin Boucher

Date: June 19th, 2025



Executive Summary

This study develops a comprehensive policy index to measure the receptiveness of jurisdictions to community energy production, with a particular focus on renewable energy co-operatives (RECs). To our knowledge, it is the first index of its kind.

The index represents a powerful new tool for policy-makers and practitioners to identify barriers, advocate for supportive policy environments, and advance community-led energy transitions. The index will also serve anyone tasked with increasing support for community energy in general, and RECs in particular. Finally, it will inform niche management scholarship as it applies to community energy and RECs.

We calculated and ranked Canada's ten provinces based on their policy support for RECs. The index integrates qualitative and quantitative metrics to assess enabling (or disabling) environments for RECs in Canada. We focused on RECs because they contribute to distributed energy generation. As such, they can reduce transmission costs, enhance efficiency, lower emissions, and improve grid resilience.¹ RECs also offer several potential benefits for jurisdictions looking to decarbonize, enhance community investment opportunities, and strengthen the resilience of their electrical systems. Finally, RECs are associated with socio-economic benefits, like local economic development, increased civic engagement, and increased acceptance of renewable energy.²

But research indicates REC sectors often face formidable challenges. A 2022 census of the sector in Canada showed the number of RECs had fallen 25% from its peak of 129 in 2016.³ This, alongside other studies,⁴ suggests that the policy environment can exert a decisive influence over the REC sector and its role in the energy market.

RECs now face significant policy and regulatory barriers that hinder their formation and growth. These challenges are acute in jurisdictions where state-owned or large corporate actors dominate electricity markets. Even in jurisdictions that have been supportive of community energy and RECs, shifts in the policy environment can alter the trajectory of the sector.⁵

We undertook this study with these dynamics in mind. We were also motivated by John Kingdon's concept of policy indicators and their potential to influence policy outcomes set against the backdrop of niche management theory. Above all, we sought to strengthen the case for

¹ Andreas Goldthau, "Rethinking the governance of energy infrastructure: Scale, decentralization and polycentrism," *Energy Res Soc Sci* 1 (2014): 134–140.

² Derya Tarhan, "Renewable energy cooperatives: A review of demonstrated impacts and limitations, *Journal of Entrepreneurial and Organizational Diversity* 4 no. 1 (Aug 13 2015):104–120.

³ Renata Leonhardt, Marc-André Pigeon and Martin Boucher, *A Census of Renewable Energy Co-operatives in Canada*, Canadian Centre for the Study of Co-operatives (2022), available from usaskstudies.coop.

⁴ Martin Boucher and Marc-André Pigeon. "Scaling renewable energy cooperatives for a net-zero Canada: Challenges and opportunities for accelerating the energy transition," *Energy Research & Social Science* 115 (Sept 1 2024):103618.

⁵ Jens Lowitzsch and Florian Hanke, "Renewable Energy Cooperatives," in *Energy Transition: Financing Consumer Co-Ownership in Renewables*, ed. Jens Lowitzsch (Springer International Publishing, 2019), 139–62.

community-led energy transitions as a path to a more sustainable future for Canadians.

1.1 Results

Table 1: Summary of findings

	Renewable Energy Landscape	Community Energy Access	Community Energy Finance	Total
Max Points	40	30	30	100
British Columbia ⁶	27.5	15	14	56.5
New Brunswick	26.5	19	4	49.5
Nova Scotia	18.5	22	9	49.5
Prince Edward Island	10	12	26	48
Ontario	21	7	9	37
Alberta	14.5	7	14	35.5
Quebec	12	5	8	25
Newfoundland and Labrador	7	8	6	21
Manitoba	6.5	5	7	18.5
Saskatchewan	9	2	2	13

Our results (Table 1) show a split between provincial scores on the index, which consists of three major assessment areas: the policy landscape as it concerns renewable energy generally, the openness (or not) to community energy, and finally, the question of access to finance. Four of the 10 provinces (British Columbia, New Brunswick, Nova Scotia and Prince Edward Island) scored higher than 45 points (out of a possible 100) and within 9 points of one another. The four lowest scoring provinces (Manitoba, Newfoundland and Labrador, Quebec and Saskatchewan) all received less than 30 points and were within a 12-point margin. Alberta and Ontario scored in the middle of the split, with 35.5 and 37 points, respectively. No province earned the top spot in multiple sections.

British Columbia had the highest overall score and highest in the Renewable Energy Landscape section. This was in part due to British Columbia taking the most steps towards grid modernization and improvement, key structural changes that make it possible for community energy to ‘plug into’ the grid. BC Hydro’s 10-year capital plan includes upgrades and modernization of grid and transmission systems, and in spring of 2024, they hired respected contracting firm Stantec to provide engineering services for the project.

Nova Scotia tied for second with New Brunswick and scored highest in the Community Energy Access section. Nova Scotia recently launched the Community Solar Program. The program aims

⁶ For British Columbia we only looked at areas served by BC Hydro.

to establish community solar gardens, managed by local organizations, that enable customers can subscribe to, and receive, a portion of their electricity from a solar garden.

New Brunswick tied for second with Nova Scotia. The province stood out due to its *Electricity from Renewable Resource Regulation – Electricity Act*. The act enables the Locally Owned Renewable Energy Projects that are Small Scale (LORESS) program, which supports community generation and provides an avenue for REC participation.

Prince Edward Island came in fourth and the highest score in the community energy finance areas. Prince Edward Island is currently the only province to offer concessionary loans for renewable energy projects. Its Energy Efficiency Loan Program for Solar Photovoltaic Equipment provides loans to individuals and businesses at a fixed 5% annual interest rate, with a maximum 15-year repayment period. Prince Edward Island also has a favourable securities regulatory environment for RECs, making it easier for RECs to raise capital.

1.2 Authors

Dr. Marc-André Pigeon, PhD, is the director of the Canadian Centre for the Study of Co-operatives and an assistant professor in the Johnson Shoyama Graduate School of Public Policy (JSGS). His research interests center around the study of co-operatives, governance, and money and banking. Prior to joining the JSGS, Dr. Pigeon worked as the assistant vice president of financial sector policy at the Canadian Credit Union Association, where he was responsible for monitoring, researching and advocating on behalf of credit unions. He has also served as an advisor at the Department of Finance, a lead analyst for two major Parliamentary committees (Senate Banking, Trade and Commerce; House of Commons Finance), an economist at the Levy Economics Institute, and a reporter for Bloomberg Business News. Dr. Pigeon holds a PhD from Carleton University in mass communications, a master's degree in economics from the University of Ottawa, and a journalism degree from Carleton University. Dr. Pigeon has served on several non-profit and charitable boards, including the Co-operative Development Foundation (CDF), the Saskatchewan Co-operative Association, and Saskatoon Unitarians. In his spare time, he enjoys all-season camping with his family and their dog Pepsi and volunteering as a mechanic at Bridge City Bicycle Co-operative.

Josie Ward is a research assistant at NorQuest College and the University of Saskatchewan, where she combines her expertise in sustainable development and renewable energy. She holds a Master of Environment and Sustainability from the University of Saskatchewan, where her research focused on leveraging renewable energy projects as tools for community development. She also holds a Master of West Nordic Studies, Governance, and Sustainable Management from the University of the Faroe Islands. Josie is passionate about identifying and implementing renewable energy solutions that directly benefit local communities. Her current research involves evaluating provincial policies aimed at advancing renewable energy cooperatives, with the goal of creating policy frameworks that support sustainable, community-driven energy initiatives.

Dr. Martin Boucher, PhD, is NorQuest's Research Chair in Sustainability and leads the Community Energy Innovation Centre at the college. As a national leader in community energy research and innovation, Martin has extensive expertise in the social and technical components of energy transition, community energy development and engagement, policy development, and applied research. Dr. Boucher holds a PhD in Environment and Sustainability from the University of Saskatchewan, with a focus on decentralized socio-technical energy transitions in the US, Canada,

and Sweden. His work has been instrumental in assisting in mitigating the environmental impacts of community energy technology implementation, allowing communities to better understand the potential effects of green energy transition on the environment, economy, and society. He is the founding and current President of Community Energy Cooperative Canada, a national non-profit cooperative representing community energy cooperatives.

1.3 Acknowledgements

Thank you to all the workshop participants from Community Energy Cooperative Canada for your valuable contributions, insights, and enthusiastic engagement. This research was made possible by funding from an Insight grant from the Social Science and Humanities Research Council. This grant was led by Dr. John Parkins at the University of Alberta. He has provided unwavering support of this research and for that we are most grateful.

Copyright © 2025 Canadian Centre for the Study of Co-operatives

All rights reserved. No part of this publication may be reproduced in any form or by any means without the prior written permission of the publisher.

Canadian Centre for the Study of Co-operatives

101 Diefenbaker Place
University of Saskatchewan
Saskatoon SK Canada S7N 5B8
Treaty 6 Territory and Homeland of the Métis
t: (306) 966-8509
e: coop.studies@usask.ca
w: <http://www.usaskstudies.coop>

NorQuest College, Applied Research & Innovation

10215 108 Street NW
Edmonton, AB, Canada T5J 1L6
Located on Treaty 6 Territory, traditional lands of First Nations and Métis Peoples
t: (780) 644-6000
e: research@norquest.ca
w: www.norquest.ca/research

Table of Contents

1. Executive Summary.....	2
2. Introduction	7
3. Developing the Index	10
4. Renewable Energy Landscape	14
5. Community Energy Access	22
6. Community Energy Finance	27
7. Limitations.....	31
8. Conclusion	32
Bibliography.....	33

2. Introduction

Community energy has emerged as an important component of the global energy transition. Community energy offers a decentralized approach to energy production and consumption while also advancing socio-economic goals. Renewable energy co-operatives (RECs) are a type of community energy project that enable citizens to democratically own renewable energy projects and play an active role in the energy transition. RECs, and community energy more broadly, have many potential benefits, including increased citizen participation, reduced public opposition, and local economic development, innovation, and community building.⁷

Research shows switching to include more local energy production offers potential benefits like:

- decreased transmission costs
- improvements in transmission efficiency
- increased grid resilience

While RECs have many advantages, they face several challenges. One challenge is strong path dependency (historical influence) favouring large-scale developments. For many jurisdictions, existing infrastructure and institutions favour incumbent utilities and large-scale generation. This leaves small-scale projects at a disadvantage. However, this disadvantage is not inevitable. Changes to regulation, utility market structure, and streamlined processes can help level the playing field.⁸

RECs also struggle with inadequate financial infrastructure, a shortage of skilled personnel, and a general lack of public awareness and understanding of the co-operative model.^{9,10} In addition, the model has faced some criticism over member composition, with most REC members and leaders consisting of well-educated, male, and affluent individuals. This bias may have implications for the

⁷ Vasco Brummer, “Community energy—benefits and barriers: A comparative literature review of Community Energy in the UK, Germany and the USA, the benefits it provides for society and the barriers it faces,” *Renewable and Sustainable Energy Reviews* 94 (2018): 187–196.

⁸ James Newcomb, Virginia Lacy, Lena Hansen and Mathias Bell, “Distributed energy resources: Policy implications of decentralization,” *Electricity Journal* 26, no. 8 (2013): 65–87.

⁹ Benjamin Huybrechts and Sybille Mertens, “The relevance of the cooperative model in the field of renewable energy,” *Annals of Public and Cooperative Economics* 85, no. 2 (2014): 193–212.

¹⁰ Ingrid Mignon and Andreas Rüdinger, “The impact of systemic factors on the deployment of cooperative projects within renewable electricity production—An international comparison,” *Renewable and Sustainable Energy Reviews* 65, no. C (2016): 478–488.

growth of energy democracy, an ideal RECs often champion.^{11–1213}

Some scholars also argue that the positive connotations associated with the label "community energy" do not always translate into real community ownership or local benefits.¹⁴ For example, not all RECs are genuinely committed to co-operative principles. Recent studies have for example highlighted the potential of "co-operatives of convenience." These co-operatives often have private-sector ownership and adopt the co-operative label primarily to gain access to specific support schemes.¹⁵

Despite these potential issues, the model has enjoyed strong growth in many jurisdictions, emergent for example as the dominant form of community energy in Europe.¹⁶ This development has primarily occurred in western European countries that pioneered the use of community-owned renewable energy to help develop their renewable energy sectors. In Germany for example, renewable energy production accounted for 44% of the country's total generation in 2022, up from 6% in 2000.¹⁷ In 2021, almost 40% of Germany's total installed renewable energy capacity was owned by private citizens, or about 18% of the country's total generation. This outcome that can be traced back to a mix of policy instruments favouring their development, including feed-in-tariffs (FITs) that paid locked-in preferential rates for their energy, priority grid access, and concessionary loans that provided a stable environment for small-scale co-op investors.¹⁸ Denmark has introduced similar initiatives. Following these successes, many other countries began offering FIT programs and other incentives.¹⁹

These examples suggest community-owned energy can play a key role in total energy production in a favourable policy environment and provided they are not blocked by powerful incumbent utilities.^{20–22} A study of RECs across four European countries found that the growth of RECs in each

¹¹ Julie L. MacArthur and M. Derya Tarhan, "Institutionalizing energy democracy," in *Routledge Handbook of Energy Democracy*, ed. A. Feldpausch-Parker, D. Endres, T. R. Peterson and S. L. Gomez (Routledge, 2021), 172–186.

¹² Derya Tarhan, "Community renewable energy's problematic relationship with social justice: insights from Ontario," *Local Environment* 27, no. 6 (2022): 767–783.

¹³ Anna L. Berka and Emily Creamer, "Taking stock of the local impacts of community owned renewable energy: A review and research agenda," *Renewable and Sustainable Energy Reviews* 82, Part 3 (2018): 3400–3419.

¹⁴ Berka and Creamer, "Taking stock," 765–783.

¹⁵ Derya Tarhan, "'Cooperatives of convenience' and corporate appropriation of Ontario's community renewable energy policy," *Energy Research & Social Science* 119 (2025): 103849.

¹⁶ Elena Caramizaru and Andreas Uihlein, *Energy communities: an overview of energy and social innovation*, JRC Publications Repository, Publications Office of the European Union (2020).

¹⁷ "Renewables: Germany," International Energy Agency, accessed May 9, 2025 <https://www.iea.org/countries/germany/renewables>.

¹⁸ "Neue Studie Zeigt: Bürgerenergie Bleibt Zentrale Säule Der Energiewende," Agentur Fuer Erneuerbare Energien, accessed May 9, 2025 <https://www.unendlich-viel-energie.de/presse/pressemitteilungen/studie-buergerenergie-bleibt-zentrale-saeule-der-energiewende>.

¹⁹ Bauwens, Gotchev, and Holstenkamp, "What drives the development of community energy in Europe?" 136–147.

²⁰ Boucher and Pigeon, "Scaling renewable energy cooperatives for a net-zero Canada," 103618.

²¹ Brummer, "Community energy—benefits and barriers," 187–196.

²² Carsten Herbes et al., "Responding to policy change: New business models for renewable energy

country aligned with the introduction of support schemes in those nations. Conversely, the removal of these schemes resulted in a decline in RECs.²³

In this report, we develop and apply a prototype for a community energy co-operative policy index. While developed in the Canadian context, it is general enough to be applied, with suitable modifications, to other jurisdictions. We hope this index stimulates discussions among stakeholders about the role of community-owned energy in the energy mix.

2.1 Background and focus

RECs are a business model that allows citizens to democratically own and economically participate in renewable energy generation. In this century, RECs have grown in Canada.

Canada's REC Timeline:

- **2000s:** Canada's REC sector takes root.
- **2009:** Ontario adopts a feed-in-tariff program as part of its [green energy](#) act.²⁴
- **2010s:** Rapid sector growth, with most growth concentrated in Ontario.
- **2016:** Co-operatives and Mutuals Canada (CMC) publishes the first survey of the then-burgeoning REC sector.
- **2018:** Ontario's feed-in-tariff program ends. The province leads in support for the community-owned energy sector.
- **2022:** Canadian Centre for the Study of Co-operatives (CCSC) publishes a full census on RECs in Canada, identifying an estimated 97 RECs, of which 52 were active, and 45 were inactive. The report recommends the formation of a second-tier federation of RECs to support existing and new RECs.
- **2023:** CCSC hosts first energy forum in Ottawa, bringing together academics and RECs leaders
- **2023:** Formation of Community Energy Co-operatives Canada (CECC), a federation representing RECs country-wide.
- **2024:** The CECC hosts its first AGM and second energy forum in Halifax, Nova Scotia

The 2022 CCSC REC census tracked all Canadian RECs (Table 2) and gathered data on the current state of the sector. It found that RECs face many barriers in the current policy and regulatory environment. In the face of these barriers, many RECs have become inactive or shut down. The census also revealed that wide variations in provincial policy regimes tended to isolate RECs, forcing many to focus narrowly on their local context but also creating a clear opportunity for RECs to collaborate given many shared challenges and opportunities (despite the large differences in policy environments). This led to the formation of Community Energy Co-operatives Canada in 2023, a federation of RECs working together to support the expansion of the sector.

Table 2: Geographical distribution of RECs (#) by province.

cooperatives – Barriers perceived by cooperatives' members," *Energy Policy* 109 (Oct 2017): 82–95.

²³ August Wierling et al., "Statistical evidence on the role of energy cooperatives for the energy transition in European countries," *Sustainability* 10, no. 9 (2018).

²⁴ Leonhardt, Pigeon and Boucher, *A Census of Renewable Energy Co-operatives in Canada*.

Province	Number of Active + Inactive RECs
Ontario	62
British Columbia	8
Alberta	7
Quebec	6
Nova Scotia	5
Manitoba	3
Nova Scotia	3
Saskatchewan	3
Newfoundland	0
Prince Edward Island	0

This report expands on the census by documenting key policy barriers and areas for improvement, while also outlining opportunities to enhance support programs for provinces. It will enable provinces to make comparisons and learn from each other regarding how to best support RECs.

2.2 Why indices matter: The niche and the indicator

While RECs can play an important role in the energy sector, they represent a relatively small niche in the Canadian context. Governments have often played a crucial role in supporting niches by creating policies, financial incentives, and other forms of support to help these nascent sectors overcome the power of existing institutions.²⁵

In Canada, the REC sector has potential to have a meaningful impact on the energy sector. But so far, it has received limited support to further develop the niche.²⁶ Using Kingdon’s multiple streams approach, indices can be seen as tools that help to facilitate policy change. By quantifying and presenting data, indices highlight problems and guide the development of policy solutions needed for effective niche management.

The Community Energy Co-operative Policy Index combines both qualitative and quantitative data to provide a single unified “measure” that can help RECs and policymakers easily pinpoint opportunities for overcoming barriers and fostering the growth of RECs to exit the niche and become major contributors to Canada’s net-zero objectives.

3. Developing the Index

3.1 Methods

Inspired by the work of public administration scholars such as Kingdon, we began developing the index early in 2024. Following this area scholarship, which emphasizes the importance of

²⁵ Heather Lovell, “The governance of innovation in socio-technical systems: The difficulties of strategic niche management in practice,” *Science and Public Policy* 34, no. 1 (2007): 35–44.

²⁶ Boucher and Pigeon, “Scaling renewable energy cooperatives for a net-zero Canada.”

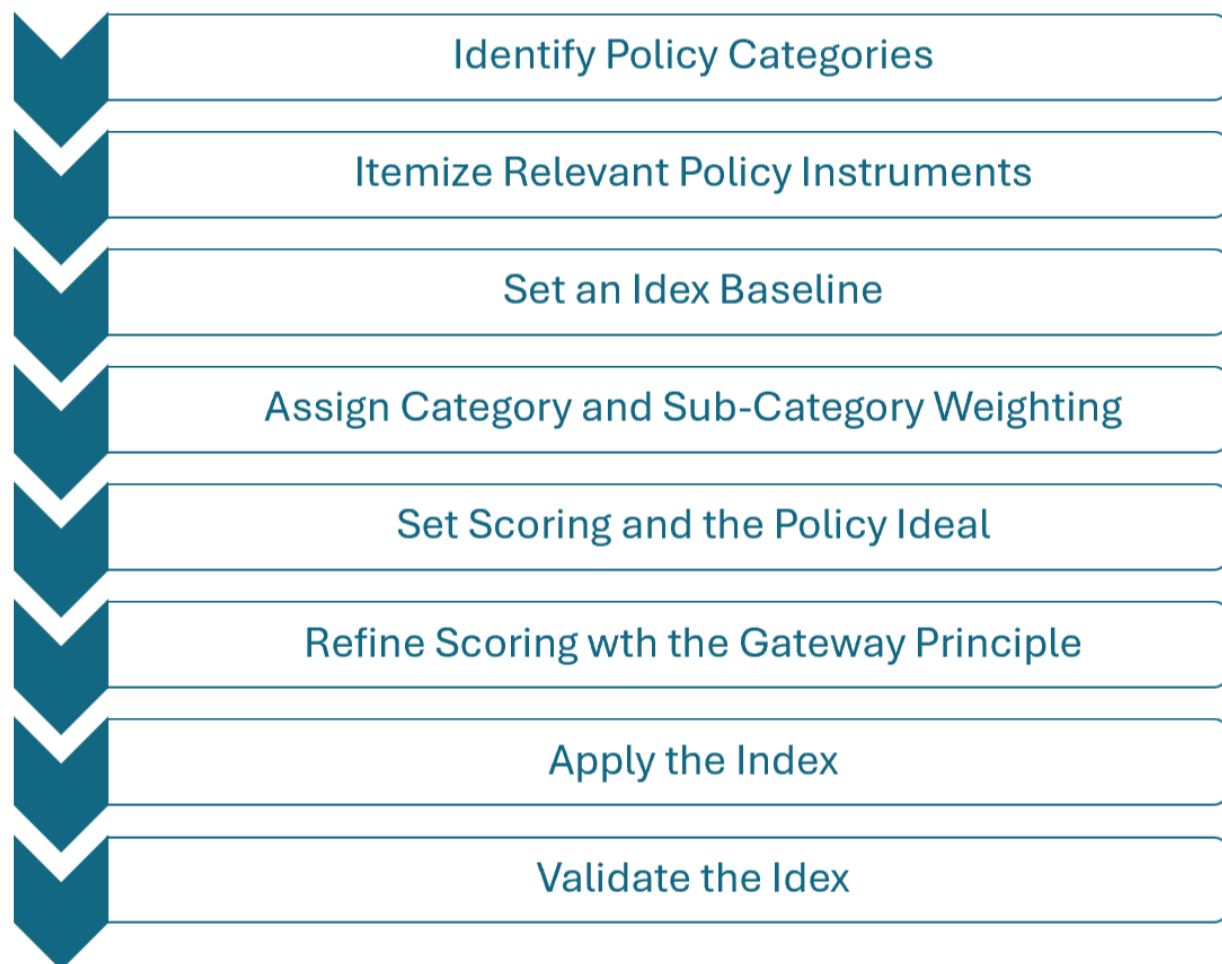
quantifiable indicators to support policymakers. We have been careful to document our decisions to facilitate replication of applications of the index in Canada and elsewhere. We also recognize that index development is iterative and relies on feedback from practitioners, scholars, and policy-makers. We consider this a work in progress.

Early on, we consulted an array of scholarly and grey (informal) literature focused on community energy, decentralization of the energy sector, renewable energy co-operatives, international models, finance, and relevant policy literature. From there, we set about building our policy index by gathering and weighting information in a way that would make our work tractable and reproducible.

The index construction process was as follows:

- **Identifying policy categories:** We began by identifying categories of relevant policy, eventually refining these into three areas, namely renewable energy landscapes, community energy access, and community energy finance.
- **Itemizing relevant policy instruments:** We focused on itemizing relevant policy instruments rather than outcome-based measures. That is, we ‘counted’ policy instruments but did not ask if they were successful. Our list of targeted policy instruments was informed by a blend of what we know from the scholarly literature, scrutiny of grey literature from REC websites, and the policy arena in our target jurisdiction of Canada.
- **Setting an index baseline:** To facilitate interpretation, we set the total maximum score for any jurisdiction at 100 points. We assigned the following weights to each of the three policy categories:
 - renewable energy landscape = 40 points
 - community energy access = 30 points
 - community energy finance = 30 points
- **Assigning category and sub-category weights:** We drew on what we learned from the scholarly and grey literature, as well as feedback from a policy workshop, when assigning weights to the policy categories and their respective subcategories.
- **Setting scoring and the policy ideal:** For each policy instrument, we defined a perfect score that reflects what might be considered (based on the literature and our refinement process) an ideal policy setting conducive to community energy and RECs in particular. In some cases, we defined the ideal policy setting as the presence of incentives versus none at all (e.g., incentives for storage by consumers and independent producers).
- **Refining scoring with the gateway principle:** To score policies that fell short of the ideal and help mitigate subjectivity, we applied a second rule of thumb known as the “gateway principle.” If the ideal case represents a metaphorically wide-open and welcoming door or gate for community energy, the gateway principle asks us to consider whether a given policy has, metaphorically, moved the gate out of the locked position. If so, how far open is it?
- **Applying the index:** We applied our index to Canada’s 10 provinces, each of which has a distinct energy policy environment and electrical system. Our evidence reflects the state of each policy environment as of December 31, 2024. Territories were excluded from our inaugural index; however, we plan to incorporate them in future versions.
- **Validating the index:** Early on, we tested and sought to refine our index at a national workshop consisting of energy practitioners and experts.

Figure 1. Index development stages



3.2 Data collection

Desk research

Data collection began with a survey of existing regulations, policies, annual reports, and other related documents in each province. We then used the results of this survey to refine our *a priori* categories (and later, subcategories) of the index and provincial evaluations.

For each province, we reviewed websites for the provincial government, its province-owned utility company (where applicable), and/or the utilities regulator (for open markets). When applicable, we also expanded our research to other relevant offices and organizations and reviewed provincial legislation.

We continued to survey provincial and utility websites for updates and changes over the course of the evaluation period (February to December 2024).

Workshops

To test early results from our searches, we conducted a workshop with 90 participants (39 in person, 51 online) in June 2024 at Dalhousie University in Halifax, including:

- 23 REC leaders
- 10 researchers
- 2 policy-makers
- 8 students

The workshop consisted of two stages.

Stage 1: We provided a preliminary version of the index, including its major categories and weightings, for general feedback. The preliminary version had three major categories: renewable energy landscape, community energy support schemes, and co-operative ecosystem. These were later revised to the existing major categories.

Stage 2: We provided attendees provincial-level summaries of our findings to date, asking for input on completeness and accuracy. The practitioners provided feedback highlighting barriers and challenges RECs face under the current landscape, as well as opportunities that were not captured in the initial data collection.

The team also engaged in informational discussions with practitioners during the forum. Our participation in the forum and workshops provided us with greater insight into the challenges RECs face and how they use existing support schemes offered by their respective provinces. We used feedback from the forum to refine the index framework and major categories. The workshop was part of the Cooperative Energy Forum hosted by Community Energy Cooperative Canada.

3.3 Categories and subcategories

Guided by our core scope and drawing on workshop feedback and additional desk research, we honed our index to focus on three broad policy categories:

- Renewable Energy Landscape
- Community Energy Access
- Community Energy Finance

The Renewable Energy Landscape section was developed based on academic and grey literature on the barriers to community energy development in Canada, and academic literature on decentralization of the electricity sector. The Community Energy Access and Community Energy Finance categories were developed based on academic research from across Europe and North America demonstrating how access to the energy market and financial incentives help secure investment and drive the growth of renewable energy co-operatives.

Subcategories, which we identified within the scope of our research, were derived from a combination of academic and grey literature, with consideration given to data availability (Table 3). For detailed information on subcategory scoring, see Appendix 1.

Table 3: Categories and subcategories

Categories and subcategories	Score
Renewable Energy Landscape	40
Planned procurement of renewable energy	5
Inclusion of storage	5
Existing programs that enable the use of independent power producers	5
Existing programs that enable external producers of storage	5
Flexibility of enabling legislation	10
Grid modernization efforts	10
Community Energy Access	30
Programs to support access to technical, operational or administrative support	5
Programs/opportunities specifically for community energy or renewable energy co-operatives	10
Net metering/net billing/self-generation	15
Community Energy Finance	30
Access to concessionary loans	10
Access to capital and operation grants	10
Flexibility of securities legislation	10

4. Renewable Energy Landscape

The Renewable Energy Landscape section evaluates each province's openness to renewable energy broadly speaking. To situate the landscape discussion, we conceptualize different stages of progress towards greater support for energy democracy and RECs (Figure 2), beginning with a policy commitment to renewable energy *in general*.

Figure 2. Progress stages

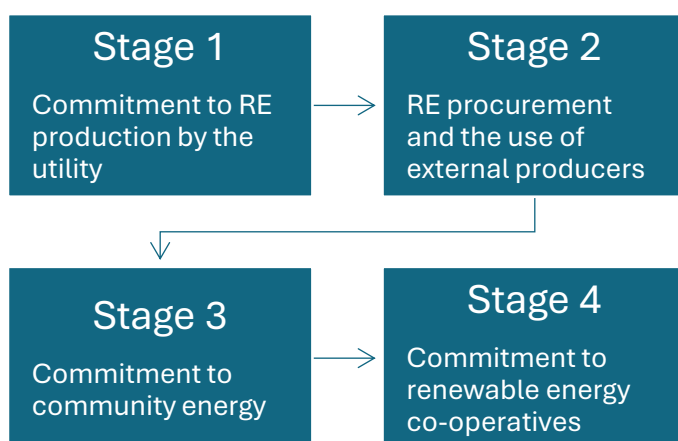


Table 4 below shows that the first two landscape subcategories consider the planned procurement and storage of renewable energy. The following two subcategories examine current programs that promote independent power producers in the province at all scales, as well as the use of external producers for energy storage. We also examine the flexibility of the legislative and regulatory environments, evaluating how much they act as barriers or enablers to REC development. Finally, we look at the current state of grid modernization as it relates to increased distributed energy resources (Table 4).

Table 4: Renewable energy landscape criteria

Criteria	Weight
Planned procurement of renewable energy	5
Inclusion of storage	5
Existing programs that enable the use of independent power producers	5
Existing programs that enable external producers of storage	5
Flexibility of enabling legislation	10
Grid modernization efforts	10

4.1 Planned procurement of renewable energy

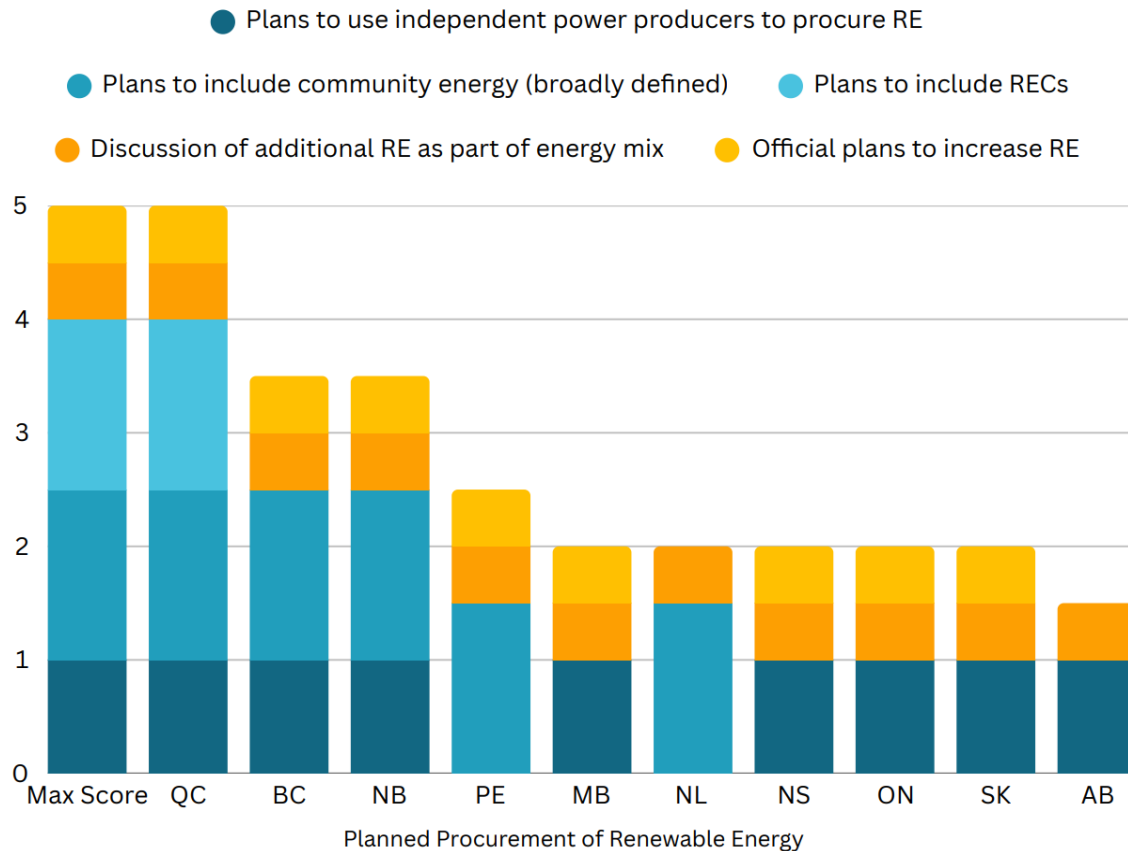
We use the planned procurement subcategory to assess the level of opportunity for renewable energy development in a particular province. While many provinces have outlined plans to increase their renewable energy capacity, notable differences have emerged between provinces. For example, Manitoba’s grid is composed mostly of large-scale hydroelectric renewable energy, while Nova Scotia derives a significant portion of its energy capacity from non-renewable sources.

In regions where the existing energy mix is already dominated by renewables, there are fewer opportunities for new renewable energy procurement. In contrast, provinces where renewables are being introduced to replace existing non-renewable generation may present more opportunities for REC involvement.

To assess provincial openness to renewable energy, we looked at utility company published reports, including annual plans, 10-year forecasts, and other related documents. We assessed provinces based on whether they had plans to increase their renewable energy capacity and, if so, how they will expand renewable energy production.

Figure 3 shows the results of our analysis. Informed by the gateway principle, we allocated points to all 10 provinces for “Discussion of additional renewable energy as part of energy mix” and “Official plans to increase renewable energy.” Following the gateway principle, both represent, metaphorically, a movement of the gate away from “closed and locked” to unlocked and partially open. However, only three provinces (British Columbia, New Brunswick and Quebec) had explicit plans to include community energy as part of their future renewable energy planning. Only Quebec had plans to include RECs.

Figure 3. Planned procurement of renewable energy



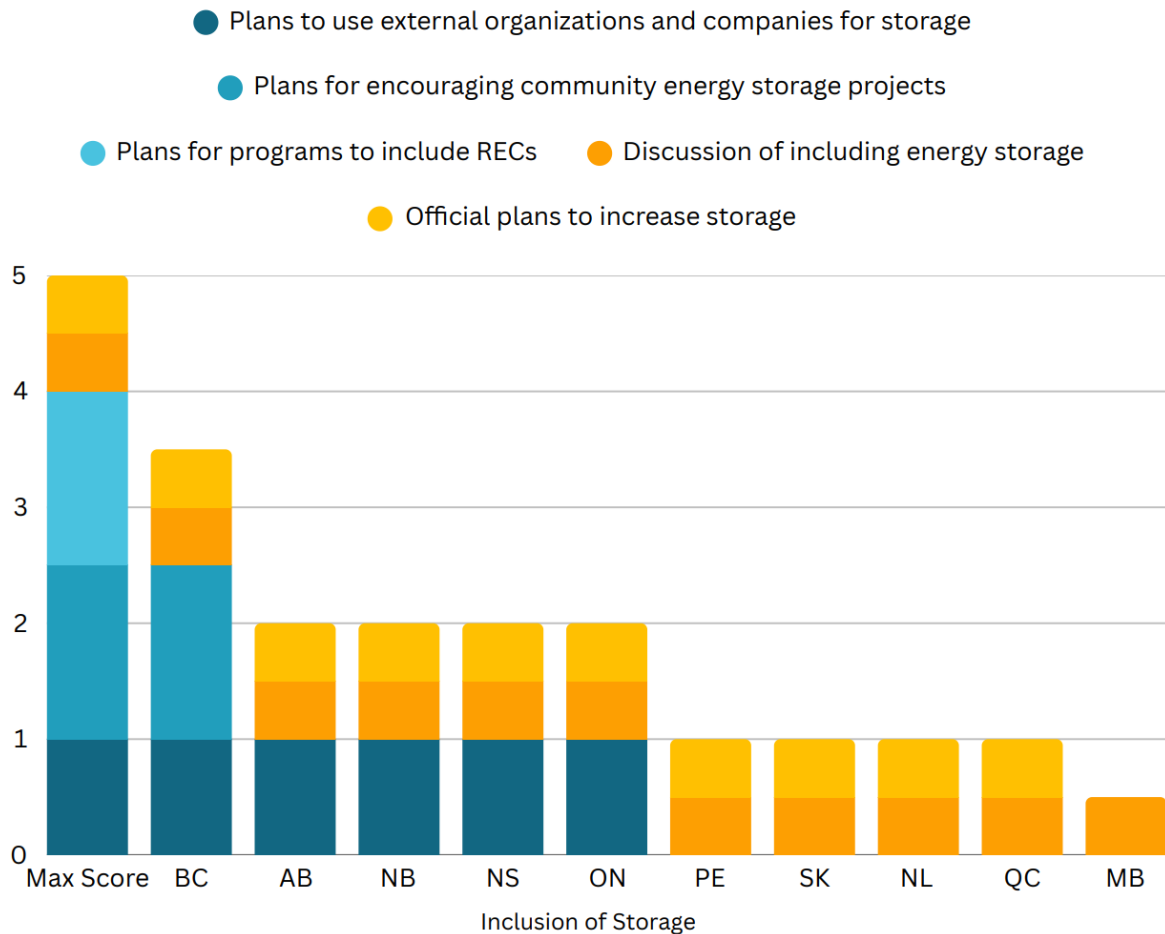
4.2 Planned inclusion of storage

In the next subcategory, we examined plans to incorporate energy storage into the provincial energy mix. Renewable energy storage is an emerging segment of the energy mix in Canada and a potential enabler of greater REC participation. To assess this category, we consulted published reports and strategic plans from provincial governments and provincial utility/utilities.

We found that most provinces are at a similar stage in their planning for storage (Figure 4). All provinces have included discussions of storage as part of the future energy mix, and nine of 10 have plans to include or expand their energy storage options.

Just half (n=5) of the provinces plan to use households, external organizations, or independent companies to meet their storage needs. Only British Columbia currently has a plan to include community energy projects in the form of enhanced rebates: up to \$75,000 for Indigenous communities, off-grid communities, and social housing providers to install battery projects. British Columbia earned the highest score in this section, as they have plans to increase energy storage using independent organizations, including community energy storage projects.

Figure 4. Inclusion of storage



4.3 Existing programs that enable the use of independent power producers

This section assesses the opportunities independent producers for generating renewable energy in a particular province. Two factors informed the criteria for this section:

- an evaluation of the Scotland Community and Renewable Energy Scheme (CARES)
- workshops with practitioners

The CARES program began in 2011 and has contributed 1,109 MW of community and locally owned renewable energy capacity.²⁷ It stood out as a program that supported a wide range of project types, including diverse ownership models and technologies. In our practitioner workshops, we learned of instances where RECs were being excluded from existing programs. For example, many practitioners mentioned that standard calls for power frequently exceeded the capacity of their REC.

²⁷ Local Energy Scotland, “Projects Overview,” Accessed May 9, 2025, <https://localenergy.scot/projects-overview/>.

Based on these observations and learnings, this section focuses on the diversity of programs, awarding maximum points to provinces that offer opportunities at multiple scales (measured by installed capacity), through a range of ownership models, and for a diverse range of technologies, both established and emerging.

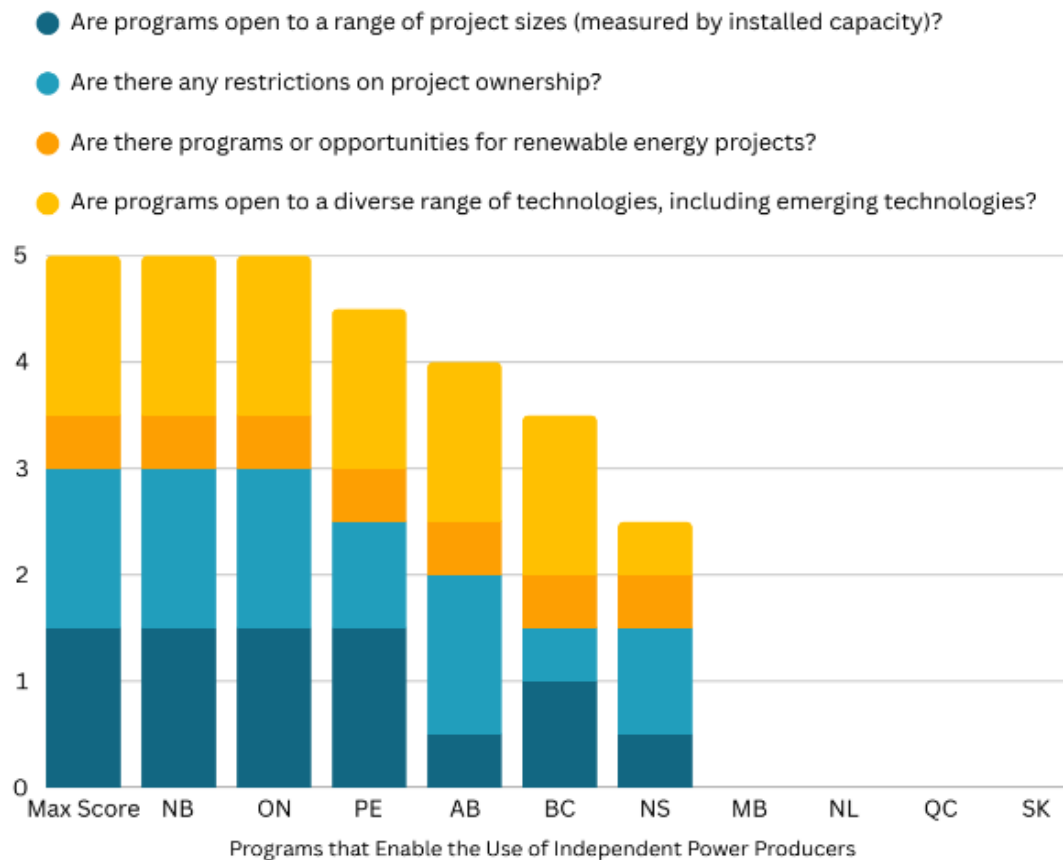
Our scoring indicates that there are few programs to support renewable energy projects (Figure 5). Four out of 10 provinces lack any programs or opportunities for renewable energy projects. Two provinces scored full points for their programs and opportunities, but the offerings differ significantly. For instance, in 2024, Ontario launched a competitive call for power to secure a total of 7,500 MW of energy from independent producers. This call included a stream for small-scale projects, with distinct eligibility criteria and evaluation requirements.²⁸ However, while the stream for small-scale projects is a step in the right direction, the minimum project size is 1 MW, significantly larger than most renewable energy co-operative initiatives. For context, SolarShare the largest REC in Canada, has just under 15 MW of installed capacity across 51 projects. However, the inclusion of a small-scale stream, with eligibility and evaluation criteria tailored to smaller projects, is a positive step forward.

By contrast, New Brunswick offers two distinct targeted programs: the Locally Owned Renewable Energy Small Scale (LORESS) program, which supports small-scale community energy development, and the Large Industrial Renewable Energy Purchase program, designed specifically for large-scale projects tied to industrial producers.

In both cases, the provinces earned full points, as their programs did not have any ownership restrictions and were open to a range of project sizes and a diverse range of technologies. These programs show the diversity of opportunities around renewable energy project development. They reveal how each province can have a unique approach to development tailored to their specific context.

Figure 5. Programs that enable the use of independent power producers

²⁸ The Ontario Request for Power was announced in 2024; however, the request is set to open in 2025. Since it was announced in 2024, we included it under the gateway principle.



4.4 Existing programs that enable external producers of storage

Energy storage is an emerging opportunity for community and distributed energy. This section awards points to provinces that have developed functioning programs or opportunities to advance distributed energy storage. Given that energy storage is a nascent technology, the scoring reflected any effort towards offering energy storage opportunities. This section is therefore evaluated on a binary basis: either there are storage programs, or there are no storage programs. As energy storage technology and the market develop and energy storage becomes a more mainstream part of the energy sector, this section should be revisited and adapted.

To date, only four provinces have developed any programs or opportunities for individuals or organizations to get involved in energy storage (Figure 6). The programs vary. British Columbia offers rebates to business customers to offset the cost of an energy storage system, while Ontario and New Brunswick have issued calls for proposals for energy storage projects. In Nova Scotia, the province has introduced a program open to households interested in installing small-scale storage systems in their homes.

Figure 6. Energy storage programs



4.5 Flexibility of enabling legislation

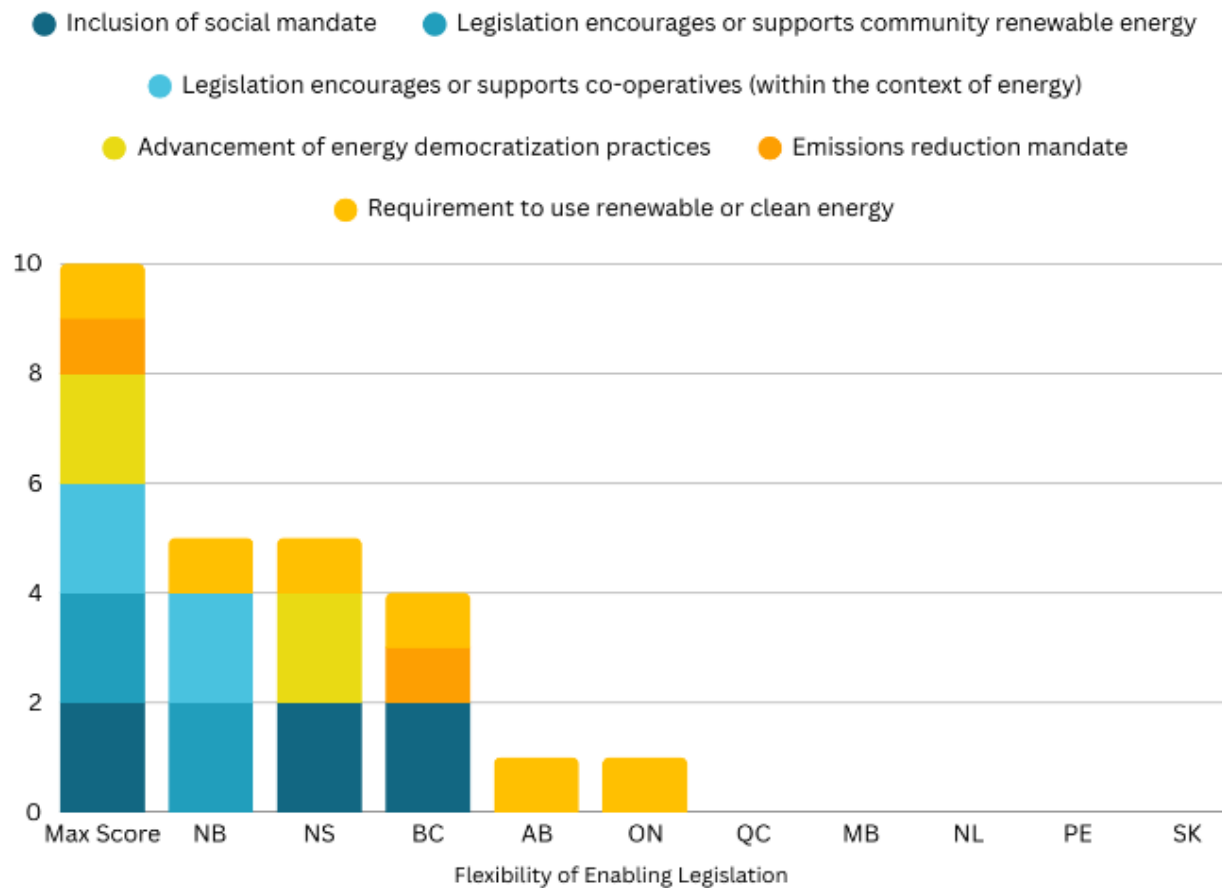
Provincial utility sectors are governed by the rules and regulations outlined in their respective provincial utility acts. Provincial utilities acts outline the requirements and priorities for utility operation in the province. These requirements can either support or impede the development of distributed energy projects.

For example, in Saskatchewan, the *Power Corporation Act* requires the provincial utility (SaskPower) to prioritize cost and efficiency when operating. The emphasis on cost and efficiency might prevent the expansion of community energy projects, as they are often viewed as more costly. In other cases, legislation has been updated in a way that can be interpreted as supporting RECs. British Columbia's *Clean Energy Act*, for example, includes a social mandate under its clean energy objectives. The objectives include goals such as job creation, rural development, and self-sufficiency.

Our results show that many provinces do not have specific requirements in their legislation to support distributed or community energy (Figure 7). British Columbia earned points for including a social mandate, an emissions reduction mandate, and a requirement to use renewable or clean energy. New Brunswick was the only province with legislation that encourages or supports community renewable energy, including co-operatives, through the *Electricity from Renewable Resources Regulation*. It requires the province to procure 40% of its total energy from renewable sources. Additionally, in February 2024, Nova Scotia passed the *Energy Reform Act*, which split the

Nova Scotia Utility and Review Board into two separate boards to increase oversight and prevent conflicts of interest. Under the same act, the province will establish an Independent Energy System Operator to oversee the electricity system, including new energy procurements. This was formerly the responsibility of Nova Scotia Power. Both these changes make the process of energy regulation and procurement more transparent. The changes also increase opportunities for new producers to join the market.

Figure 7. Flexibility of enabling legislation



4.6 Grid modernization efforts

Antiquated grid systems are often cited as a challenge to the inclusion of intermittent energy from renewables and the use of distributed energy resources. This includes programs to support renewable energy co-operatives. This subcategory assesses what steps, if any, provinces have taken to address grid modernization.

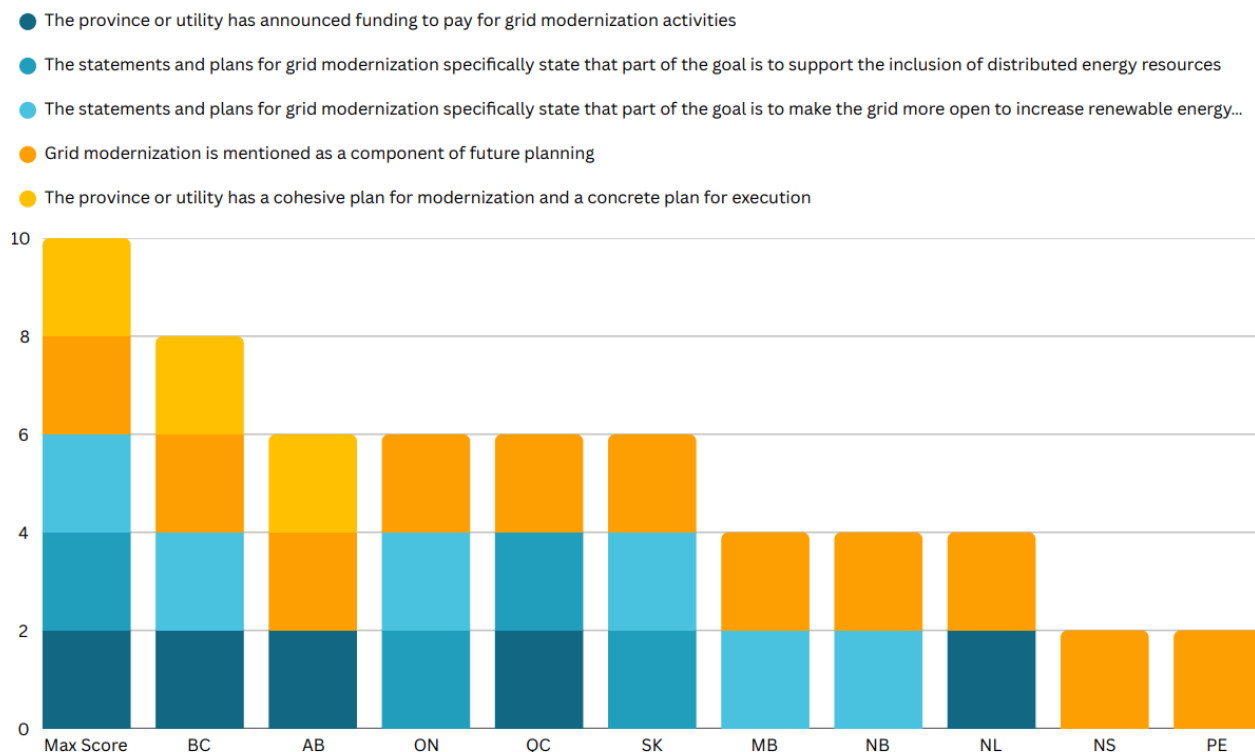
We used the definition of grid modernization advanced by Natural Resources Canada to develop five criteria to assess provincial grid modernization:

Grid modernization is defined as the process of implementing digital and physical energy

*infrastructure needed to ensure access to electricity, while cost effectively supporting aging asset replacement, diversification of generation sources, climate change adaptation and resilience of infrastructure.*²⁹

Results show grid modernization is a topic of discussion for utilities and energy planning (Figure 8). Yet, few provinces have a concrete plan for action. Only four provinces, Alberta, British Columbia, Newfoundland and Quebec, have allocated funding to support grid modernization. British Columbia has gone one step further and hired the design and engineering firm Stantec to provide transmission and distribution engineering, as well as project delivery services, it earn a strong showing in this category.

Figure 8. Grid modernization efforts



5. Community Energy Access

This section examines opportunities and initiatives aimed at the inclusion and promotion of community or distributed energy. We used this category to look at non-financial support available to community energy projects. It also assesses support schemes that offer opportunities and incentives targeting community energy projects, helping them overcome challenges posed by the

²⁹ Natural Resources Canada [submitted by Guidehouse Canada Ltd.], *Navigating Barriers to Utility Investment in Grid Modernization Final Report*, 2020, 9.

existing energy landscape. Scores for this section are based on three criteria (Table 5).

Table 5. Community energy access criteria

Criteria	Weight
Access to technical, operational or administrative support	5
Programs/opportunities specifically for community energy or renewable energy co-operatives	10
Net metering/net billing/self-generation	15

5.1 Access to technical, operational, or administrative support

In addition to the benefits of gaining access to the energy market, RECs can also benefit from accessing technical, operational, and administrative support. This category evaluates the level of such support provided to renewable energy projects within a province. One common challenge for RECs is recruiting members with the time and skills needed to assist in project development and operation, given the complexity of the policy and regulatory environment. To address this issue, some countries have established dedicated offices offering comprehensive support for community energy projects. One outstanding example is the Scotland CARES program. According to the Scottish Government:

CARES, which is delivered on our behalf by Local Energy Scotland, has a network of development officers across Scotland to provide free, expert and impartial advice and support to community groups, charities and other eligible organisations seeking to explore their renewable energy options.³⁰

While no similar program existed in Canada over the survey period, some provinces have launched similar initiatives related to energy efficiency. However, these tend to be focused on the individual, rather than on groups of individuals working through a co-operative or some other structure. For example, Nova Scotia has Efficiency Nova Scotia, which is funded by Nova Scotia Power and facilitated by Efficiency One. This initiative supports Nova Scotia residents in undertaking energy efficiency upgrades. While the work of Efficiency Nova Scotia is outside of the scope of this index and does not earn Nova Scotia any points, it serves as an example that could be applied to the community energy sector.

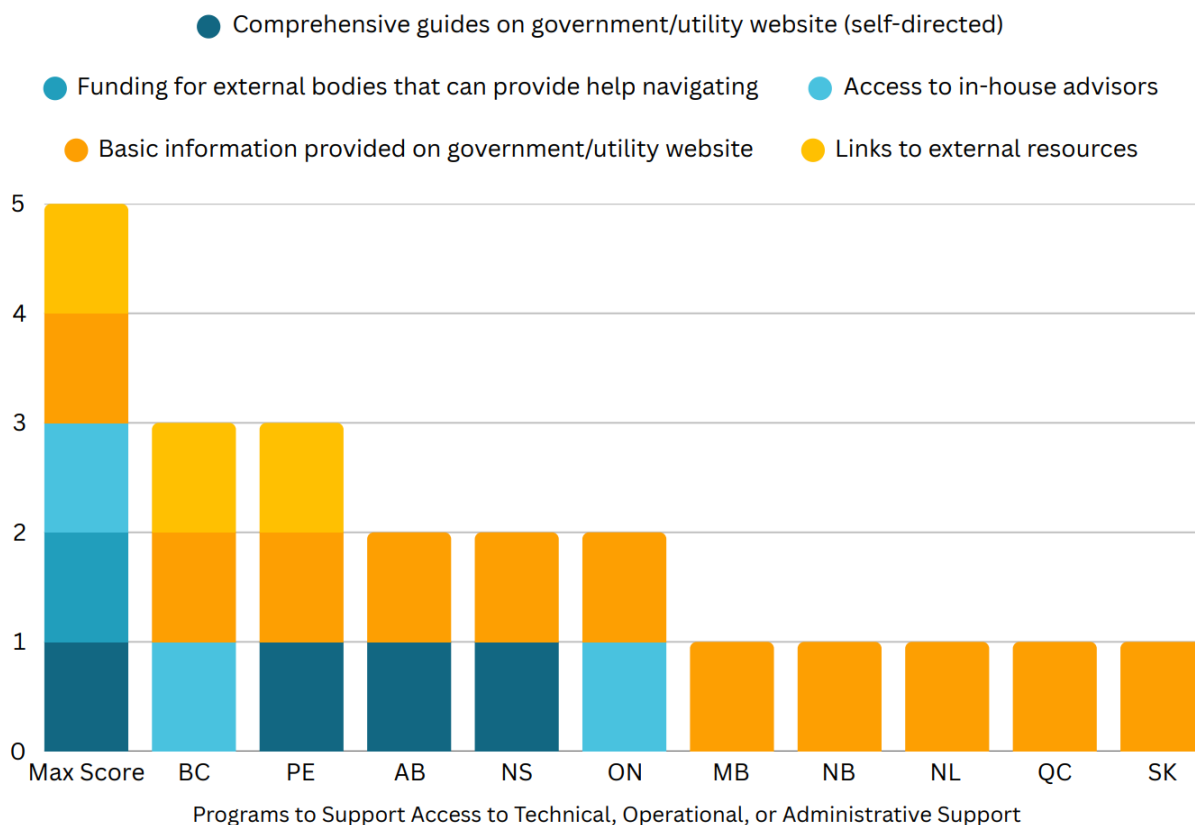
Currently, most provinces offer only limited support for community energy projects (Figure 9). Typically, they provide basic information on their websites. British Columbia and Ontario are the only provinces offering access to in-house advisors.

In British Columbia, this is restricted to Hydrogen projects. The BC Hydrogen Office, established in

³⁰ “Local and Small-Scale Renewables,” Scottish Government, accessed May 22, 2025, <https://www.gov.scot/policies/renewable-and-low-carbon-energy/local-and-small-scale-renewables/>.

October 2023, acts as a one-stop resource for advancing hydrogen projects within the province. While the large scale of hydrogen projects means renewable energy co-operatives are unlikely to benefit directly from this office, its creation is a positive step forward and is noted under the gateway principle. In Ontario, the OEB Innovation Sandbox provides information services and project-specific support to organizations. Organizations can also receive guidance on relevant regulations and apply for temporary relief from a regulatory barrier.

Figure 9. Programs to support access to technical, operational, or administrative support



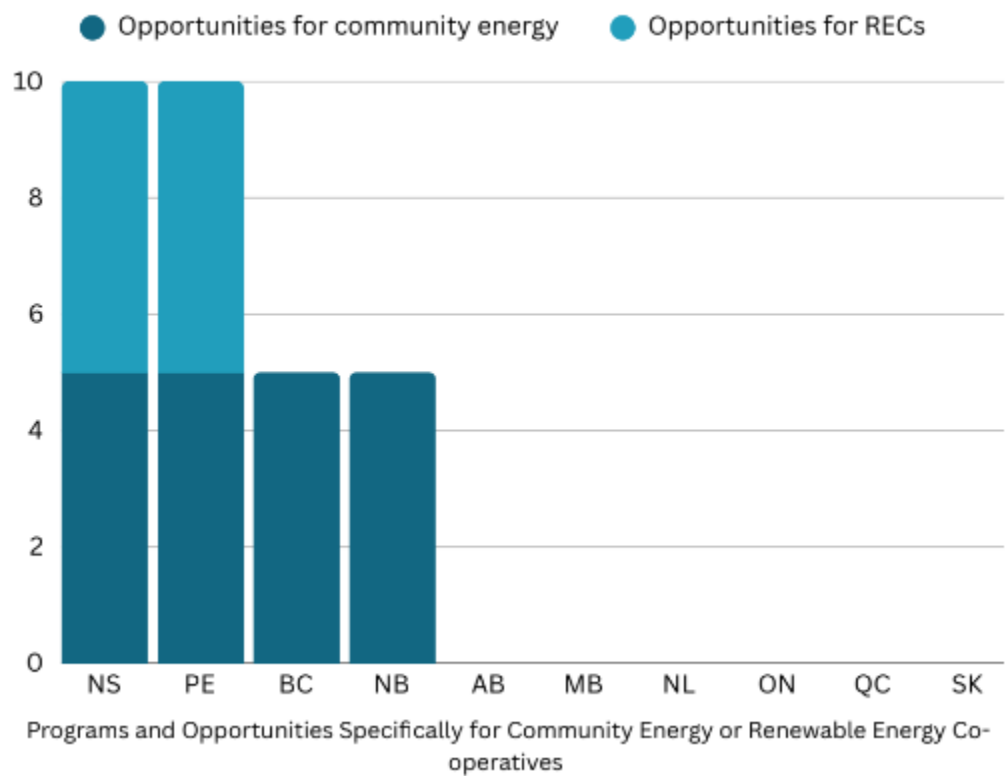
5.2 Programs/opportunities specifically for community energy or renewable energy co-operatives

In this section, we focus narrowly on programs designed to support community energy and/or RECs. Provinces are awarded five points for programs that support community energy. They gained an additional five points if co-operatives are eligible to participate in the program.

Currently, only four provinces offer a program designed for community or local generation (Figure 10). New Brunswick's LORESS program, for example, requires procurement from local and community organizations on a small scale. In Nova Scotia, the Community Solar program is

designed to help existing community organizations develop solar gardens. Both of these programs list co-operatives as an eligible organization type. In Prince Edward Island, the Community Renewable Energy Generation Fund is available to provide funding and access for six to 10 community energy projects per year. Finally, in British Columbia, the “NIA [non-integrated area] community renewable energy offer” provides opportunities for community energy projects in non-integrated areas.

Figure 10. Programs and opportunities specifically for community energy or renewable energy co-operatives



5.3 Self-generation programs

Self-generation programs, also known as net metering or net billing, enable individuals or businesses to install renewable energy projects and utilize that energy to offset their current energy consumption. These projects are generally, but not exclusively, solar and tied to the physical location of an individual's home or office. We include these programs in their own separate category because, based on experiences in other countries, net metering can play a powerful role in advancing community energy.

All provinces have some type of self-generation program. But important differences make some programs more attractive than others. For example, some utilities provide reimbursement for energy generated in the form of an energy credit. For each KW or MW of energy generated, suppliers are credited a KW or MW of energy—or some fraction thereof—to their account. Others base the

credit on a monetary amount that can fluctuate depending on time of day and other demand and supply considerations. Many provinces impose caps on the installed capacity of self-generation systems, even when a consumer's energy demand exceeds the cap.

Finally, some provinces have implemented virtual net metering³¹. Virtual net metering allows for energy generation to occur at a different site from energy consumption. Virtual net metering can be advantageous for RECs. Members might, for example, invest in a solar garden consisting of panels off-site from their residence and receive a share of the credits to offset their home energy consumption. In some cases, municipalities offer more favourable terms than the provincial net metering program. However, we only included provincial net metering programs in our scoring.

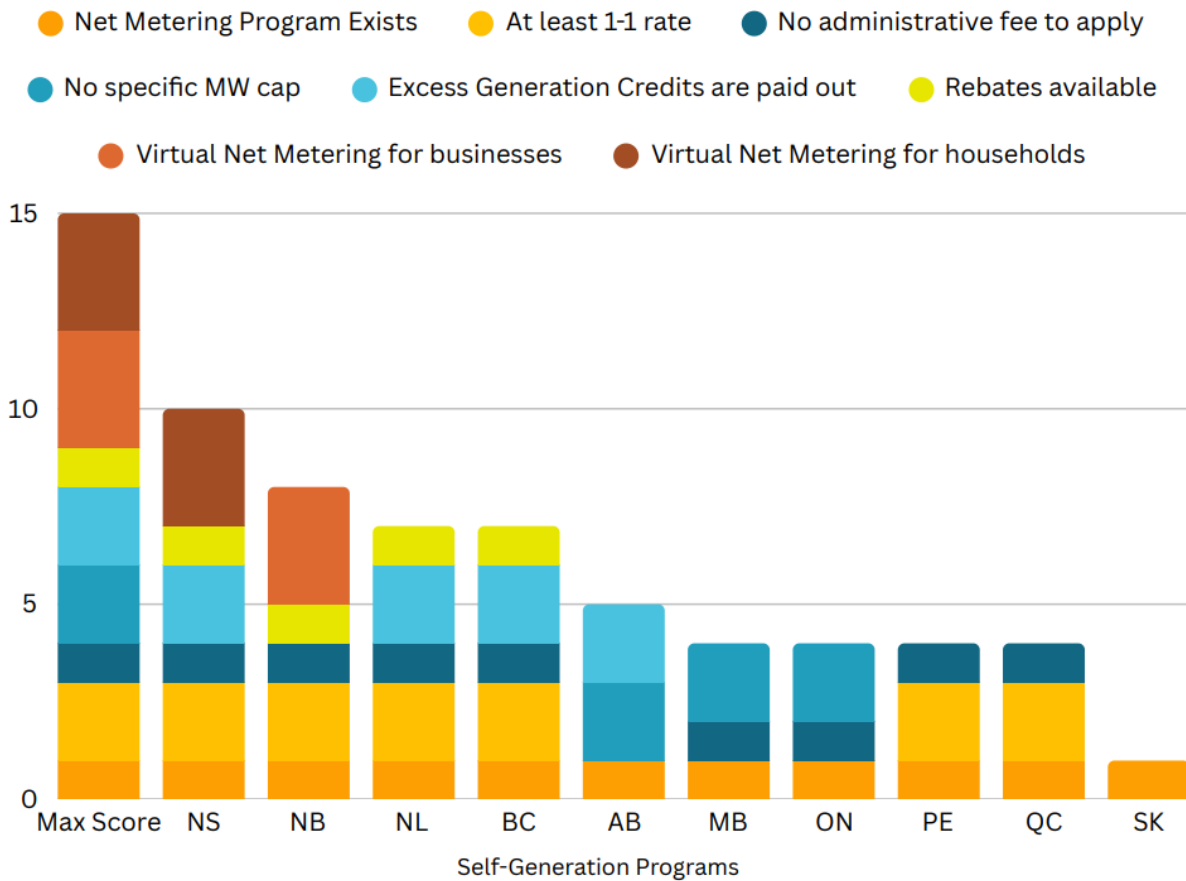
Scoring for this section was influenced by the program evaluation processes being conducted by BC Hydro to adapt their self-generation program. While the evaluation is currently in progress, the process has provided insights into program barriers and how consumers would like the program to change. Scoring was also informed by conversations with practitioners at the workshop, including how to operate within current restrictions and how they would like the programs to change going forward.

New Brunswick and Nova Scotia, the two highest-scoring provinces, are the only ones to offer virtual net metering (Figure 11). Virtual net metering is commonly requested by renewable energy co-operatives as a tool to help support REC activities. In Nova Scotia, it is only available through their Community Solar Garden pilot program, and in New Brunswick, virtual net metering is restricted to farms. Virtual net metering is being considered as part of the rate design in British Columbia, but has not been approved as of the time of writing.

Alberta, Manitoba, and Ontario are the only provinces that don't have a specific MW cap on their net metering program. Only six of the provinces (British Columbia, New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island, and Quebec) provide at least a 1–1 rate between energy supplied to the grid and used by the consumer.

Figure 11. Self-generation programs

³¹ In 2021 Ontario launched a virtual net metering demonstration project but no further opportunities for virtual net metering have been announced.



6. Community Energy Finance

Access to financing, both during project development and throughout the operational phase, is crucial for the success of RECs. Developing renewable energy projects can be costly, and RECs often face challenges in securing the necessary capital.

Historically, in many jurisdictions, RECs were able to rely on preferential rates and long-term purchase agreements. These agreements provided a stable and attractive environment for socially minded investors to come together and form renewable energy co-operatives. However, as these programs phase out, RECs often struggle to obtain the funding required for project development. This section examines three key areas of project finance: access to concessionary loans, access to capital and operational grants, and the flexibility of securities legislation (Table 6).

Table 6. Community energy finance criteria

Criteria	Weight
Access to concessionary loans	10
Access to capital or operational grants	10
Flexibility of securities legislation	10

6.1 Access to concessionary loans

Concessionary loans are loans offered on terms more favourable than those typically available in the market. These loans usually have lower interest rates, longer repayment periods, or other lenient conditions. Longer repayment periods are particularly helpful for renewable energy projects, which often have high up-front costs and take longer to reach return on investment.³² In addition, access to concessionary loans could improve the credibility and financial viability of RECs, potentially attracting additional private investments.

Currently, only Prince Edward Island provides concessionary loans to RECs (Figure 12). These loans are limited to solar photovoltaic equipment. The loan has an annual interest rate of 5% and a maximum repayment period of 15 years. While household loans are capped at \$25,000, businesses and farms may be eligible for larger loans. Manitoba has proposed a loan guarantee for Indigenous wind projects. At the time of this writing, however, this is still in the planning phase.

Figure 12. Access to concessionary loans



³² World Bank Group, “Climate Explorer: Concessional Finance,” World Bank, September 27, 2021, <https://www.worldbank.org/en/news/feature/2021/09/16/what-you-need-to-know-about-concessional-finance-for-climate-action>.

6.2 Access to capital or operational grants

Grants help RECs avoid interest costs and immediate financial obligations presented by loans, making renewable energy projects more accessible and financially feasible. While grants are most commonly available to provide startup capital, they can also be helpful once a project is operational. In this subsection, we allocated 5 points to provinces that provide access to capital grants, and 5 points for access to operating grants, for a total of 10 points.

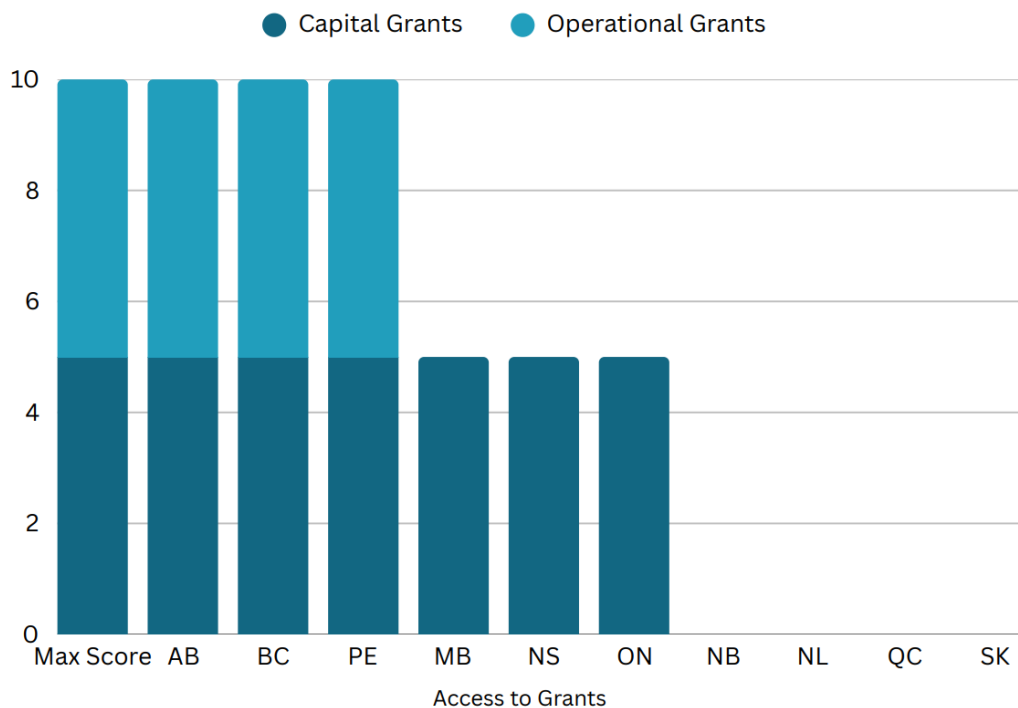
Currently, six of the 10 provinces (Alberta, British Columbia, Manitoba, Nova Scotia, Ontario, and Prince Edward Island) provide either capital grants, operational grants, or both for renewable energy projects (Figure 13). In some cases, these grants are restricted to specific ownership models or specific regions.

For example, in Prince Edward Island, the Rural Growth Initiative provides funding for rural organizations to "Enhance, maintain, or expand access to spaces that provide services which enhance rural communities."³³ In British Columbia, the First Nations Clean Energy Business Fund provides grants for clean energy projects to Indigenous governing bodies. While these funds are not open to everyone in province, we scored them under the gateway principle. They “unlock” an idea and represent an opening that could be expanded to include other regions and other community groups, including co-operatives.

Additionally, both Alberta and Ontario offer grant funding through their sandbox programs. In Manitoba, the Climate Action Fund provides funding for projects that support a low-carbon economy. Finally, in Nova Scotia, the Low Carbon Communities program grants funds to help in the initial stages of project planning.

Figure 13. Access to grants

³³ “Rural Growth Initiative,” Government of Prince Edward Island, accessed May 9, 2025, <https://www.princeedwardisland.ca/en/information/fisheries-tourism-sport-and-culture/rural-growth-initiative>



6.3 Flexibility of the securities legislation

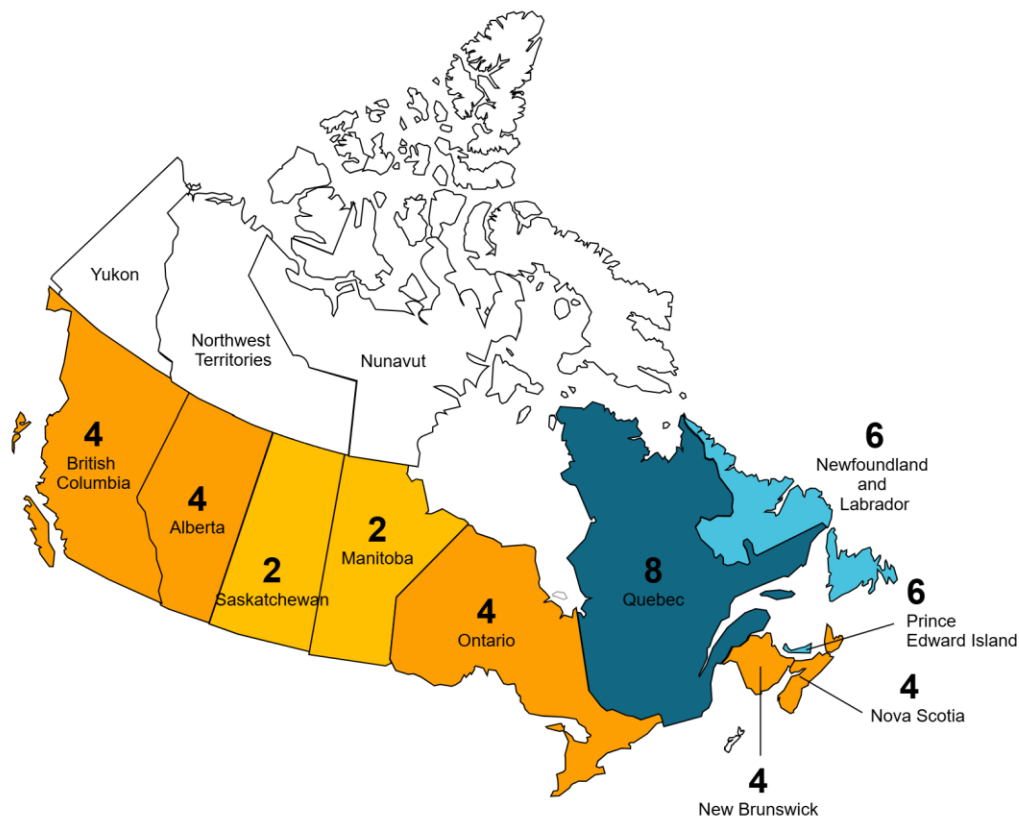
Securities legislation encompasses the laws and regulations that govern the issuance, trading, and oversight of financial securities. These laws are aimed at protecting investors and ensuring market stability, while making it possible for organizations to raise funds. However, for smaller organizations like RECs, the legal requirements associated with issuing securities can make capital raising challenging.

To address this, provinces have introduced exemptions, including for co-operatives. These exemptions enable co-operatives to raise capital while reducing reporting burdens. The *United Farmers of Alberta Co-operative Limited Act*, for example, exempts the United Farmers of Alberta co-operative from the province's *Securities Act*. This has allowed the co-operative to raise tens of millions of dollars from its members at low cost, with few legal fees or costly delays. Currently, no province has fully exempted co-operatives from provincial security acts. However, we regard the exemption granted to the United Farmers of Alberta (UFA) as the ideal, and we have measured other co-operative exemptions based on how closely they align with this benchmark.

Quebec comes closest to the UFA exemption (Figure 14). Co-operatives in that province are exempt from most provisions of its securities act. In other provinces, such as Prince Edward Island and Newfoundland, co-operatives are exempt from both the reporting and prospectus requirements. Alberta, British Columbia, New Brunswick, Nova Scotia, and Ontario also provide exemptions from these requirements, though they impose caps on the amount co-operatives can raise under the exemptions.

In contrast, Manitoba requires co-operatives to obtain approval from the Superintendent of Co-operatives at the Financial Institutions Regulation Branch and submit an offering statement before selling shares. In Saskatchewan, the situation is ambiguous. The province has a co-operatives exemption in place, but the legislation exempts co-operatives from a repealed section of that province's securities act. Based on our relationships with the co-operatives in this province, we also know that the fundraising process can be lengthy and costly. Given the ambiguity and our understanding of recent experience, we did not award them points for the exemption.

Figure 14. Flexibility of the securities regulation



7. Limitations

Our policy index has five main limitations. First, while we made every effort to assign category and subcategory weights that aligned with our understanding of the literature, it is quite possible that we erred. We look forward to feedback on our decisions.

Second, we focused narrowly on scoring the mix of enabling policies and programs anchored around an ideal policy setting and what we call the gateway principle. We exclude outcome-based measures. We cannot say anything about the effectiveness of a particular policy or program in advancing REC development. It will be important to test the index against outcomes in future iterations of this research.

Third, while anchored to the ideal scenario and gateway principle, scoring is unavoidably subjective. By testing the index against outcomes and through iteration, including application to other jurisdictions, we expect the scoring methodology to improve over time.

Fourth, while we draw on scholarly and grey literature from many jurisdictions, the development of the index is shaped by the Canadian context. Again, we expect future iterations of the index, applied in other jurisdictions, to improve, while helping to identify a set of pro-community energy (universal) policies, but with sensitivity to local context.

Finally, by focusing narrowly on the provincial policy mix, we ignore federal and municipal levels of government. We are not capturing the whole picture. Again, we expect future development of the index to address this limitation.

8. Conclusion

With the energy transition underway, jurisdictions are preparing for large shifts in the electricity sector. These include decarbonization, greater inclusion of intermittent renewables, and increasing demand for electricity. Provinces have an opportunity to adopt policies supporting a scale-up of the renewable energy co-operative sector.

RECs offer significant benefits for advancing the energy transition, as they can accelerate decarbonization and the integration of renewables. RECs can also be deployed quickly. Their structure allows for greater public support and legitimizes local renewable energy projects. However, the policy window for RECs is closing as provinces invest in grid modernization and redesign their business models for the future. If these changes do not align with supporting RECs, the sector may struggle to maintain its hard-fought gains.

The results of this index show how Canadian provinces are navigating this transformation and whether they are moving toward a future where community energy and RECs play a key role in the energy landscape. While the provinces are far from offering an ideal policy environment, there are promising signs across the country. We cite, as examples, innovative community energy support schemes in Nova Scotia, New Brunswick, and Prince Edward Island, the sandbox experimental programs in Alberta and Ontario, and the redesign of the self-generation program currently underway in British Columbia.

There are even promising signs in provinces that scored low on the index, such as Quebec and Manitoba. Both provinces have energy systems designed around large-scale hydroelectric generation and have resisted turning to independent power producers. However, both provinces have recently announced plans to procure wind power from independent producers in the coming years. While this shift is unlikely to have a significant impact on RECs, it does indicate a change in the approach of their respective crown corporations.

This index offers valuable insights for developing more informed policies to support RECs. It identifies the barriers facing RECs nationwide and outlines strategies to improve the environment for the sector's growth and development. The index also enhances understanding of how regional government policies can either support or hinder the development of RECs. We hope this work will spur more conversation and interest in policies that support RECs, providing an opportunity for further investigation, conversation, and learning across Canada.

Bibliography

- Agentur Fuer Erneuerbare Energien. “Neue studie zeigt: Bürgerenergie bleibt zentrale Säule der Energiewende.” (2021). Updated January 15, 2021. <https://www.unendlich-viel-energie.de/presse/pressemitteilungen/studie-buergerenergie-bleibt-zentrale-saeule-der-energiewende>.
- Bauwens, Thomas, Boris Gotchev, and Lars Holstenkamp. “What Drives the Development of Community Energy in Europe? The Case of Wind Power Cooperatives.” *Energy Research & Social Science* 13 (Mar 2016):136–147. <https://doi.org/10.1016/j.erss.2015.12.016>.
- Berka, Anna L., and Emily Creamer. “Taking Stock of the Local Impacts of Community Owned Renewable Energy: A Review and Research Agenda.” *Renewable and Sustainable Energy Reviews* 82, Part 3 (2018): 3400–3419. <https://doi.org/10.1016/j.rser.2017.10.050>.
- Boucher Martin, and Marc-André Pigeon. “Scaling Renewable Energy Cooperatives for a Net-Zero Canada: Challenges and Opportunities for Accelerating the Energy Transition.” *Energy Research & Social Science* 115, (Sept 2024): 103618. <https://doi.org/10.1016/j.erss.2024.103618>.
- Brummer, Vasco. “Community Energy – Benefits and Barriers: A Comparative Literature Review of Community Energy in the UK, Germany and the USA, the Benefits it Provides for Society and the Barriers it Faces.” *Renewable and Sustainable Energy Reviews* 94 (2018): 187–196. <https://doi.org/10.1016/j.rser.2018.06.013>.
- Caramizaru, Elena, and Andreas Uihlein, “Energy Communities: an Overview of Energy and Social Innovation.” JRC Publications Repository, Publications Office of the European Union (2020). Available from: <https://publications.jrc.ec.europa.eu/repository/handle/JRC119433>.
- Goldthau Andreas, “Rethinking the Governance of Energy Infrastructure: Scale, Decentralization and Polycentrism.” *Energy Research & Social Science* 1 (2014): 134–140. <https://doi.org/10.1016/j.erss.2014.02.009>.
- Government of Prince Edward Island, “Rural Growth Initiative.” Updated April 10, 2024. <https://www.princeedwardisland.ca/en/information/fisheries-tourism-sport-and-culture/rural-growth-initiative>
- Herbes, Carsten, Vasco Brummer, Judith Rognli, Susanne Blazejewski, and Naomi Gericke. “Responding to Policy Change: New Business Models for Renewable Energy Cooperatives – Barriers Perceived by Cooperatives’ Members.” *Energy Policy* 109 (2017): 82–95. <https://doi.org/10.1016/j.enpol.2017.06.051>.
- Huybrechts, Benjamin, and Sybille Mertens. “The Relevance of the Cooperative Model in the Field of Renewable Energy.” *Annals of Public and Cooperative Economics* 85, no. 2 (2014): 193–212. <https://doi.org/10.1111/apce.12038>.
- International Energy Agency. “Renewables: Germany.” International Energy Agency. Accessed May 9, 2025 <https://www.iea.org/countries/germany/renewables>.

Leonhardt, Renata, Marc-André Pigeon, and Martin Boucher. *A Census of Renewable Energy Co-operatives in Canada*. Canadian Centre for the Study of Co-operatives, 2022. Available from: <http://www.usaskstudies.coop>.

Local Energy Scotland. "Projects Overview," Accessed May 9, 2025.
<https://localenergy.scot/projects-overview/>

Lovell, Heather. "The Governance of Innovation in Socio-Technical Systems: The Difficulties of Strategic Niche Management in Practice." *Science and Public Policy* 34, no. 1 (2007): 35–44.
<https://doi.org/10.3152/030234207X190540>.

Lowitzsch Jens, and Florian Hanke. "Renewable Energy Cooperatives." *In Energy Transition: Financing Consumer Co-Ownership in Renewables*, edited by Jens Lowitzsch, 139–62. Cham: Springer International Publishing, 2019. https://doi.org/10.1007/978-3-319-93518-8_7

MacArthur, Julie L., and M. Derya Tarhan. "Institutionalizing Energy Democracy." In *Routledge Handbook of Energy Democracy*, edited by Andrea Feldpausch-Parker, Danielle Endres, Tarla Rai Peterson, and Stephanie L. Gomez, 172–86 . Routledge, 2021.

Mignon, Ingrid, and Andreas Rüdinger. "The Impact of Systemic Factors on the Deployment of Cooperative Projects within Renewable Electricity Production – An International Comparison." *Renewable and Sustainable Energy Reviews* 65 no. C (2016): 478–488.
<https://doi.org/10.1016/j.rser.2016.07.026>.

Natural Resources Canada [submitted by Guidehouse Canada Ltd.] *Navigating Barriers to Utility Investment in Grid Modernization Final Report*. Natural Resources Canada, 2020.
https://natural-resources.canada.ca/sites/nrcan/files/emmc/pdf/Navigating%20Barriers%20to%20Utility%20Investment%20in%20Grid%20Modernization_FINAL_EN.pdf.

Newcomb, James, Virginia Lacy, Lena Hansen, and Mathias Bell. "Distributed Energy Resources: Policy Implications of Decentralization." *Electricity Journal* 26, no. 8 (2013): 65–87.
<https://doi.org/10.1016/j.tej.2013.09.003>.

Scottish Government. "Renewable and low carbon energy" Accessed May 22, 2025.
<https://www.gov.scot/policies/renewable-and-low-carbon-energy/local-and-small-scale-renewables/>

Tarhan, Derya. "Community Renewable Energy's Problematic Relationship with Social Justice: Insights from Ontario." *Local Environment* 27, no. 6 (2022): 767–83.
<https://doi.org/10.1080/13549839.2022.2077713>.

Tarhan, Derya. "'Cooperatives of Convenience' and Corporate Appropriation of Ontario's Community Renewable Energy Policy." *Energy Research & Social Science* 119 (2025): 103849.
<https://doi.org/10.1016/j.erss.2024.103849>.

Tarhan, Derya. "Renewable Energy Cooperatives: A Review of Demonstrated Impacts and Limitations." *Journal of Entrepreneurial and Organizational Diversity* 4, no. 1 (2015): 104–20.
<https://jeodonline.com/wp-content/uploads/2016/06/5tarhan13aug2015.pdf>.

Wierling, August, Valeria Jana Schwanitz, Jan Pedro Zeiß, Celine Bout, Chiara Candelise, Winstone Gilcrease, and Jay Sterling Gregg. "Statistical Evidence on the Role of Energy Cooperatives for the Energy Transition in European Countries." *Sustainability* 10, no. 9 (2018).
<https://doi.org/10.3390/su10093339>.

World Bank Group. "Climate Explainer: Concessional Finance." World Bank, September 27, 2021.
<https://www.worldbank.org/en/news/feature/2021/09/16/what-you-need-to-know-about-concessional-finance-for-climate-action>.

Appendix 1: Evaluation Scorecard

Renewable Energy Landscape (40)

Planned Procurement of Renewable Energy (-/5)

Criteria	Points
Discussion of additional renewable energy as part of energy mix	.5
Official plans to increase renewable energy	.5
Plans to use independent power producers to procure RE	1
Plans to include community energy (broadly defined)	1.5
Plans to include RECs	1.5

Inclusion of Storage (-/5)

Criteria	Points
Discussion of energy storage as part of energy mix	.5
Official plans to increase storage	.5
Plans to use households, organizations, or companies for storage	1
Plans to include community energy storage projects	1.5
Plans to include RECs in storage	1.5

Programs that enable the use of independent power producers (-/5)

Criteria	Points
Are there programs or opportunities for renewable energy projects?	.5
Are programs open to a diverse range of technologies, including emerging technologies?	1.5
Are programs open to a range of project sizes (measured by installed capacity)?	1.5
Are there any restrictions on project ownership?	1.5

Programs for renewable energy storage projects (-/5)

Yes	No
5 points	0 points

Flexibility of the enabling legislation (-/10)

Criteria	Points
Inclusion of a social mandate	1
Emissions reduction mandate	1

Requirement to use renewable or clean energy	2
Mandate encourages or supports community renewable energy	2
Mandate encourages or supports co-operatives	2
Advancement of energy decentralization practices	2

Grid modernization efforts (-/10)

Criteria	Points
Grid modernization is mentioned as a component of future planning	2
The province or utility has a cohesive plan for modernization and a concrete plan for execution. (½ point if the province or utility has stated they have a current working group or consultant hired to develop such plans)	2
The province or utility has announced funding to pay for grid modernization activities	2
The statements and plans for grid modernization specifically state that part of the goal is to support the inclusion of distributed energy resources	2
The statements and plans for grid modernization specifically state that part of the goal is to make the grid more open to increase renewable energy generation	2

Community Energy Access (-/30)

Access to technical, operational or administrative support (-/5)

Criteria	Points
Basic information provided on government or utility website	1
Links to external resources	1
Comprehensive guides on government or utility website (self-directed)	1
Funding for external bodies that can provide support	1
Access to in-house advisors	1

Programs or opportunities specifically for community or local generation projects or renewable energy co-operatives (-/10)

Criteria	Points
Opportunities for community energy	5
Opportunities for renewable energy co-	5

operatives	
------------	--

Net metering (-/15)

Attribute	Points offered
Net metering program exists	1.5
At least 1–1 rate	1.5
No administrative fee to apply	1.5
No specific MW cap	1.5
Excess generation credits are paid out in cash	1.5
Rebates available	1.5
Virtual net metering for businesses	3
Virtual net metering for households	3

Community Energy Finance (-/30)

Access to concessionary loans (-/10)

Yes	No
10 points	0 points

Grants (-/10)

Criteria	Points
Capital grants	5
Operating grants	5

Flexibility of securities legislation(-/10)

Criteria	Points
Co-operatives are fully exempt from securities law	10
Co-operatives are exempt from the majority of the securities act	8
Co-operatives are exempt from registration and prospectus requirements	6
Co-operatives are exempt from registration and prospectus requirements, with a cap	4
Co-operatives must include an offering statement or prospectus	2