BUSINESS RENEWABLES CENTRE
CANADA

BRC-Canada 2023 Forum Summary Report

The Business Renewables Centre-Canada Forum held on April 20, 2023, in Calgary was designed to provide community participants with insight into the current drivers of the renewable energy market.

BRC-Canada would like to extend our sincere thanks to everyone who attended, sponsored, spoke, moderated and otherwise contributed to our sold-out event.

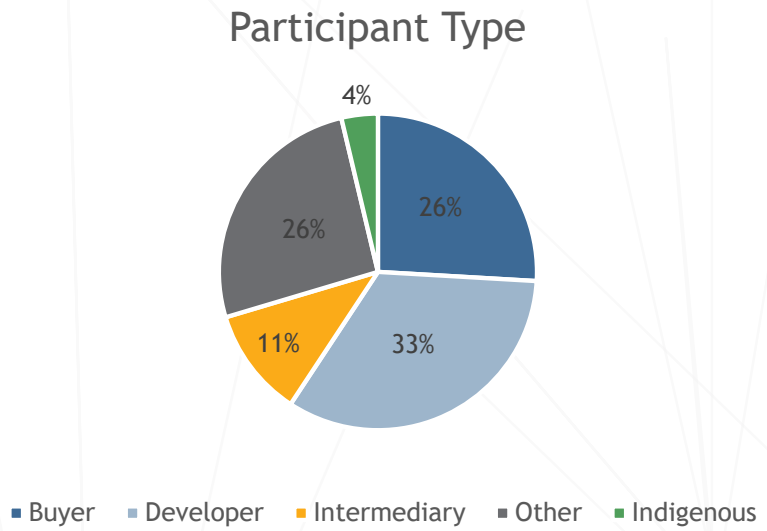
What are you hoping to learn today?

At left is a word cloud from the beginning of the day representing what participants were hoping to learn.

Who Was in the Room?

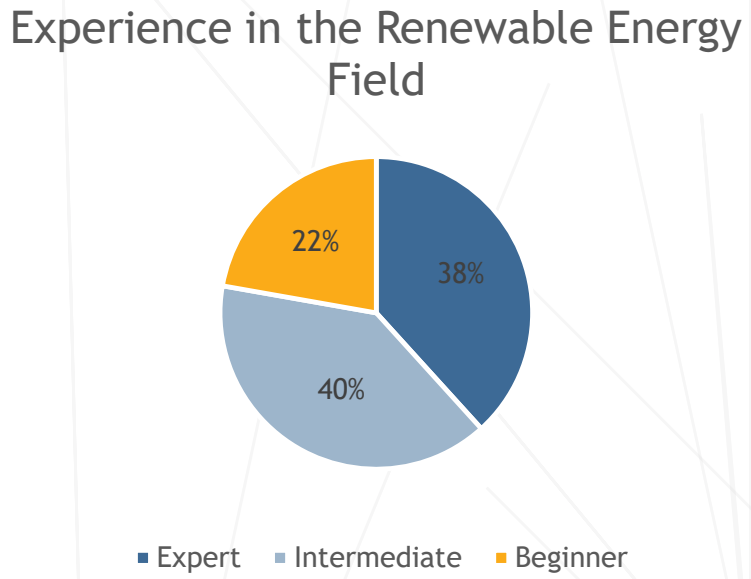
The BRC-Canada Forum was well-attended – sold out, in fact. In all aspects, BRC-Canada wouldn't be a success without the amazing participants that make up the community, and for our first forum since 2019, the community came out in force! We are already excitedly planning next year's forum and we can't wait to see you all in person again.

- Of the 81 registrants, 26 per cent were buyers, 33 per cent were developers, 11 per cent were intermediaries, 26 per cent were other and four per cent were Indigenous.



- The registrants included 57 people representing corporations. Another 12 were there on behalf of think tanks and business associations, while nine were from government and three from academia.

- In terms of experience levels, there was a good mix in the room: 38 per cent were experts in renewable energy procurement, 40 per cent were intermediate level and 22 per cent were coming in as beginners.

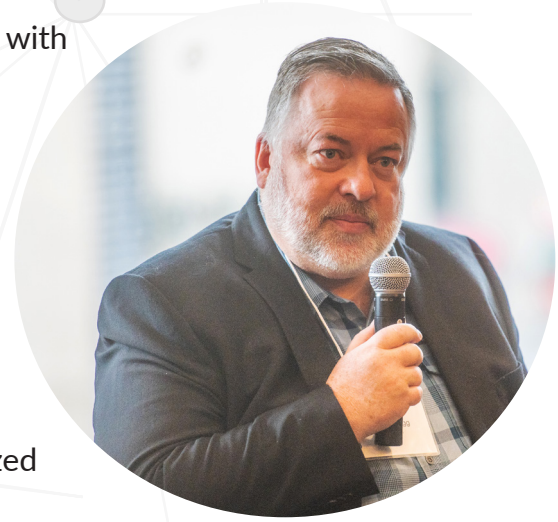


The following is a summary of the key points raised by speakers and attendees during the course of the day, which contained three panels and several market table conversations, as well as a discussion on procurement barriers.

Panel One: What do buyers want?

Speakers:

- Moderator **Nagwan Al-Guneid**, BRC-Canada
- **Patrick Leonard**, Senior Manager, Amazon
- **Geoff Pegg**, Head of Sustainability and Environment, TELUS
- **Rob Threlkeld**, Director, Global Energy Strategy, General Motors
- **Julia-Maria Becker**, Senior Manager, Royal Bank of Canada



The expert corporate buyers on this panel had many insights to share with fellow buyers in the audience. Among them was the acquired wisdom about the importance of establishing a standardized process if you're a large company that plans to enter into multiple power purchase agreements (PPAs).

Standardization allows for quick movement, as all the routine bits in agreements are automated, and you can focus on any strategic problems instead. Any changes or alterations can be added iteratively (like the investment tax credit) to the already standardized process when needed. This way, teams can easily and efficiently go over contracts and understand what they are looking for. A standardized process can take a PPA negotiation from 18 months to six months.

Developing a standardized process can also go a long way toward solving another common problem, which is developing the internal trust of all company team members about the PPA. If PPAs are new to your company, you may find that you need to make people inside your corporation comfortable with the idea. This means taking the time to make sure your team members are confident and comfortable that they can take on the risk.

In tandem with developing internal trust and a standardized process, it's important to plan for growth, knowing that it can take some time to get a renewable energy supply in place. Related to this is the need to foresee and avoid bottlenecks of all kinds – materials, labour and transmission. Part of this need arises from the fact that the pace of renewable energy development has moved a lot faster than many expected. Some of this work is up to governments and policy makers, though, and buyers expressed a strong interest in working in jurisdictions with proactive governments and policy-makers.

In addition, it was noted that while buyers are very happy to have PPAs in Alberta, they would love to have a diverse portfolio across the country, including in provinces like Ontario and Saskatchewan. Lastly, buyers said they are also focused on having conversations with their suppliers, to encourage them to measure, report and reduce their emissions, as well.

Panel Two: Lessons Learned for Canada

Speakers:

- Moderator **Rob Collier,** VP, Energy Marketplace, LevelTen Energy
- **Joseph Bastien**, Associate Director, Inclusive Economy at Shareholder Association for Research and Education (SHARE)
- **Joan Hutchinson**, Managing Director, Marathon Capital
- **Rob Threlkeld**, Director, Global Energy Strategy, General Motors
- **Dr. Sara Hastings-Simon**, Director, School of Public Policy

Speakers on this panel noted that watching what's happened in the U.S. with renewable energy development has been a big inspiration. A lot of what's happened in Canada was built off the successes of our neighbour and has borrowed from what has worked there.

However, the pace of development in Alberta caught some by surprise. It's been interesting to see how much faster this market has moved than a lot of people expected. There are lessons here on how bringing people who haven't normally worked together into the same initiative can lead to rapid progress.

Working together has become increasingly important in recent years, as the PPA process becomes ever more complex, requiring buyers and sellers to collaborate to share the risks. Before, price and commercial operation dates were more knowable. Now, there is more unpredictability in price and time. For example, developers now need a year's window instead of six months, due largely to supply chain issues. This means buyers need to plan ahead because it's become difficult to find projects with commissioning dates in 2023 or even 2024.

It's also vital to include potentially impacted Indigenous communities in the planning process at the earliest stages because consent is esential and required. Equity sharing was an important topic highlighted throughout the session, as many communities are interested in becoming project partners. Cooperation and collaboration can ease the permitting processes and build strong long-term relationships. But communities facing multiple potential projects on their land need a way to ease the process and this is still an ongoing challenge.

On the government intervention side, there were multiple observations made about the U.S. Inflation Reduction Act (IRA) and its stimulation of the renewable energy market. While the Act gave businesses a 10-year runway for development, there is now an urgent need to expand transmission to keep up. Labour shortages could also create a problem for businesses – while providing a huge boost to the energy transition job market.

On our side of the border, the federal government's investment tax credit response to the IRA means businesses really need to understand our supply chains and the other parameters that affect Canada specifically.

Panel Three: State of the Market in Canada

Speakers:

- Moderator **Jeremy Barretto**, Partner, Cassels
- **Guy Lonechild**, CEO, First Nations Power Authority
- **Vittoria Bellissimo**, CEO, Canadian Renewable Energy Association
- **Benjamin Thibault**, Senior Strategy Advisor, Prairie Sky Strategy

The state of the market discussion began with a distinctly western flavour. Western Canada accounted for 98 per cent of installed capacity growth in 2022. This market domination was sparked by Alberta's Renewable Energy Program (2016-2019), which provided price discovery that showed how affordable renewable energy was. This led to increasing interest, from corporations and internationally. There's a good chance that by 2025, 30 per cent of the energy on the province's electrical grid will come from renewables, ahead of the 30 per cent by 2030 goal.

The question now is - how can we keep this going? We need to be able to get all this generation to the market, but issues like transmission need effective solutions. The Alberta Electric System Operator has a mandate to run a congestion-free system. But they also want to keep costs low. And consumers shouldn't be expected to bear the costs of transmission build out, so there is a need to think outside the box. It was suggested that the Canada Infrastructure Bank or industry consortiums could fund transmission construction.

Elsewhere, there is clear potential, but a trickier path. In southwestern Saskatchewan, there is a pilot PPA rollout of new wind and solar and the market is open to what are called sleeved corporate PPAs. Quebec is undergoing large-scale procurement and might see one gigawatt per year of renewable energy development for the next decade. They've cited a need for 100 terawatt-hours in renewable energy generated by 2050 for their electricity transition.

Ontario faces a capacity shortage. To address this capacity problem, they're purchasing storage and gas-fired power. There is strong potential to increase renewable energy and corporate PPA's provide a proven mechanism to spur buildout.

B.C. is working on establishing an Indigenous pathway for renewable energy development. The government there also recently doubled funding to move First Nations off diesel to hydro-electric power, solar, biomass or wind power.

Nova Scotia is launching a Green Choice Program which is basically a large consumer sleeve deal. The program is being lauded for its transparent and open engagement with stakeholders. It was designed with a focus on appealing to buyers.

Market Table Conversations

Throughout the day, forum participants were engaged and helped to drive content. At market table conversations, forum attendees had the chance to exchange ideas and feedback. Two of the topics were picked directly from audience questions in the morning session. Topics included:

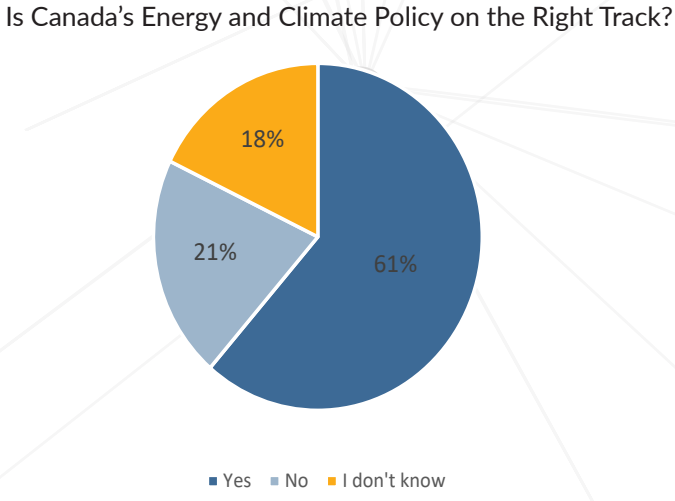
- What are the implications of the IRA and Investment Tax Credit in Canada?
- Beyond the MW: What are the best practices to advance Indigenous communities' participation through renewable energy?

- What is the potential for energy storage in Canada?
- What is the impact of transmission issues in Alberta on buyers' commitments?
- How might the next evolution of corporate strategies under consideration play out in Canada?
- How concerned should buyers be with renewable energy reclamation in Alberta? What's the reputation risk for buyers?
- Trends in the renewable energy market
- Why renewables matter

Some of the interesting tidbits raised at the energy storage table provide a sample of the free-flowing conversations at the market tables:

- There is research taking place to understand if vanadium from tailings pond can be used in battery storage instead of lithium.
- Energy storage has a big role to play in areas where there is transmission congestion.
- Energy storage faces a tariff issue. There needs to be an initiative to change that. Utilities need to be involved to understand how storage can be introduced.
- The layering of different revenue streams makes storage feasible.
- Hybrid facilities featuring wind and storage could get a lot of interest.
- Wire upgrades can hold back energy storage development. Low-cost retrofits to existing wires are also possible to make them "smart." This has been done in the United Kingdom and in Australia. The current planning process does not recognize those potential solutions.
- Some buyers consider their portfolio of renewable energy when procuring, and try to minimize risk through diversification.

Slido polls revealed thoughts on Canada's energy and climate policy (left) and excitement about jurisdictions (right).



Procurement Barriers:
Responses from Forum Participants

Before wrapping up the forum, participants were given a pen and card to capture what they considered to be a pressing barrier to corporate renewable procurement. Then, to understand how critical these barriers are and how widely that opinion is shared, the participants were asked to exchange their cards with two other attendees, who would rank the barrier on a scale of 1 to 10.

This exercise provided the perfect opportunity to tap into the collective knowledge of the BRC-Canada community and reveal potential challenges. The broad makeup of the forum audience allowed for insights to be pulled from across the PPA process. The top five issues raised by the community highlighted uncertainty but also a desire for expanded access to renewable energy.

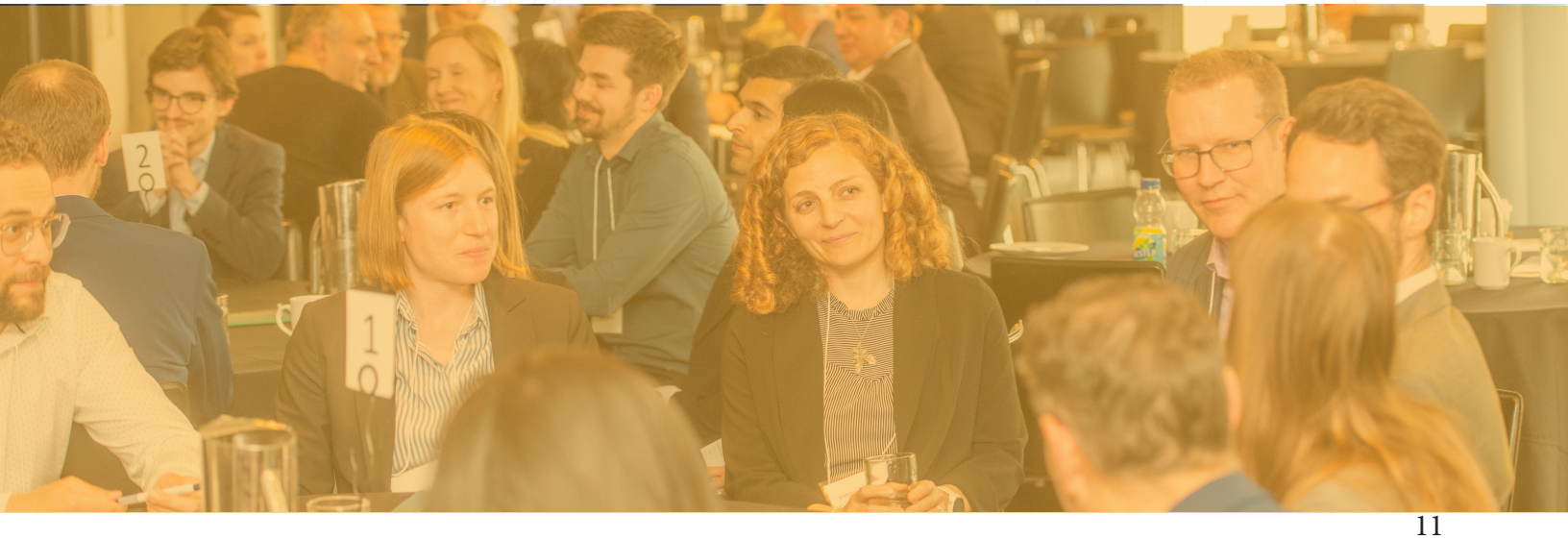
The Top Five Procurement Barriers

1. Uncertain carbon calculation parameters beyond 2030 in Alberta
2. Uncertainty about final transmission curtailment and PPAs available (from a buyers perspective)
3. Regulated markets not providing opportunities for corporate procurement of renewable energy
4. Policy Framework for energy storage and transmission lines
5. Aligning the needs of load with the timing of development projects

The answers and comments provided allowed the BRC-Canada team to dig in and find common themes from across the community.

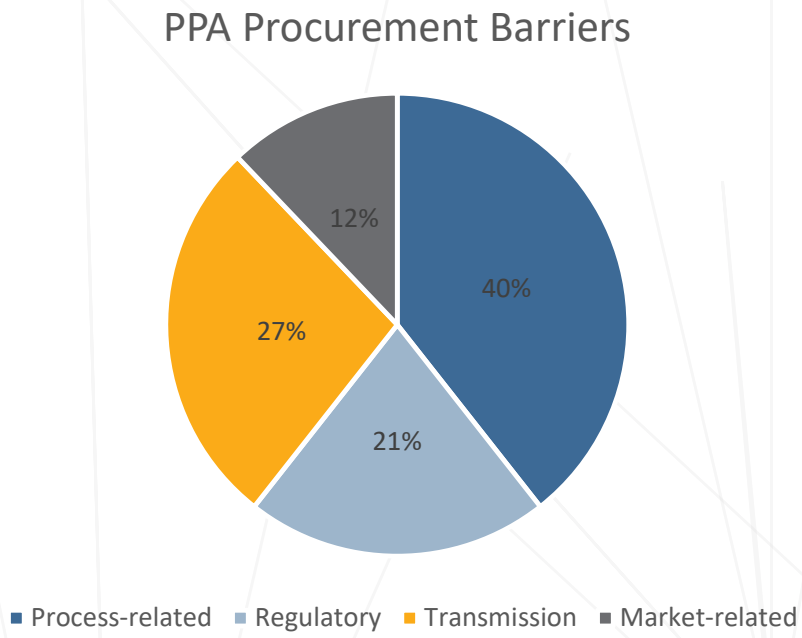
To summarize our findings, we categorized the procurement barriers broadly into four groups:

- Regulatory
- Transmission
- Process
- Market barriers



Regulatory barriers:

This category made up 21 per cent of the total responses. With a ranking of 9.5, the uncertainty of government policies around carbon calculation after 2030 in Alberta was overall the highest-ranked barrier and received remarks stating the need for a climate plan based on science that stretches into the future past 2030.



Another significant regulatory barrier highlighted was the need for a policy framework for tackling transmission issues and storage in Alberta. Furthermore, concerns around the implications of the U.S. Inflation Reduction Act on Canada were among a few that took a relatively low ranking, not just under the regulatory category but overall, primarily because the participants agree that the Government of Canada has taken reasonable measures to keep projects competitive through the federal budget. Global adjustment in Ontario was noted as an issue that needs to be resolved to incentivize additional grid capacity, with an average ranking of 7.

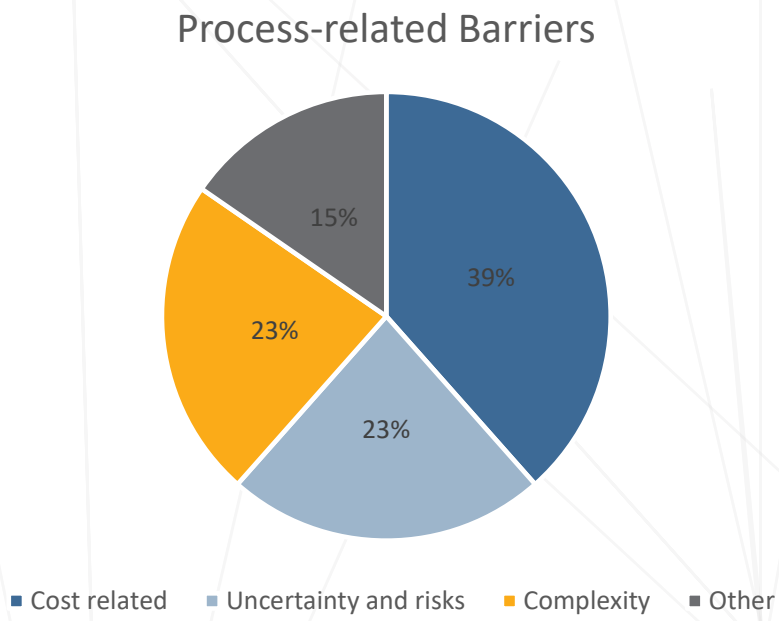
Transmission:

Transmission access and uncertainty was the second-highest procurement barrier addressed by the participants, with 83 per cent of responses ranked 8 or higher out of 10. The participants understand that issues around transmission, although different, are present for developers and buyers. It was interesting to observe how the participants also provided input on how these risks could be approached.

One of the recurring approaches was the implementation of effective funding strategies from a regulatory perspective. However, strictly from a power purchase agreement (PPA) perspective, internalizing the risk of transmission congestion within the PPA price or setting clauses in PPA contracts were other interesting approaches highlighted within this category. Responses acknowledged that transmission is a broader issue that extends beyond renewable energy procurement, with political and societal acceptance cited as a problem and demand-side solutions as potentially part of the solution set.

Process barriers:

With 39 per cent of participant responses, process-related barriers involve issues directly related to the transaction of a PPA. Under this category, the most common barriers highlighted were categorized into three buckets: cost-related, complexity in carrying forward PPAs, and uncertainty or the fear of the unknown. Cost-related barriers, with an average ranking of 6.7, include regulatory issues like cost fluctuations amidst carbon tax and investment tax credit implementation and market issues like increased costs due to variations in the supply chain.



The complexity bucket, with an average ranking of 6.3, touched upon barriers faced by buyer companies in understanding the PPA process and the difficulties in bringing together and receiving acceptance from internal teams. Finally, the fear of uncertainty around various parameters during the PPA process secured an average ranking of 7.6 among process-related barriers.

Market barriers:

With only 12 per cent of responses, the market category is a barrier area not highlighted by many participants. One barrier repeatedly addressed under this category is the difficulty in renewable procurement within closed electricity markets or vertically integrated utilities. There is a consensus that these market structures increase the difficulty of PPAs, but developers and buyers are open to getting innovative and trying other mechanisms like piloting sleeve deals in Saskatchewan.

Overall, the identified barriers align well with the efforts BRC-Canada is taking to accelerate renewable energy procurement in Canada. Our work in providing education and resources to streamline the PPA process directly addresses process-related barriers, one of the two largest categories of responses. BRC-Canada looks forward to continuing to support dialogue across all stakeholders to help unlock systemic challenges around transmission and regulatory issues.

Wrapping It Up

The last Slido poll of the day revealed the positive impressions participants were left with:

Indigenous partnership and *collaboration* were the two major takeaways!

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