Bridging the Gap:
Building bridges between urban environmental groups and coal-producing communities in Saskatchewan

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About the authors

Hayley Carlson, Justin Fisher, and Rachel Malena-Chan are organizers with Climate Justice Saskatoon, and they share an interest in research related to the social and political aspects of climate change. Additional information about the worldviews and biases of the authors is available in Appendix 1. These authors and their report are connected to a broader project entitled “The Future of Coal in Saskatchewan.” While this report focuses on the social and cultural dimensions of decarbonizing energy, the project as a whole includes a focus on technical, economic, and political dimensions.

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EXECUTIVE SUMMARY

The project at a glance

Saskatchewan communities are grappling with key decisions about the future of coal in the province. On the surface, the Federal government’s commitment to phase-out coal across Canada by 2030 has resulted in a polarized conversation, with urban environmental groups like Climate Justice Saskatoon (CJS) in favour of the policy and those in coal-producing communities remaining opposed. As members of CJS, we are committed to confronting the social and economic implications of both climate change and policies designed to address climate change. We believe that understanding each other’s stories is an important step in building relationships between groups with different perspectives on this issue and in moving towards a low-carbon transition in Saskatchewan.

To gain a deeper understanding of the perspectives of coal workers and their communities, we traveled to Estevan and Coronach and interviewed community members about their views on phasing out coal, renewable energy, the opportunities and challenges they are facing, and about how they view groups like our own. While it is clear both Estevan and Coronach are facing somewhat different contexts, we heard about frustrations, uncertainties, and feelings of isolation across both communities. We recognize that as an urban environmental group we may not be the most trusted messengers for these communities, however we do seek to develop deeper relationships with the participants and factor their concerns and hopes for the future into our views on climate justice.

What we heard is that each area is facing unique challenges, and uncertainty is already stemming from a lack of planning and communication about phasing out coal. This is having tangible impacts on people’s lives; community members are struggling to make decisions without knowing what the future holds, and in some cases, they feel like decisions are being forced upon them. We also found that the overarching uncertainty and the unique challenges in each community are bound up in wider challenges of rural decline, agricultural trends, and the boom-and-bust cycles of oil and gas; in both communities coal has always been a source of stability, so the uncertainty surrounding it now makes the situation much more precarious.

While many individuals are interested in alternative employment opportunities, overall there is a clear preference for maintaining the stability coal has represented historically to the communities as much as possible for as long as possible. Positively, there also appear to be genuine opportunities for relationship building and learning together. We found that people in Coronach and Estevan appreciated the chance to be heard, and participants expressed gratitude about being able to offer their perspectives.
Why explore and compare stories?

This project is nested within a broader study aimed at understanding the barriers to transitioning to a renewable energy economy in Saskatchewan. Future reports will focus on the technical and economic feasibility of such a transition, while this report focuses in on social and cultural dimensions. We used a narrative approach to analyse the stories we heard from participants in the study. We then compared their stories to the narrative we, as an urban environmental group, use to make sense of phasing out coal. We hoped to take away a clearer understanding of the perspectives of coal-dependent communities and a stronger basis from which to communicate about alternative energy and employment opportunities. While many divergences between our viewpoints emerged, strong similarities also came through, and opportunities for collaboration and relationship-building were identified.

In exploring the differences and the overlaps, we found that despite openness to alternative energy sources there is limited faith in renewable energy technology within coal-producing communities. By contrast, carbon capture and storage (CCS) technology is more widely celebrated. Since most people we spoke to are convinced that coal must remain a part of the energy mix, they expressed confusion and frustration at those who dismiss CCS as an environmental solution, or at least as a compromise. These perspectives are at odds with our understanding about the limitations of CCS as a means of moving toward a decarbonized society on the tight timelines the temperature targets in the Paris Agreement implies.

We also found that participants were not confident in the viability of provincial targets around renewable energy generation. We heard frustrations about a lack of tangible steps to meet emissions-based and energy-related targets by either level of government. In general, there is unhappiness with the lack of planning and communication from official leaders. Notably, members of CJS share many of these feelings and we also desire greater transparency about action plans from our representatives. We hope to build upon these shared experiences and contribute clarity about the technical and economic feasibility of transitioning through upcoming reports.

Where does climate change fit in the narrative?

We observed during our analysis a significant difference between the way our group and members of coal-producing communities handle the issue of climate change. In our narrative, climate change is a serious and urgent scientific reality that has significant consequences for our social and economic systems.

Among participants, some expressed doubt that humans are the cause of climate change, and others see climate change as a far-off environmental problem instead of as a local issue with serious social and economic implications. When seen as a serious issue, climate change was often perceived in a global context where Saskatchewan and Canada were seen as relatively inconsequential. Moreover, environmentalists were often viewed with suspicion and disdain, considered ignorant of the reality of the challenges and lacking compassion toward workers and their families.
Without climate change being a priority concern, the decision to phase-out coal does not make a lot of sense, especially on a tight timeline. Participants sense that these decisions around coal are political in nature and they generally paint politicians as looking out for themselves, and as being heavily influenced by urban and environmental interests. Rural people feel neglected, and while participants did consistently sympathize with environmental concerns, these dimensions were not a priority and did not overlap with economic or social issues. Pro-environmental decisions were more likely to be framed in individual terms, such as lifestyle choices, rather than policy or industry-level systems of power. Individual and local sacrifices were not contextualized in terms of global-scale environmental concerns like climate change.

**Where do we go from here?**

As a group, CJS has gained through this project a clearer sense of the limits of our own narrative, and we have a deeper understanding of how people in Coronach and Estevan are navigating the contextual barriers to phasing out coal. We also have a better sense of what kinds of plans and policies could support communities that are currently dependent on coal as a source of employment and energy, and recognize that we, as energy users, have a vested interest in feasible alternatives. We can see opportunities to engage more authentically with people often portrayed as being "on the other side" of this issue, and we understand now where our priorities might overlap.

In particular, we are struck by the fact that participants feel frustrated with governments, ignored by decision-makers, and powerless over the future of their communities. Based on our experience in this study, these are emotions that are shared across urban environmentalists and people in coal-producing communities in Saskatchewan. Disempowerment and neglect can be considered a common baseline between us, and it could be a starting point from which to imagine collective and creative long-term solutions.

This project represents an important step in our work as a climate justice advocacy group, and we believe the following report could be helpful to others as they critically evaluate their own climate narratives. Based on our experience in these communities we have made a number of recommendations around next steps that we think can simultaneously support our climate change goals and some of the priorities community members indicated were important to them during our conversations. You will find these on pages 32-33 of this report.

Ultimately, we hope that the participants in this study see their experience reflected here and that this process continues to evolve as we move forward, serving as a bridge between our communities. We would like to thank all participants for their time and for sharing their stories with us. We hope to reciprocate your generosity when we return to each community in the coming months.
BACKGROUND

Tensions surrounding climate change in Saskatchewan

In 2015, acting on overwhelming scientific evidence demonstrating the dire threat to human health and ecosystems posed by anthropogenic climate change, almost all nations signed the Paris Agreement to limit global warming to 2°C above pre-industrial levels (IPCC, 2014; UNFCCC, 2015). Each signatory to this Agreement may determine its own approach to limiting greenhouse gas (GHG) emissions, and there is significant debate about which approaches are most effective.

In Canada, the Federal Government worked with provinces and territories to release a Pan-Canadian Framework on Clean Growth and Climate Change, with a goal of reducing GHG emissions 30% below 2005 levels by 2030 (Government of Canada, 2016). Like the international Paris Agreement, the Framework provides flexible mechanisms for provinces and territories to contribute to emissions reductions. However, the Framework also includes a series of federally mandated measures such as carbon pricing and a phase-out of traditional coal-fired electricity by 2030.

Saskatchewan is the only region in Canada to not sign the Pan-Canadian Framework. There is a high level of disagreement in the province around the appropriateness and efficacy of different climate policy tools to address Saskatchewan’s emissions. Opinion polling has demonstrated widespread public opposition to carbon pricing schemes in the province (Mildenberger et al, 2016) and hundreds in the province rely on the coal industry for employment (Saskatchewan Southeast Enterprise Region, 2017). There are significant concerns about the perceived economic impacts of climate change policy, and in particular, a disproportionate impact on trade-exposed and emissions-intensive industries such as oil and gas, mining and agriculture (Government of Saskatchewan, 2016). However, numerous studies in the province have recommended the adoption of carbon pricing (Dolter, 2016; Prebble et al, 2015) and a phase-out of coal (Halliday, 2013; Campbell et al, 2014; Prebble et al, 2015) as critical policy tools for reducing emissions.

There is tension between the scientific imperative to act on climate change and the perceived economic impacts of any action. As a response to the federal framework, Saskatchewan released its own climate change strategy, Prairie Resilience, which takes a notably different path including neither explicit carbon pricing nor a plan for coal phase-out (Government of Saskatchewan, 2017). Indeed, Scott Moe and Brad Wall, Saskatchewan’s current and former premier, respectively, are outspoken in their opposition to both of these policies (CBC News, 2017, May 8; CBC News, 2016, Nov. 21). While including a renewed focus on climate change adaptation efforts, Prairie Resilience contains no explicit emissions reduction targets or plans around supporting communities transitioning away from fossil fuels, leaving serious questions about how Saskatchewan intends to meet its commitments.

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* It should be noted that in late August 2018 the Alberta government signalled its intent to withdraw from the Framework until the TransMountain pipeline dispute is resolved. In addition, other provinces have continued to debate specific measures like carbon pricing despite having signed onto the Framework.
The coal context

The debate surrounding a national coal phase-out has been particularly stark as it directly affects only four provinces, yet has become a centerpiece of Canada’s emissions reductions strategy. Coal produces only 10% of electricity in the country but accounts for 77% of electricity-related emissions; a coal phase-out would get Canada approximately one third of the way to its emissions reduction target (NRCan, 2017a). In Saskatchewan, coal is responsible for over 40% of electricity production and approximately 80% of electricity-related emissions (SaskWind, 2016). Moreover, Canadian health organizations, led by Canadian Physicians for the Environment, have put forward a convincing case for the health benefits of eliminating coal pollution (Israël & Flanagan, 2016). Alberta, Saskatchewan, and Nova Scotia in particular continue to rely heavily on coal for electricity generation, which places the onus on these provinces to make major changes. Notably, Ontario completed its own coal phase-out in 2014 (Government of Canada, 2016).

Alberta, which in 2014 accounted for 71% of all coal used in Canada (NRCan, 2017b), has committed to a 2030 phase-out of its coal power and to financially support affected workers and communities during the transition (Government of Alberta, no date). Saskatchewan relies on coal for approximately 40% of its power generation, and has so far resisted the push for a phase-out. Prairie Resilience pays exceptionally limited attention to coal, mentioning only the intention to continue to explore the viability of extending the use of Carbon Capture and Storage (CCS) technology in the future. Notably, the province’s public utility, SaskPower, has called into question the economic viability of CCS and has expressed reservations about extending the technology (CBC News, 2017, Nov. 3). Most recently, SaskPower announced there is not a business case to pursue carbon capture projects at Boundary Dam units 4 and 5 in Estevan. Despite this, the Saskatchewan government has been clear about its intention that coal remain “a valuable part of SaskPower’s generation for years to come,” (Estevan Mercury, 2018, Jul. 20) and of seeking an equivalency agreement with the federal government to extend the use of its coal plants past the 2030 phase-out deadline (CBC News, 2017, Nov. 17).

Polarizing narratives

Given the high political and economic stakes for a coal-phase out in Saskatchewan, communities are caught between polarized narratives about the “right way” to address climate change. At the same time, it is these communities that are poised to experience both the direct impacts of climate change and the direct impacts of policies aimed at reducing greenhouse gas emissions.
Research indicates that policy debates - particularly around issues like climate change (Rittel & Webber, 1973) are complex and often have less to do with data and facts and more to do with values and worldviews (Braman & Kahan, 2006). For example, the terms of reference for what counts as an “appropriate” way to respond to climate change are not straight-forward. Instead, people use their moral inclinations, social norms, and culture to help interpret the meaning of a policy, including how “good” or “bad” it might be for their particular context (Kahan & Braman, 2006; Flyvbjerg, 2004; Stone, 2002). Social relationships, group identity, and personal values influence how different people approach the topic of climate change, and often these social and emotional factors have a greater impact on the outcome of the debate than the facts in question (Moser, 2013; Norgaard, 2011; Wibeck, 2014).

The tensions and unspoken assumptions between the numerous groups advocating different and often incompatible solutions shape how we talk about, and act on, climate change in Saskatchewan. There is a clear divide between environmental groups calling for a phase-out of coal and the position of coal-producing communities in the province; such tension appears to play a role in stifling constructive public discussion of the issues at hand. Perceptions about the threat climate change poses and the costs and benefits associated with different policy options can constrain political action around contentious issues like phasing out coal, threatening our ability to respond effectively (Jaccard, Hein & Vass, 2016; Norgaard 2011). If perceptions, identities, and values continue to divide communities on the response to climate change, conversations will continue to drift from the fundamental questions Saskatchewan needs to be asking about planning for the future in the face of climate change.
The Project

What we are hoping to learn

With major steps being taken towards phasing out coal at the federal level as well as in Alberta, Saskatchewan is increasingly isolated as the province without a clear strategy for the future of coal and coal communities, especially as the economics of CCS have been called into question. As such, a serious conversation leading to the development of a detailed plan for the future of coal and electricity production the province is long overdue.

This project aims to advance the conversation about a provincial coal phase-out in Saskatchewan. The authors are representatives of Climate Justice Saskatoon (CJS). As an urban environmental group, we recognize that our perspective on this topic is not without bias, and we aim to learn from perspectives that may not align with our own. As such, the primary purpose of this research is to gain a deeper understanding of the challenges facing coal-producing communities in Saskatchewan from the perspective of community members; to build relationships between our group and members of those communities; and to improve our approach to climate change engagement with rural communities, particularly by listening to the voices of coal-producing communities.

We see a way forward in connecting with other groups, particularly those who will be most impacted by climate change and the need to take action on climate change. We aim to constructively and respectfully explore the barriers that are perceived to exist between those advocating for meaningful climate action and those whose livelihoods are currently dependent on fossil fuels. In Saskatchewan, some of the first communities impacted by climate policies will be those that have an economy built around coal. A phase-out of coal would directly affect hundreds of workers in the province, and would have a major impact on communities like Estevan and Coronach, which depend heavily on coal mining and coal-fired electricity generation for employment and revenue.

We recognize that social consequences stem from climate action and energy transitions in the province, and there is a need for discussion about a justice-based transition away from fossil fuels. CJS is interested in a managed phase-out of fossil fuels that promotes and protects the interests of workers and communities. As such, there is a serious need for us to engage with and gather input from coal industry workers and coal-producing communities. This project is envisioned as a way to open up such conversations with workers and frontline communities, and to better understand the challenges facing coal-producing communities from the perspective of community members.
What we are doing

Ultimately, our interest in this project is about exploring shared values, and building a decision framework that is meaningful to both groups advocating for climate justice and communities that would be first impacted by a coal phase-out. To explore the perspectives of - and challenges faced by - coal-producing communities in Saskatchewan, we conducted 17 interviews with individuals in Estevan and Coronach during the spring of 2018. We recruited participants through outreach using social media, posters, and through personal and professional contacts - generally people we knew who had experience living or working in the communities in question, as well as local unions. In each community we recruited through snowball sampling, with some participants putting us in touch with potential new participants. Although we acknowledge that the participants we spoke with may not represent the full diversity of perspectives in these communities, we were encouraged to receive a high level of interest and were pleased with the opportunity to speak with so many people connected to the coal industry. All participants lived and worked in the areas and represented a variety of professions, including many in the coal industry (both in mining and in power generation), town administration, farming, and service industries. Participants volunteered to participate and consented to share their perspectives. During interviews, we asked about participants’ perspectives of their communities, as well as the broader energy conversation happening both in Saskatchewan and across Canada.
Our analysis considered participants’ stories individually and together until we were able to interpret meaningful connections between their perspectives on coal phase-out and the challenges facing their community. Contrasting those stories with our own stories helped to draw out the similarities and differences between them. For this purpose we have provided our group story and our individual stories in an Appendix (p.35) intended to clarify our perspectives on climate change and how we came to do this work. Points of convergence and divergence across all of these stories allows us a deeper understanding about the barriers to climate action in Saskatchewan.

The next section offers a summary of what we heard from participants in each community; we have made an effort to simply relay key findings and themes that emerged through our conversations. The following section interrogates those findings as we offer our analysis of the above-mentioned convergences and divergences between our own narratives and those of participants. We then offer a brief set of recommendations for next steps.
WHAT WE’RE HEARING IN CORONACH

Uncertainty

In Coronach we are hearing a story about uncertainty, and it is clear from our interviews that the federal government’s intention to phase-out coal-fired power plants by 2030 is nested within a larger story about mounting pressures on rural communities. Coronach is facing a number of challenges that, together, make it difficult to plan and prepare for the future. One person describes uncertainty as having "just slowly spread. You know, as if everybody became more aware of the date looming over." The government’s policy around phasing-out coal is an additional dynamic in an increasingly insecure situation. In particular, changes related to coal have compounded insecurities about changes to local agriculture. The trend toward bigger, industrial farming has limited options for smaller farmers; as one participant articulates, "Unless you’re big, you’re not going to survive." Many people in the area work both at the coal mine and on the farm. One participant observed, "it really seems like lots of people have moved back since the oil prices have gone down from what they were in the past five years... more men, specifically, that have moved back to work in the mine and the plant and they also help with farming." Family farming is a draw to Coronach for some coal workers, but participants in our study indicated that without the wages and benefits offered by the mine and plant, they would struggle to make ends meet. In contrast to farming, coal has historically represented stability and prosperity for Coronach residents. However, long-term employment prospects for the town are very uncertain without coal in the picture. As one participant describes, Coronach residents “don’t have the oil like they have in Estevan to fall back on...all we got is coal out here, and the farmers.” Residents of Coronach widely sense increasing pressure on these core sources of revenue, and few alternatives emerge through the fog of uncertainty.

When asked about the challenges facing Coronach, participants acknowledge that even without the federal government’s announcement about the 2030 deadline, the future of coal in Coronach has been uncertain for many years. Because the local plant is also set to retire by 2030, people in Coronach experience doubts about the future of their employment. Uncertainty is perceived to be contributing to a lack of investment and long-term planning in the town. While many workers hired during the 1970s are now nearing retirement, a younger generation of Coronach residents do not have the same opportunities for employment, and face difficult career choices. “I don’t think there’s a career in coal mining anymore” explains one parent, who questions the value of working in coal for 20 years only to be left “with no education and no coal mining future? You know, at age 40, how do you start over?” To these residents, uncertainty about the future is a present-day challenge.

CORONACH
STATISTICS

Region: South-central SK
Incorporated: 1927 (village)
Population (2016): 643 (-9.6% from 2011)
Average age: 43
Median income (2015): 42,688
Employment rate (2016): 65.6%
56% employed in the following industries: “mining, quarrying, and oil and gas extraction” (14%); “Utilities”; “Construction”; “Administrative and support, waste management and remediation services”
Out of our hands

As local residents try to make plans for their lives, uncertainty about the future impacts their decision-making. Phasing out coal-fired power is perceived by some participants to be an existential threat to the town of Coronach. Closing the mine and the plant impacts everyone in the town, as businesses, services, and schools are likely to close if the majority of residents are no longer employed by the industry. As one participant articulates, “the town would just die. It really would. There’s not enough farmers here to sustain the town.” Unfortunately, the decisions that will determine the future of Coronach are perceived to be out of the hands of local people, and this lack of agency causes rural people to “feel neglected.”

Fueling uncertainty about the plant’s retirement is a lack of alternative energy supply for Saskatchewan. Coronach residents are aware that Saskatchewan currently relies heavily on coal-fired power to supply the province’s energy demand, and with few alternatives being proposed in real-terms, participants are unsure about the feasibility of shutting down the local mine and plant:

“[T]he government has made some statements like “Oh it’s shutting down by this year, or that year,” but Saskatchewan right now is not set up with any other power sources, or at least that’s how it’s perceived - like what is their back up? Do they have a bunch of solar ready to take over? Or do they - is nuclear set up? Or like, yes there’s options but is Saskatchewan ready to do those other options? It’s like ok, they don’t seem to be. And winter’s coming in six more months, and people still need to heat their homes. So it’s like, Saskatchewan right now is setup to use coal, so for the near future, people are like, “Well there’s not really any other options, so we can count on this for now.”

With nothing to replace the energy production supplied by Coronach, a phase-out is not perceived to be possible. “I think they’re dreaming,” says one participant about the federal deadline. Several participants perceive that jurisdictions moving away from coal, such as Alberta and Ontario, are facing energy shortages and price increases. Doubts about the feasibility of renewable generating capacity are widespread across participants, and others see a chance for a reversal of the policy:

“they say they’re going to be here for a few more years, and I expect there will be some presence for a while, but it leaves it up in the air. You know, do you know for sure? Do you believe the government? ...things can change quickly.”

Ultimately, a lack of clear communication from both federal and provincial governments about the fate of the mine and plant in Coronach, and about the future of energy generation in Saskatchewan more generally, threatens to damage trust and deepen cynicism about political representation.
Futures shaped by the compounding impacts of uncertainty

When asked about their perspective on the future of Coronach, participants express concerns about the compounding impacts of uncertainty as it persists from year to year. Ultimately, perceptions of the future in Coronach are centred upon the ways in which the town will change in the next few decades, and the timeline surrounding a coal phase-out is a key variable determining the residents' lives and choices.

“A lot of people are trying to figure out what's going on. Like, the guys at the mine, they're trying to figure out 'Well, geez, should we stick around here, or what?' And the guys at the power plant are like, ‘Where do we go from here? Should we bid out, should we stay?’”

Those who are more pessimistic about future prospects see few alternative paths forward for Coronach people. There is a sense of the town's decline only being a matter of time, regardless of coal phase-out. However, the timeline is significant to local residents, and participants indicate their desire for a managed phase-out with clarity for workers: “I wish they would say what's going to happen and put a plan in place. And my wish is that SaskPower would give incentives to make people stay so that, you know the whole community doesn't die before the plant's even shut down.” Individuals and families are already weighing the risks of leaving the town with the risks of staying put for too long, fearing that they will eventually be unable to sell their houses. The majority of interviewees are in agreement that without coal, it will be a struggle for the town to remain a viable place to live.

With younger workers in mind, some participants look to the future with hope. However, they acknowledge that sustaining a community in rural Saskatchewan is no easy task. Services are perceived to be in decline, including worsening access to health care:

Well when I first moved to Coronach, we had two full-time doctors. We had a dentist. We had two grocery stores. We had, you know, a clothing store, and there were a lot more services. It would be great to see that come back. I think if you could eliminate some of the fear around the future so that our younger people especially are staying here and investing in the community, so that we can kind of build from here, instead of just this slow decline. It’s a beautiful area, and I think we have a lot to offer, you know? I would hate to see us disappear.
As this participant explains, the future of life in Coronach is at a tipping point, and while residents are deeply committed to their home, many lack clarity about a future worth contributing to. “If you’re going to stay here, you make it your own,” explains another participant, “and for that, you don’t need coal, what you need is people and a belief in the community.” Overall, participants demonstrate an openness about large-scale projects to replace coal-related jobs, but they also express doubts about renewable energy as an alternative to coal-fired power. Others are more optimistic about the potential for alternative sources of energy, but highlight the importance of government in supporting, planning for, and communicating about viable projects. Thus, because of a lack of government planning and management, the compounding uncertainty impacting energy-producers in Coronach ripples out across the province’s energy-users.

Let’s make a plan

What we are hearing in Coronach is that uncertainty about the future is causing frustration, fear, and worry among local residents, and governments have not adequately communicated a long-term plan for life in this community, nor have they outlined how the province’s energy demand will be met without coal-fired power. We are hearing about the desire for a plan that takes into account the needs of those most affected by the decision to phase-out coal by 2030. Furthermore, even without a federal deadline in place, questions remain about the lifetime of the coal industry in Coronach. With knowledge of what is to come, Coronach families could make informed decisions about their future prospects. It is clear that Coronach people value their community and desire alternatives that can sustain townspeople in place for multiple generations. We witnessed openness to alternative economic development opportunities, and a willingness to accept support. However, without alternatives to coal-related jobs, a generation of workers in Coronach is facing challenges that are not easily addressed.

While participants acknowledge the important role that Coronach residents have played in generating power for the province, they also see a future where other types of employment are equally valued: “I think if it was a solar panel farm and there was a bunch of solar panels there and it was taking up the same amount of land, and there was the same jobs and people had a good wage, I think people would be just as proud.” When the topic of retraining and direct financial support was raised with participants, the majority of people expressed skepticism about the usefulness of benefits that might be offered as part of a transition away from coal. This is due both to the perceived role of the coal industry in employing local residents and supporting local infrastructure and community projects, and to the perceived tokenism of government support provided to coal workers in places like Alberta, with
one participant remarking: “that’s just the tip of the iceberg as far as I’m concerned. That’s just hanging a little carrot in front of your nose”. Several people pointed out that the most valuable supports would sustain the town itself and make it possible to stay and work there. In the words of one participant:

*I mean retraining, you’re still looking at training people to leave. Right? Like it would be great to have their schooling paid for, you know, at a personal level, you know, whatever, but then, can they still stay here? Like, it would - those jobs, like certainly need to be replaced, but they need to be replaced locally. And not just shifting everyone to the city."

Coronach residents value the sense of belonging they feel within their community, and they express concerns about government interventions aimed mainly at supporting families to leave.

Our interpretation of the story we heard in Coronach about coal phase-out is that people generally seem open to discussing options for the future, and they want support for whatever is next for the region. However, dependence on coal-related income is woven into the fabric of the town, and proposing alternative economic opportunities is fundamentally about restructuring how life in Coronach is sustained. We learned that in addition to employment and training, the mine and the plant are perceived to be making important contributions to the town in the form of recreational activities and even public services. Alternatively, if residents had other means of providing for their families, the timeline to phase-out coal may not represent as daunting a challenge. Participants suggest that with the right supports in place, sustainable methods of farming could provide security to otherwise-vulnerable farming families. However, without active participation from governments, Coronach people face fewer and fewer choices moving forward.

Our experience in Coronach leads us to conclude that local people want to play a role in the decisions made about their future, and they desire a sense of agency over their lives and their livelihoods. They are open to the changes coming to their community, but they desire greater clarity and improved communication from those with the power to determine coal phase-out timelines. In the absence of a clearly communicated plan, Coronach residents may feel neglected or ignored. As this participant shared:

*I think that even knowing that the support would be there as that switch over happens, would make a big difference...it would be easier to make those leaps if we had a more firm commitment from our government that we’re not going to be left out - you know, hung out to dry.*
Many participants indicated to us their willingness to embrace renewable energy projects in the region and expressed excitement and pride at the prospect of contributing to Saskatchewan’s energy future:

“You know, if I knew some alternatives, I would one of the first people to be taking it to town council and saying ‘You gotta be doing this, you gotta protect our little town here.’”

Doubts about reliability and energy prices persist, but instead of encountering resistance to renewable energy projects, participants were generally receptive to idea. The prospect of adapting to a rapidly changing energy landscape represents both a challenge and an opportunity for Coronach people.
WHAT WE’RE HEARING IN ESTEVAN

“Energy City”: booms, busts, and bedrock

In Estevan we heard about fear and uncertainty, but also defiance about a future without coal. This is a community that prides itself as a power producer and as a technological innovator – a hard-working community that has played a central role in supplying energy to the rest of the province; or, as one participant explained,

“throughout the history of Saskatchewan, we’ve always been the place that supplied the energy and the oil for our province, like we’ve been the boom-and-bust place, and we’ve been the motivator to make things happen.”

As noted in this remark, this role has brought ups and downs to the community and region, but it has been sustained by this role nonetheless. The prospect of a coal phase-out is widely perceived as a major threat to the economic vitality of the area. And while community members want to take their future into their own hands, there is a clear sense that misguided political decisions are constraining what choices are available.

The heavily resource-based economy of the Estevan region has seen plenty of change over the years. Like in Coronach and much of the Prairies, agriculture has moved away from smaller family farms to larger, more capital-intensive operations with fewer farmers working more land. And, as noted above, Estevan has long been impacted by the boom-and-bust swings of the oil and gas economy. For decades booms have provoked a swelling population, lowering vacancy rates, driving up prices, and providing a boon for local businesses, while busts have reversed these trends, sometimes dramatically. Indeed, the latest cycle, precipitated by the Bakken oil rush and ending with the price crash of 2014, was especially extreme. One participant explained:

“I think if you talk to people who’ve been here a long time, this was one of the worst busts they’d ever seen. But... this is one of the biggest booms we’ve ever seen, and because of that, we got over-built... obviously when the oil crashes like that, you lose a lot of transient workers, so your service industries hurt, your hotels, and your things like that...”

ESTEVAN STATISTICS

Region: Southeast SK

Incorporated: 1899 (village); 1957 (town)

Population (2016): 11,483 (+3.9% from 2011)

Average age (2016): 38

Median income (2015): 46,941

Employment rate (2016): 69% (80.6% for trades certificate/apprenticeships)

32.5% employed in the following industries: “mining, quarrying, and oil and gas extraction” (15%); “Utilities”; “Construction”; “Administrative and support, waste management and remediation services”
Another participant described a typical scene during the last boom: “When I drove to work, there’d be three trucks parked on the backroad. I’d stop to see if they were alright, and they were sleeping in their truck, they had nowhere to live. It was just crazy.” Some of the older study participants expressed that they felt the bust was harder on the younger generation because of their lack of experience:

“[it] was a particularly hard fall this time around. Those who had been through it before, in the 60s or 80s, understood it. We’re familiar with how the oilfield works. Younger people and people who moved in from all over the country and the world for that matter, they had problems. We lost businesses. Big businesses, with a lot of employees.”

Overall, this appears to be an accepted part of life in the region. Coal, meanwhile, has long been appreciated as the stable, or bedrock, industry in Estevan. That it is now under threat is a starker and more recent challenge, and clearly it’s difficult to imagine what the area would be like without it. For generations coal has been a reliable source of employment, with many starting in the industry during or immediately after completing school. One participant articulated a common experience: “I grew up here – the mentality was that if you worked at the power plant or at the coal company, you pretty well had a job for life, as long as you did your work right.” In addition to stability, coal offers relatively lucrative incomes and requires little formal education to begin, while providing workers the opportunity to achieve skilled training in the trades. One participant shared:

“When I first started, I bet you it was close to fifty percent where guys don’t have a grade 8, grade 9 education. They quit school and they’re good out there. They can do their job and they can do it well. You know, almost like a PhD in dirt...”

Another explained:

“I've always been able to make a good, stable living, you know I've been able to travel the world, I've been able to bring up a family. You know, I'm a guy with a grade 12 education right? And it's – well I've got some post-secondary now, I've got my trade, but you know, the resource industry has allowed me to get that trade too – and go to school completely cost-free for that, and you know, it's been very good to me.”

Participants made it clear that the coal industry is an intrinsic part of the culture in Estevan; it not only provides for the hundreds of families directly involved with the industry, but the unions and corporations invest heavily in the community, both monetarily and socially. Moreover, coal is tightly woven into the region’s history:

“I'm talking back to the mid- to late-1800s, we have produced coal here. From the small family underground mines, 1870, maybe even 1860 until now, we have been continuously creating coal and producing jobs. That's pretty huge.”
There is no alternative

There are palpable fears about the future in Estevan, particularly surrounding employment opportunities and the supply and price of energy, all of which are exacerbated by the uncertainty of the situation – the lack of a clear plan and communication from decision-makers. It should be noted that there is talk about efforts to diversify the economy beyond resource extraction. For example, the City of Estevan is actively exploring the potential of manufacturing and various renewable energy projects; this is understood as crucial to future prosperity. However, participants were adamant that the closure of the coal industry would have a substantial ripple effect on the community. Not only would hundreds of jobs in mining and at the Boundary Dam and Shand power stations be lost, but local service industries, from mechanics to restaurants, would be heavily impacted:

“I don’t have [numbers] available but that’s a lot of families of people that would be impacted. And it would trickle down to everybody, you know? All kinds of businesses affected, the restaurants, the hotels…” One participant put it starkly: “if they shut down the power plants and the coal mine… it just cascades and snowballs until pretty soon there’s nothing here… you know, you’re sounding the death knell of the city here.”

Participants were skeptical that coal jobs could be replaced locally, although there was some enthusiasm for renewable energy. One participant explained:

“I’m a mechanic, and I would love a chance to work in windmills, or in a solar farm or something like that. If I could make a living like that, yeah, bring it on, but it’s uncertain, right… so maybe we need some solar farms here, maybe we need some wind farms here. That would be a way to transition, you know?”

But many who saw potential for alternatives remained skeptical about finding the same quality of employment and income offered by coal:

*If we get ‘til 2030, what can we bring, and what incentives do we need to get manufacturing here? Any type of agro-business, greenhouses. What are some other jobs we can get here, and – but I think we’re all very aware that we’re not going to get jobs that are equal paying, even in those industries. You can get a huge greenhouse, you can get a huge manufacturing – they’re not going to be $120,000 a year jobs for hundreds of people, right?*
Adding to worries about jobs, there are clear concerns about how the province will meet its energy demands without coal as part of the mix. Participants were adamant that the province requires the stability of a baseload power source, and that coal is the only viable option for providing it in Saskatchewan. One participant was clear in their assessment:

[With] the phase-out of coal, what I fear is, yeah there are some improvements to be made to clean it up, but if you get rid of it completely, I don’t think we have the power source to keep up with that baseload that we need... There’s no way – if we had no coal-fired power plants, there’s no way that we could survive.

When asked about the province’s stated goal of reaching 50% renewable generating capacity by 2030, many participants were skeptical that even this is achievable: “You can say you’re going to have that percentage, but are you going to be able to keep up with the baseload? That’s great, if they can, that’s great, you know? I don’t think it’s feasible.” For many participants this skepticism was justified by critiques of renewable energy technologies:

I don’t feel we have the environment for wind or solar... we live in Saskatchewan with harsh environments. And if you’re going to rely on other sources besides coal, you can run into a problem, I believe, down the road, that we could have some kind of – you could have a storm for a week out here, and all of a sudden the solar’s down, wind’s down, geez the gas pumps have froze up, we can’t get to pumping stations, ok, so then what do we do? Right?

However, a number of participants were supportive of increased renewable energy capacity – one participant called the 50% target referenced above “laudable” – but did not believe that they were viable without coal as part of the mix.

Besides meeting energy demands, another common fear is that the cost of energy, and of living in general, could become prohibitively expensive: “You can’t just shut everything down and then expect to live the way you live, it ain’t gonna happen, everything’s going to be pricey, and then, you know, can’t afford your vehicle payments, well then what?” Another participant echoed that sentiment, saying “with the position the governments are taking, we are going to have power so expensive, for the average household, it’s going to be – instead of house payments, it’s going to be paying for their energy coming in.” In sum, there was a consistent lack of faith in the ability of the province to get by without coal, and participants often cited examples of other jurisdictions where they believed power had either become prohibitively expensive after a coal phase-out or where coal power was imported after being phased-out locally, which is perceived as simply hurting local employment.
Unfairly targeted

The community members we spoke with seem to feel unrecognized and targeted despite the important role they continue to play in providing power to the province. They certainly feel that they are not being considered in political decision-making. One participant stated: "I honestly think the people at my level, you know, the blue-collar people, you know I don’t think we factor into their decision whatsoever, that’s my honest opinion." In particular, participants in Estevan were adamant in their belief that an obvious solution to these challenges is available. Estevan is home to the world’s first commercial-scale carbon capture and storage (CCS) project on a coal-fired power plant, with the project having been installed on Boundary Dam unit 3 in 2014. Participants were passionate about the merits of CCS and clearly perceive a new lease on life for coal:

*Saskatchewan took a big chance building this CCS project and it’s the first of its kind... When we can create that kind of [renewable] power, well I’d gladly say, "If we can do it, do it!"* But this carbon capture, that's part of that plan. We should be looking – just because it's coal you shouldn’t be pointing your finger at it and saying, "you know what, you're coal – that’s bad."

Another participant implored that "before you shut down, have you exhausted all your options with what burning coal is about? Obviously carbon capture works, ok, and the next one that they build is going to be better yet... we can evolve." Carbon capture also fits into a wider narrative participants told about the coal industry improving its environmental performance over the years: “you know a lot of people don’t know this but the carbon capture out there, now that they’ve finally got it running properly... the emissions coming out of there are four times cleaner than the emissions coming out of a natural gas plant... that’s a huge stride right there.” Participants believe the industry is bound to keep improving given the chance. In general, participants feel that shutting down coal is a radical step, and they favour a slower pace in meeting the challenge of reducing greenhouse gas emissions.

Another reason why participants feel talk of phasing out coal is unfair is a common perception that Saskatchewan is a small contributor to climate change. We heard many participants talk about the futility of trying to address the problem here when other countries may continue to use coal and generally fail to take action on climate change. It was a common sentiment that “we’re not even on the same page” as some other countries when it comes to emissions. As one participant explained: “what’s frustrating is we’re trying to meet these fairly tight guidelines, and that’s fine, when we look over at other parts of the world that are taking their sweet time, if really doing anything at all.” Another participant summed it up succinctly: “Either everybody steps up to the plate and helps the environment, or Canada’s going to lose.”
Overall, the perception in this community appears to be that the future of the coal industry, and therefore to some extent the community, is in the hands of politicians who are not accounting for the impact of a coal phase-out on coal-dependent communities. The community feels targeted by environmentalists, who were often labeled as ignorant and perceived to have significant influence on the political process. For example: “...in my opinion, the federal government’s plans are brutally informed, influenced by groups who, again, are poorly informed and don’t understand the reality of stuff. The federal government I believe, listens to a lot of environmental groups...” Another said: “I know a lot of these environmental groups are paying big bucks to governments... and it comes down to politics.” We heard a lot of cynicism about the political process: "Like the government is not always going to do what is best, they’re going to do what gets them the votes... If they can get more votes shutting [coal] down, that’s what they’re going to do." Beyond spheres of influence, people also just feel constrained by the general lack of clarity around the situation:

I think that’s why a lot of people, there’s that anger and that frustration – it’s so unknown. I’m not saying they’re not going to be pissed off with a plan, but some people will deal with themselves, and work with it. Whereas if you don’t have a plan, 100% of people are going to be agitated, you know, that’s my thought anyways.

Participants similarly underscored the importance of plans for achieving, and therefore legitimizing, targets: a target without a plan to achieve it is just a talking point. Returning to the goal of 50% renewable generating capacity by 2030, many expressed that without a detailed accompanying plan for achieving that target, it is perceived as hollow.

Sustaining local pride

It was clear from our interviews that community members value the coal industry and the work associated with it. It has offered a source of high-income, stable employment; an attractive alternative to post-secondary education, allowing locals to earn a high wage and receive skills-training in the process; and it has brought significant investment into the community. All of these things are difficult to replace. Combined with a lack of confidence in alternative energy options and little clear communication coming from decision-makers, this helps to explain why the community is feeling frustrated and defiant about a future without coal, particularly when they believe that CCS offers a viable solution in meeting emissions reductions targets and maintaining the status quo locally. There is a strong belief that the coal industry has improved its performance over time, and that gradual change is better than rapid change. This is a community that wants to be heard and appreciated for what it is bringing to the table. As one participant put it: “To me, supplying electricity to the system and having a safe facility out there, it gives me a lot of pride with how we do our job out there. I mean, I don’t know what else to say. I think we supply good service to the province.”
WHAT WE’RE THINKING

As we move from relaying what we heard in coal-producing communities to constructively considering our own perspectives as members of Climate Justice Saskatoon (CJS), the similarities and differences between stories emerge. As an exercise in relationship-building, our analysis essentially considers how relevant our CJS climate action framework is to those directly impacted by the policies we advocate for, such as a coal phase-out. Our analysis compares the similarities and differences in the perspectives of CJS and coal communities in Saskatchewan on the issue of coal phase-out, and we identify some of the key terms of reference within our respective stories. The appendix offers an in depth look at our perspectives as authors - as individuals, and as members of CJS - and explains how that impacts our engagement activities, and the interpretation and communication of results.

Refining our perspective of the challenge at hand

The experience of connecting with individuals in Estevan and Coronach has strengthened our understanding about the complexity of phasing out coal-fired power in Canada by 2030. Through this process we have come to recognize that each community is facing a different set of challenges, and that individual stories take on different shapes across demographics and regions. We now know we cannot make blanket assumptions about the experience of individuals in coal-producing communities, nor should we be advocating for one-size-fits-all solutions.

We also learned that challenges related to coal phase-out are nested within broader contextual challenges, such as the decline of small farms and changing employment opportunities in the oil industry. Importantly, we found that these intersecting challenges impact Estevan and Coronach differently; for example, participants in Estevan refer to changes in the oil industry more often whereas Coronach residents mention changes to farming practices. Both communities are facing uncertainties, but in Coronach in particular, we observed that uncertainty is already having a tangible effect on the lives of community members.

We heard that rural communities feel neglected by governments and that important decisions like coal-phase out are more about political gains then they are about the real people impacted by them. Overwhelmingly, we heard from participants that they are concerned about support, now and in the future, for infrastructure, health services, and employment opportunities.
The role of ‘climate change’ in our stories

One critical takeaway from this experience is the role that climate change plays (or doesn’t play) in our respective stories. To be clear, our understanding of climate change is the fundamental reason we are talking about phasing out coal. Unfortunately, climate change is not strongly represented among the perceived challenges in either Estevan or Coronach. We were happy to meet people in both communities who understand the reality of climate change and the fact that human decisions are perpetuating the problem. However, climate change was rarely mentioned by participants unless prompted by the interviewer. Unlike the stories we heard in these communities, climate change is fundamental to the CJS story about present challenges, and is central to our justification for a coal phase-out in Saskatchewan particularly within the timeline we are advocating for. In short, climate change is a vital piece of the puzzle for making sense of a coal phase-out and its timeline.

In contrast, among those we interviewed who mention climate change, the subject is often categorized as an “environmental issue,” separate from economic and social issues, and subject to personal beliefs. Through this lens, we understand that coal phase-out deadlines are disconnected from climate change and perceived as economically and morally questionable. Without climate change as part of the narrative about our energy and economic decisions in Saskatchewan, it is easier to make sense of opposition to phasing out coal. After many decades of producing power for this province, coal-producing communities are now being recast as villains (“greenhouse gas emitters”) by those they serve (“power users”). Such a shift in public narrative might help to explain uncomfortable emotions that emerged throughout interviews, such as fear about the future and resentment toward political and environmental leaders.

To CJS, this speaks to a broader tension within our climate justice narrative: in the short-term, the end of fossil fuels is not good news for everyone. Without a refined perspective that incorporates the complexities associated with the impacts of a coal phase-out on coal-producing communities, a simplistic polarization of ‘winners’ and ‘losers’ can dominate the story. We believe that climate change must be central to the conversation and should trigger a shift in perspective toward long-term planning and preparations. We are all at risk in a future with unprecedented, climate change-related impacts that will threaten our physical, natural and economic systems. We know, for example, that for farmers climate change may mean longer growing seasons, but also exposure to more invasive species and pests, less water availability in July and August, and more variable and extreme weather damage to crops and pastureland (KAP, 2018). Other sectors of our economy and society face similar challenges. This knowledge should make a meaningful difference to assessments of phasing out coal, but as other researchers have found (Norgaard, 2011), communities may default to implicitly denying that climate change is a serious problem if it is compartmentalized as an environmental issue apart from economic priorities, or if solutions threaten to disrupt social norms.
The role of climate change also affects the ways in which each of our groups assess proposed solutions and timelines. For example, among participants from Estevan in particular, CCS is perceived as a win-win solution and many participants from this community argue that the application of this technology to coal-fired power plants justifies a delayed phase-out. Participants expressed frustration about the apparent hypocrisy between simultaneously advocating for decarbonization and against a decarbonizing technology.

We were grateful to hear about participant views on this issue as these conversations forced us to think critically about the role of CCS in our climate justice framework. By considering participant views and knowledge next to our own framework as an organization, as well as doing additional research and talking to knowledgeable people on the subject, we were able to clarify our perspective and develop a coherent framework for understanding how CCS could fit in the global context of climate change.

We recognize that carbon sequestration technology could be an important contribution to a decarbonized world if powered by non-coal sources (see Appendix 2 where we expand on our reasoning). Here is where climate change plays a critical role in our story in terms of framing the challenge and justifying the timeline for action. As explained in more detail in Appendices 1 and 2, to meet the temperature targets set out in the Paris Agreement - targets to which all major governments in the world have agreed upon - we must reduce our emissions to net-zero by mid-century; the IPCC recently outlined that this will realistically require nearly halving emissions from 2010 levels by 2030 (IPCC, 2018). Such urgent timeframes make the gradual reductions that can be achieved with CCS inadequate in meeting the scale of the challenge.

In assessing CCS as a potential solution to climate change and a low-carbon transition in Saskatchewan, we thought that in some cases the differences between CCS and carbon-negative technology were not consistently reflected in participant stories. For example, some perceive that a CCS plant like Boundary Dam does not emit any greenhouse gases, when in actuality 90% of emissions are removed during power generation if the technology is operating correctly. In other words, while it is much less emissions-intensive than the status quo, CCS is not a carbon-negative or even a carbon-neutral technology. While a reduction of 90% is a significant achievement, given the timeline presented by the IPCC it is a very significant investment to make for a technology that does not reduce emissions to zero.

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Furthermore, CCS is a very costly solution. The Boundary Dam 3 retrofit cost about approximately $1.5 billion, representing a cost of about 13 cents per kilowatt hour produced (Dolter, 2016). While CCS can be made more economically efficient by using captured carbon dioxide for enhanced oil recovery, this perpetuates a fossil fuel industry that will exacerbate climate change instead of contributing to a low-carbon transition. Clearly enhanced oil recovery for the purposes of economic efficiency cannot be solution for very long if we take the Paris Agreement temperature targets seriously.

In this context, we wonder how wise it is to make a major investment in expanding CCS technology in Saskatchewan when we believe there are alternative technologies that could get us the power we need with no associated emissions. We recognize that from a participant perspective, these alternative technologies are not always viewed as low-cost or reliable, limitations which we heard further constrain the choices these communities feel they have available to them. We address some of these concerns briefly in Appendix 2, and in more detail in an upcoming technical report. Participants are concerned about a number of challenges they perceive to be associated with renewable energy sources such as wind and solar; we also recognize that there are particular advantages and disadvantages associated with these options.

Fundamentally however, with our terms of reference grounded in climate change and the timeline given by the IPCC, rapidly decarbonizing our electricity system is the only way forward. Reliable and accessible energy is important, and we are committed to addressing and exploring our shared concerns as we move forward. Ultimately, we believe that not only is it technically possible to creatively plan policy and design energy infrastructure to account for these advantages and disadvantages, but also to plan for the future in such a way as to benefit communities and create valued co-benefits.

Regarding CCS, while CJS feels that this technology may be appropriate for specific parts of the world where coal-power generating plants have recently been built to provide power to those lacking access to electricity, it does not make sense environmentally or economically to apply the same technology in Saskatchewan given the timeline in which we now have to act on climate change. If this critical piece of the story is omitted or diminished however, we understand why CCS becomes a much more viable option.

It is also important to explain why we think it is so important to take such bold action in Saskatchewan in light of having heard from many participants that what happens in Saskatchewan is inconsequential to climate change - that we are a small contributor whose efforts are dwarfed by the world’s biggest emitters. We expand on our reasoning in Appendix 2. but in brief, we think that every jurisdiction needs to take action to decarbonize if there is any hope of meeting global emissions reduction targets. The Paris Agreement allows each country to determine their own “national contribution” based on their unique challenges and strengths, and coal phase-out is important to Canada fulfilling its commitments. Canada is one of the top ten emitting nations, and Saskatchewan’s per-capita emissions are four times the national average. From a fairness perspective, we have a responsibility to address our share of the problem, and ultimately, we have more say over what happens here in Saskatchewan than we do elsewhere.
Contextualizing the choices Saskatchewan people perceive about phasing out coal

Choices are made in context, and thinking about these particular people (coal-producing communities) in this particular place and time (Saskatchewan in 2018), uncertainty about our energy future is creating barriers for those making important decisions and putting undue pressure on those in key transition points in their professional and personal lives. We learned that many people in Coronach and Estevan face major life choices that are directly and indirectly impacted by climate and energy policy-pathways. For example, those who were originally hired in the 1970s when the Coronach power plant opened are now reaching retirement-age. With increasing medical needs and declining rural infrastructure, some are opting to move closer to urban centres. However, a lack of certainty about future jobs in Coronach makes selling a home difficult. Younger workers who are moving to Coronach to replace these retirees face difficult decisions about laying down roots in a rural community with a declining population. An influx of young people who grew up in Coronach are now returning to help out on family farms alongside their work at the plant, but participants speak to the increasing pressure on small-scale agriculture and their doubts about making a living from farming alone.

One of the reasons we chose to engage with members of these communities is because we recognize that climate action is not just about abstract political decisions, and we know that the impacts of climate action, specifically a coal phase-out, are acutely felt in these communities. Now we have a better sense of the context for the role of coal-producing communities in the present, as decisions about the future of coal are being made by political representatives.

Significantly, our interpretation of participant stories is that the capacity to confront change at the community-level is perceived to be low. Instead of identifying sources of support and protection, individuals who participated in the study express feelings of isolation and opposition from governments and other communities. For example, the federal government is perceived to be playing an adversarial role in these coal producing communities, a predictable finding given that the federal government is perceived to be the source of uncertainty about the future of coal. However, instead of emerging as a “hero” or “helper” to Coronach and Estevan communities, the provincial government is painted at best as a neutral character, offering little in terms of plans, advocacy, or alternatives to those affected by a coal phase-out. There is a general perception that decision-makers do not care about and cannot understand the long-term impacts of a coal phase-out on these communities.

Additionally, some participants feel that environmental groups such as CJS have played a role in damaging their public image. Community members felt that environmental groups justify a lack of support for coal-producing communities when they label coal as “dirty,” despite the efforts made by the industry to reduce pollution. We learned that these participants feel alone; some are willing to accept coming changes, but lacking meaningful choices, such as alternative local industries. Many are struggling to know if and when they should plan to move away from the community despite their desire to stay.
Unexpectedly, we found that we strongly identify with these feelings of uncertainty, isolation and lack of meaningful choices. We also experience opposition from governments and communities that perceive our willingness to engage in the hard work around mitigating climate change as a direct attack. We also feel like we face many barriers around making important life decisions, because we are unsure about how the decisions made by our leaders in the next few decades will shape how much of the consequences of climate change we will experience in our lifetime, and our children in theirs. As climate activists, we also experience vilification in public narratives across the country and perceive a lack of political representation on the issues that matter most to us. These conditions contribute to feelings of disempowerment, frustration, and despair. We find it compelling, given our differing understanding of the issues, that groups on either side of the spectrum perceive a lack of accountability from local leaders and a desire for greater understanding and support from the general public.

Our takeaway is that this perceived lack of choices, and a lack of imagination for a “new economy,” is widespread, not only characterizing life in coal-producing communities, but urban centres and environmentalist communities as well. We, too, desire better choices, more support from government and industry leaders, and more sustainable employment and energy opportunities for Saskatchewan people. However, we recognize that in evaluating “reasonable” or “acceptable” decisions about the future of coal, our perspective as a group is different than some people in Coronach and Estevan. Members of these communities are being asked to give up a lot: a job that has provided them with a substantial income, opportunities for advancement, paid training and education upgrades, the ability to plan for their children’s futures, the opportunity to take vacations, live comfortably, and support the businesses in their communities.

Notably, we came to recognize that the values driving us to support a disruptive policy agenda like a coal phase-out are similar to those values that might motivate a coal-worker to fight for their industry. Like people in Coronach and Estevan, we value a healthy environment and fair economic opportunities, and we are disappointed with a lack of government leadership to improve the choices of everyday people. We value sustaining the conditions for a quality life, and we want a good future for ourselves and for our children. However, members of our group are also facing a lot of uncertainty around significant life decisions – such as whether it is ethical to have children at all given projections of 21st century warming. We wonder if any communities will be able to maintain quality of life in such conditions. This is a significant tension between our narrative and those who do not include climate change in their interpretive framework, because there are high stakes for all of us, despite divergent perspectives on what threats the future might hold.
Accounting for losses as well as gains

Our perspective on coal phase-out and a move to renewable energy centres upon gains, particularly in terms of reducing emissions, improving health outcomes, and respecting relationships with the land, other species, and other peoples. However, this focus on the potential positive outcomes of climate action is missing from participant narratives, and is generally considered to be a naive or an ill-informed perspective.

Conversely, participants are attune to the losses related to phasing out coal. To these communities, jobs, infrastructure, a tax base, recreational services, and health services are all on the line. In particular, these types of jobs, that provide a high-income even for entry-level positions, have few local alternatives. Participants from Coronach in particular speak to the lack of potential replacements for jobs in the local plant or mines. There is openness in both communities to alternative industries and the potential for stabilizing employment in the region, but participants struggle to envision a future without coal. Given the timeline for decarbonizing provided by the IPCC (2018) that in our mind makes phasing out coal non-negotiable, CJS strongly supports plans to introduce alternative employment opportunities in the region.

Serious investment into large-scale renewable energy projects could help Saskatchewan to reach its emissions-reduction targets, and if planned around the needs of coal-producing communities, these projects could support both energy and employment gaps in the province. Currently, the barriers to meet provincial energy targets are perceived to be too high by participants. To us, this suggests that there is work to be done to demonstrate the technological and ecological viability of solar, wind, and geothermal projects across Saskatchewan. Even by individuals in coal-dependent communities, renewables are perceived as a potentially positive addition to our power system, but the timeline for change is viewed as reckless instead of bold.

Like our study participants, we feel that the dissonance between the provincial government’s words and actions with regards to renewable energy targets undermines confidence about their resolve. For example, while a 50% renewable generating capacity target may represent a shift in the right direction, we still have not seen detailed plans of how SaskPower intends to achieve this target which leads to a lot of uncertainty for both coal-producing communities and our group alike. Furthermore whether this target truly represents a transition away from fossil fuels depends fundamentally on projections of future power demand, particularly from industry. If demand increases to 7000 MW by 2030 for example, 3500 MW of our energy will still be generated from non-renewable sources, 200 MW more than what is produced today even if coal plants are retired at the end of their natural life (SaskPower, 2017).
Furthermore, many participants indicated considerable uncertainty and doubt around themes related to the reliability of alternative energy, baseline capacity, social acceptability, and financial support for those impacted by a transition to renewable energy generation. These themes are discussed in greater detail in a subsequent report, but in short, we argue that Saskatchewan people deserve to know about the potential for renewable energy in this province, and deserve to have it implemented in a way that will provide co-benefits like steady employment. We believe that governments must be held accountable for the transition plans they make or fail to make, and how they pursue them, particularly given the timeline for avoiding the worst impacts of climate change.

When it comes to the outcome of the story about climate change and a phase-out of coal, we share with our study participants a deep concern about the future. Like the individuals we interviewed, we are worried about quality of life in the coming decades, and we wonder how much time there is to adapt to the changes ahead. Without climate change underscoring decisions about energy investments in Saskatchewan, justifications will be made for extending the life of the local coal industry and for delaying plans to implement alternative sources of energy. Our takeaway is that the future of power in this province, and the future of the communities who produce it, are not being addressed appropriately by government leaders, leading to a dangerously uncertain future for all groups involved.

Building a common frame of reference for moving forward

As we conclude this portion of the research project, we argue that there is no “silver bullet” for meeting the needs of coal-producing communities as Canada phases out coal power. We perceive clear differences between our perspective on the challenge, choices, and outcomes involved with this decision compared to the communities who will be the most directly impacted by this decision. Urban environmentalists and coal-dependent communities draw upon different facts to evaluate what choices are reasonable and acceptable, the key characters we identify do not always overlap, and the timelines for change are not necessarily aligned between our group and our participants.

However, there are also fundamental similarities between us. We share values around quality of life, stability and the best futures for our children, and we share a political and economic context for decisions about energy and the environment. Both of our groups feel isolated and frustrated in the current decision context, neglected by societal leaders, and are struggling with important life decisions. Critically, both CJS and the members of the coal-producing communities we spoke with want a plan for an energy transition that will address the considerable uncertainty we are both feeling about the future. While we may not agree on all the particulars of that plan, we both want a transition to meaningfully take into account, and provide measures to address, the challenges faced by these communities.
Given these shared values and context, CJS sees a way forward in building on what we have in common. Hypothetically, urban environmentalists and coal-producing communities have a common source of power from which to work together and advocate for multi-generational solutions, clear plans, and meaningful targets for local employment, emissions reductions, and energy production. We would also benefit from shared terms of reference - what do we want for our future? What is gained and what is lost in that future? What contextual constraints must we work within? With a common frame of reference for the problem, we can work better together for solutions.

Ultimately, we recognize that to mitigate climate change, employment and energy landscapes must change, and we acknowledge that those families directly dependent upon fossil fuel industries will be impacted by these changes. We value justice, and that includes making room in our narrative for the stories of those who are currently employed in fossil fuel industries. The purpose of this project is to build relationships with individuals in these communities so that our interpretation of the challenge, choices, and potential outcomes accounts for their priorities and concerns. We want decision-making about coal to be grounded in the science of climate change, but we also want these communities to see their perspectives reflected in frameworks for moving forward, including improved economic opportunities, stable social and health services for the community, and quality of life for their family for generations to come. At this late stage in the timeline for meaningful climate action there are no solutions that will resolve all concerns, but as a group, we are trying to understand what is desired, what is preferred, and what is possible.

The next step in our interpretive process is to relay our interpretation back to our study participants and talk to them about what we are hearing, thinking, and recommending. We want to be honest about where our perspectives appear to diverge and where our priorities may actually converge. Furthermore, there is much to catch up on about the changes to the contextual landscape for decision-making. For example, SaskPower recently decided that they will not move forward with CCS on units 4 and 5 at Boundary Dam, and there have been heightened tensions around oil infrastructure, environmental activism, and Indigenous rights, particularly in regard to the TransMountain pipeline. Finally, while we have had time to explore and try to understand participant stories, we have not yet shared our own stories, leaving this process lopsided. We are wrestling with these experiences, asking ourselves “What does justice look like in this context?” It is not an easy question, but we have a strong basis from which to explore it, a stronger sense of the limitations of our existing story, and a clearer commitment to the values that distinguish our narrative about the importance of climate justice in Saskatchewan and beyond.
WHAT WE’RE SUGGESTING

In undertaking this project our goal was to gain a deeper understanding of the perspectives of members of local coal-producing communities on the future of coal, climate change, and environmentalism. Through this, we hoped to begin building relationships between our group and those communities by identifying where our perspectives were similar and different. The last section explored this process, which we view as ongoing. Indeed, we are looking forward to returning to both Estevan and Coronach in order to continue these conversations, and share our own stories.

Through our conversations, with participants and with each other, it became clearer that there are already many steps that can be taken to begin to address the challenges outlined in this report and to move the province towards meaningful climate action. Below we outline some recommendations stemming from our research:

Engagement

1. We recognize a need to deepen our own understanding of the Saskatchewan power system and, in particular, the technical challenges of transitioning to a renewable energy model; we are in the midst of bringing together a supplemental report that begins to address this need.

2. We see a need to recognize these communities for the role they have played in the development of our province; coal has been an integral source of power for more than a century. We hope to encourage ways of continuing this positive contribution to Saskatchewan’s energy supply as the world transitions away from fossil fuels in the coming years. These communities are being asked to make a significant contribution to climate change mitigation and they deserve support in that process.

3. We see a need to enhance understanding of climate change in coal-producing communities, and around Saskatchewan. In particular, work needs to be done to highlight both how climate change has implications for social and economic systems in addition to environmental ones and how climate impacts will manifest locally in Saskatchewan. Addressing climate change is not simply a “green choice,” but a scientific, economic and moral imperative. Moreover, as a region in high latitudes, Saskatchewan will experience a more profound temperature rise relative to other areas of the globe. We have already experienced many climate change impacts. For example, research shows river basins are already facing increasing water demands, high nutrient loads, warmer temperatures, altered patterns of rainfall, snowfall, snowmelt and freeze-thaw cycling, glacier loss and permafrost thaw.¹ These changes have already increased the severity and frequency of extreme events and wildfire seasons have increased in length and intensity.

4. We see an opportunity for continued engagement between our group and members of these communities. There was clear enthusiasm from both sides to engage in conversation, and we may yet identify additional tangible ways of working towards solutions together. Understanding each other’s perspectives is likely to decrease animosity and make solutions more achievable.

¹ To learn more about this work visit www.ccrnetwork.ca
5. The need is clear for a comprehensive planning process from our government to establish a credible commitment for moving forward. There is no avoiding that meeting emissions reductions goals will impact local communities, and the stories of Estevan and Coronach demonstrate the tangible impacts of uncertainty created by a lack of communication and planning. These communities wish to help direct their own futures, and government should explore ways to empower local communities to make their choices in a transition context.

6. Such planning could be undertaken by government and partners in light of the lessons learned from successful and unsuccessful transitions in communities throughout history.

7. A wide mixture of alternative employment opportunities must be explored – renewable power generation, mine and plant decommissioning, land reclamation and remediation, increased opportunities in agriculture, etc. These opportunities should be investigated and implemented in a way that prioritizes adding capacity to communities that will be most impacted by climate change mitigation policies and climate change impacts, such as Coronach and Estevan.

Support

8. Such planning should also include tangible investments in these communities, to be directed by these communities. The uncertainty created by a lack of planning has in some cases strained local investment. In addition, community members often felt isolated and ignored by decision-makers and shared with us examples of poor infrastructure repair and a lack of amenities. This is part of a wider trend of rural decline that has been largely left unaddressed. These communities may require directed funding to replace or repair infrastructure needed to keep the community functioning.

9. One particular area that needs to be addressed in both communities is access to health care professionals. Addressing this issue may involve policy changes that incentivize health professionals to live in these communities or allow health professionals such as pharmacists or registered nurses to provide services or access typically reserved for doctors. However, we believe it is likely that action on some of the other items we have listed here would bring the added benefit of attracting new health professionals, as the communities become more stable and livable.

10. These communities, and provincial efforts at climate change mitigation broadly, would benefit from agricultural reforms that encourage smaller-scale and more labour-intensive farming; the current high-input regime has significant detrimental climate impacts and trends towards larger, less labour-intensive farms have clearly limited employment opportunities in many areas. Many participants expressed a desire to spend more time farming.
CONCLUSION

This project has impressed upon us that the lack of discussion and planning surrounding the future of coal in Saskatchewan is creating conditions of uncertainty and isolation among coal-producing communities, and that frustration and resentment about the 2030 phase-out deadline is widespread. Without climate change being considered a priority concern, there is resistance to energy policy decisions being shaped by climate commitments.

As a justice-oriented group advocating for climate solutions, we have a vested interest in understanding the potential for renewable energy in this province, and we hope to support these communities as they are impacted by climate change mitigation efforts. Exploring the stories of people who depend on coal underscored for us the differences in our interpretations of climate action, but also points to similar perspectives between groups that are often polarized politically. We both want more clarity from our government representatives about how they plan to reach their own targets with regards to energy, employment, environmental protection, and emissions reductions, particularly given the compounding impacts of uncertainty and economic decline in rural regions of the province.

Our project is ongoing, but the results outlined in this report could be useful for those seeking a relationship-based approach to climate communications, and our recommendations could help highlight opportunities for building bridges between urban environmentalists and those directly impacted by climate action, as well as opportunities for decision-makers to begin addressing some of the concerns highlighted. We are currently focused on understanding perspectives from Coronach and Estevan, but we understand that tensions faced by those in Saskatchewan might be experienced elsewhere. We hope this first step in our relationship-building process facilitates deeper questions, stronger connections, and that it moves us closer to shared terms of reference for the conversation about energy, employment, and climate action in Saskatchewan.

We are grateful to people in both communities who shared their time and stories with us. Thank you.
Climate Justice Saskatoon: An urban environmentalist group

The next section will outline the CJS and author perspectives on climate change and coal phase-out, and how this perspective led to our commitment to engage with coal communities in Saskatchewan.

Our narrative

Climate Justice Saskatoon is a community group based in Saskatoon. We are volunteers and community organizers of different ages, skills, and backgrounds, and we work together to address what we consider to be the greatest challenge of our time: climate change.

CJS is focused on promoting a low-carbon and just energy transition in our province, in Canada, and throughout the world. Our work is informed by the weight of scientific evidence that suggests we will experience significant impacts if human-induced climate change continues unabated, including widespread species loss and ecosystem degradation, and experiencing a significant reduction in quality of life, among other things. The Intergovernmental Panel on Climate Change (IPCC), representing thousands of independent scientific experts from countries around the world, concludes that there is a more than 95% probability that human-produced greenhouse gases such as carbon dioxide, methane and nitrous oxide have driven most of the observed increase in the earth’s temperature over the past 50 years (IPCC, 2014). Without efforts to limit the release of greenhouse gases to the atmosphere, the IPCC (2014) predicts 3.7°C to 4.8°C of warming (above pre-industrial global average temperatures) by the end of the Century.

The risks associated with a rising global average temperature are profound, and include more severe and frequent unpredictable weather events, significant sea level rise, substantial threats to water and food security, human health, and ecosystems (EPA, 2016; Government of Canada, 2016; IPCC, 2014). We know that in Canada and in Saskatchewan we will face some of these impacts directly, such as longer and more intense wildfire seasons, and some indirectly, for example in the form of rising costs as climate change impacts materialize in our globalized social and economic systems.

We are aware that the anticipated impacts of climate change are occurring, and will continue to occur, within our lifetimes. Younger members of our group could live to the end of the Century and experience the impacts of a world that is 4 degrees warmer. We have a direct stake in the outcome of Saskatchewan and the world’s response to climate change, and we know the window for meaningful action is rapidly closing (IPCC 2014; IPCC 2018).
Climate Justice: Our choice

The work of Climate Justice Saskatoon is based primarily in the Saskatoon area, but we structure our advocacy work in Saskatchewan within policy contexts at the international, national and provincial levels.

At the international level, the Paris Agreement of 2015 set a global target of “holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change” (UNFCCC, 2015). This goal suggests the global community collectively needs to achieve a 50 per cent reduction in emissions in the next 15 years, and below-zero emissions in 40 (IPCC, 2018).

In Canada, the Federal goal of reducing economy-wide emissions 30% below 2005 levels by 2030, and the methods to achieve this reduction such as coal phase out, are under debate. As residents of Saskatchewan, our group hears concerns about the economy and jobs, and also hears concerns around how our current efforts to reduce emissions are not enough to meet Paris Agreement obligations.

Fundamentally, our group’s perspective on this policy debate is rooted in a ‘justice’ framework. This means that the efforts of our group focus on the human and social aspects of climate change - what climate change means for us and what it means we should do.

In our view, climate change is not simply an environmental issue caused by rising greenhouse gas (GHG) emissions. Rather, it has complex societal roots and significant implications for humanity. We know that this crisis is unfolding amid tensions arising from centuries of colonialism, growing global economic inequalities, and the challenges of aligning different ways of knowing and valuing nature (Tuck, McKenzie, & McCoy, 2014). These tensions have long underscored debates during international climate negotiations around concepts such as “historical responsibility” for GHG emissions (Sayegh, 2017). We also know that climate change will impact individuals and communities differently, and will exacerbate existing inequalities as well as create new ones (IPCC, 2014).

Due to these complexities, CJS views climate change as a systemic challenge, not a result of individual decisions. We share a strong sense that Saskatchewan, and the world, is not changing as rapidly or as effectively as the challenge of climate change requires. The difficulty in accepting the reality of climate change and all that it implies is widespread, and we recognize that it impacts people across the political spectrum. We even observe an implicit resistance to change in ourselves and struggle with the tensions inherent to climate change. However, beyond the difficult emotions that arise from acknowledging the scale and scope of climate change, resistance has political, social, cultural, and economic consequences. These tensions are exploited on a broader scale by those in positions of power who deny or express skepticism about the reality of climate change, by ineffective and resistant governments, and by corporations and others who benefit from the status quo.
Understanding climate change as a moral issue means that how we act on climate change is complicated. On one hand, our best science tells us we have a very limited carbon budget remaining if we want global average temperatures to remain below 2°Celsius (McGlade & Ekins, 2015), and we want to minimize impacts on the least wealthy and the least powerful among us (IPCC, 2014). On the other hand, we recognize that a transition away from fossil fuels will disproportionately affect regions that have a fossil fuel-based economy, impacting communities supporting and supported by those industries (Bowen, 2012; Pollin & Callaci, 2012). We know that given the scale of the transition we have to make, and the timeframe we have to make it in, that workers in these regions will face layoffs, falling incomes, and the loss of important social services that their communities depend on.

While we have little personal agency to solve systemic issues alone, our advocacy focuses on exploring and confronting roadblocks to effective action. Decisions about climate change around the world are shaped by the same tensions we are experiencing here, with numerous stakeholders debating seemingly incompatible solutions (Pollin & Callaci, 2016). There is clear tension between our group calling for ambitious climate action that includes a coal phase-out, and those whose livelihoods would be most impacted by phasing out coal. This dynamic plays a role in stifling constructive public discussion around the fundamental questions we need to be asking around planning for our future.
Personal motivations for being involved with this project:

Ultimately, we are interested in exploring shared values, and building a frame of reference that is meaningful to both groups advocating for climate justice and communities that would be first impacted by a coal phase-out. In order to be explicit about the values that motivate us, as authors of this report, to explore questions about coal phase-out, we provide a brief snapshot of our personal stories:

Hayley:

What matters to you?
I care about my family, the people of Saskatchewan and the world, and the land. I have a special place in my heart for Saskatchewan and always intended to return here to work. I love the prairie and am proud that we have such diverse and rare landscapes here.

What’s at stake from your perspective with regards to phasing out coal?
Coal phase-out is one of the many steps we need to take in the process of reducing anthropogenic greenhouse gas emissions that are contributing to rapid climate change. If we do not take these steps, our lives as we have come to know them will be in serious jeopardy within my lifetime and my children’s. At the same time I recognize that the people who derive benefit from fossil fuels such as coal - including myself - are facing difficult choices and significant trade-offs in the present that make the decisions about ‘what we do about climate change’ complex.

What do you hope for in being involved with this?
I want to learn more about what coal phase-out means to the people who will be most directly affected by this decision.

Why are you involved with this project?
If we are realistically going to not only continue to enjoy our quality of life, but also build a society that is more socially fair and environmentally sustainable, we have to find ways to move forward from policy stalemates on complex issues like climate change. This project is my opportunity to explore what this might look like in Saskatchewan, as we work to build on what we have in common rather than our differences with coal-producing communities in Saskatchewan.
Justin:

What matters to you?
Fairness and equity are two important principles for me. I think everyone should have access to the conditions and opportunities required to survive and to thrive. As such, addressing climate change is imperative, and I believe that those of us in wealthier countries have a responsibility to lead in doing what’s necessary.

What’s at stake from your perspective with regards to coal phase-out?
Phasing out coal is a necessary step on our path to rapidly reducing our emissions in order to mitigate the worst potential effects of climate change. Coal has enabled us to achieve a lot, and now we’re in the challenging position of having to learn how to get on without it. Unfortunately, and essentially due to our lack of planning, a lot of livelihoods are also at stake, and we have an additional challenge of finding a way to support people and communities that are dependent on coal.

What do you hope for in being involved with this?
I hope that we can start building mutual understandings, respect, and even relationships. There is too much at stake, both in terms of climate change and livelihoods, to carry on without talking to and being honest with each other.

Why are you involved with this project?
I’m really grateful for the opportunity to hear from and engage with folks that are seeing this challenge from a very different perspective from me. I stand to learn a lot from this experience, and I hope that I have a lot to share as well. I suspect that we all want to live in thriving communities, and I want to be involved in talking about what that means for everyone.

Rachel:

What matters to you?
I care about creating the conditions for life to thrive on Earth, and I feel that it is important to aim for conditions that are fair and just to all people. It matters to me that my family can continue to enjoy and contribute to our community for generations to come.

What’s at stake from your perspective with regards to coal phase-out?
Climate change is a problem that has been understood since before I was born, but because of the inaction of previous generations, the only way to reduce greenhouse gas emissions in time is to make disruptive choices. This is a crummy situation. I don’t see how we will survive if we don’t make bold moves toward decarbonization. To me, it means we have to take care of each other as we adapt.

What do you hope for in being involved with this?
By putting my own views on the back-burner and actually listening to people most affected by coal phase-out, I hope to come away with a better sense of how people are impacted by adaptation choices. I’ve been advocating for energy alternatives without truly understanding the implications of a transition away from coal.

Why are you involved with this project?
I want to understand the perspectives of communities whose livelihoods are threatened by climate action. We need to acknowledge the tension between long-term and near-term challenges and discuss our options. I think being involved with this project will help me contribute to constructive conversations about transitioning away from fossil fuels and climate justice.
APPENDIX 2:
Our perspectives on common concerns

The following was developed in consultation with our fellow researcher and CJS member Mark Bigland-Pritchard, an energy consultant and applied physicist working in Saskatoon. Mark is working on a follow-up report complete with additional technical details and references corresponding with the questions and answers listed below.

CJS perspectives on CCS

Is coal-fired power generation carbon-neutral, or carbon-negative, when fitted with Carbon Capture and Storage (CCS) technology?

Coal with carbon capture and storage is not carbon-negative. It is not carbon-negative or carbon neutral. CCS removes up to 90% of carbon from the emissions produced when coal-fired power plants are in operation. This makes it a much better option than some high-emissions alternatives, but it is not a system that achieves decarbonization. Some of the overall energy produced goes to removing the carbon and storing it for sale to other industries - because of this "parasitic load", the emissions reduction per unit of power output is more like 85% in perfect operating conditions. So, for Saskatchewan’s lignite (brown coal) power stations, direct emissions of carbon dioxide are reduced from about 1100 tonnes per gigawatt-hour to a minimum of about 165 tonnes per gigawatt-hour. For renewables such as wind and solar the equivalent figure is zero.

Is there any way to avoid the direct emissions of carbon through CCS?

Yes, but not when paired with coal. In principle, CCS could be used on a plant burning biomass (wood, straw, etc.) instead of coal. If the biomass is grown sustainably, then in principle carbon-negative operation would be possible. However, this technology does not yet exist. It poses additional technical problems because of the variability of the fuel; and even if successfully developed and operated at scale it will compete for land use with food production in a hungry world. That does not necessarily mean that there is no place for carbon capture technology in a decarbonizing world, but the most important thing to do right now is to figure out how to provide power without producing emissions.
In the Saskatchewan context, is CCS a good investment if the goal is to address the greenhouse gas emissions that contribute to climate change?

In Saskatchewan, CCS has been applied to one coal-fired power plant (Boundary Dam 3). This reduces our overall emissions but does not eliminate them or achieve negative emissions. While the technology could be justifiably applied to brand new (i.e. recently-built) coal plants that are needed to meet growing energy demands in south and east Asia, where many residents still lack basic access to electricity, we believe it does not make sense economically or environmentally to invest in the longevity of coal power plants when in the long-term, our power sources need to be carbon neutral.

Another consideration is the health impacts and immediate environmental impacts of coal production. While CCS technology reduces greenhouse gas emissions, and can also be used to reduce sulphur dioxide emissions, it does not address other pollution associated with coal - nitrogen oxides, particulates, ozone, mercury, and other heavy metals.

Does the carbon captured by CCS in Saskatchewan contribute to emissions down the line?

Yes. If the captured carbon dioxide is simply pumped underground into permanent storage in appropriate geological formations, overall emissions are reduced - though not by as much as could be achieved by deployment of renewables. If, however, it is used for enhanced oil recovery (as is the case with Boundary Dam 3), the overall result is likely to be increased carbon dioxide emissions due to the use of the oil as a fuel.

Are there other reasons that CCS is a risky investment besides the fact that it doesn’t contribute to a meaningful reduction in greenhouse gas emissions?

CCS is also expensive. The Boundary Dam 3 retrofit cost about $1.5 billion - equivalent to an electricity cost of 14 or 15 cents per kilowatt-hour even before the costs of transmission, distribution and administration are added. Both wind and solar photovoltaic power are now reliably cheaper than this - for example, recent successful bids to install wind power in Alberta came in at an average of 3.7 cents per kilowatt-hour. Investments are important when it comes to power infrastructure, but we should be devoting resources to systems that are compatible with carbon neutral world.

If CCS is a decarbonizing technology, why do those who are concerned about climate change oppose applying the technology to coal in Saskatchewan?

Because it’s too late for CCS be a real climate solution in Saskatchewan. If the object of policy is merely to gradually reduce carbon dioxide emissions (as would have been an appropriate approach in the early 1990s), then carbon capture and storage can make a meaningful contribution. If, however, the intention is to move rapidly towards elimination of fossil fuels - as is required worldwide to meet the Paris Agreement temperature goals - then CCS is an inadequate approach.
CJS perspective on Saskatchewan’s contribution to climate change

Saskatchewan is responsible for only 10.3% of Canada’s emissions, which represents only 1.6% of global emissions. Why should we pursue an ambitious climate agenda when we’re one part of the problem?

It is true that Saskatchewan’s absolute emissions are one small part of global emissions, the sum total of which needs to be reduced rapidly in order to mitigate the worst impacts of climate change. From our perspective, that is exactly the point - every jurisdiction without exception needs to rapidly reduce its emissions if there is any hope of meeting this global challenge.

This principle is recognized in the Paris Agreement through which countries must determine their own “national contribution” to reducing global emissions in light of their unique national circumstances. We can hardly expect any other jurisdictions to do the work if we are not willing to do it ourselves. Fundamentally, we in Saskatchewan have much more control over what happens in Saskatchewan than what happens elsewhere.

If addressing climate change is everyone’s job, why should Saskatchewan make such big sacrifices compared to other places around the world?

We approach the issue of climate change through the lens of justice, prioritizing values like fairness and equity. Through this perspective, Saskatchewan’s per capita emissions are particularly concerning. Compared to other regions around the world, Saskatchewan people are among the highest emitters in the world (Qualman 2017; Saskwind, 2014). Simply put, if every jurisdiction shared our emissions intensity, it would not be possible to limit global warming to 1.5°C.

We are more than surpassing our fair share of greenhouse gases, and we believe strongly that Saskatchewan has a responsibility to make reductions based on this unequal share of the global carbon budget. In fact, our actions can actually help to address the need for some jurisdictions to continue using fossil fuels in the very short term in order to meet development goals such as providing people with access to basic services and amenities.

In terms of the emissions that are currently in the atmosphere and impacting us now, Canada has played a larger role historically in creating those emissions. For example, The World Resources Institute ranks Canada 9th out of 185 nations in terms of historical emissions, producing more than 27,000 million tonnes of carbon dioxide emissions between 1850 and 2011. Check out these graphics, which help to visualize Saskatchewan’s historical contributions (https://www.carbonmap.org/#Historical).

Currently, Canada is one of the top ten emitting nations on the planet. The reality is there are over 150 countries that produce less absolute emissions than us. If China reduced emissions to zero tomorrow, there would still be 75% of emissions unaccounted for! The only way we can be successful on this issue is for everyone to be ambitious together.
Isn’t coal just one of a range of industries that have to be phased-out or changed significantly to reduce emissions? Why is coal the main target of climate action in Canada?

Canadians are going to see a lot of changes in the coming decades as we quickly move towards decarbonizing across all sectors of society. Energy-related emissions, and coal-related emissions in particular, are an important and strategic starting point because once we have zero-carbon energy, we can begin electrifying other sectors, such as transportation, buildings, and industrial processes, without adding to our total emissions. The faster we make this shift, the better-positioned we are to reduce emissions in other sectors of our province.

Don’t we have more important problems to address in Saskatchewan than an environmental issue like climate change?

Climate change is often viewed as an environmental issue when in reality, it’s a problem that impacts our economies, our health, our social and political structures, and our relationships to one another. There are a lot of resources available where the average person can learn more about how climate change will impact us economically and socially – for example, the Canada in a Changing Climate series by Natural Resources Canada, the Prairie Climate Centre’s resources, or even Saskatchewan’s Prairie Resilience Strategy. Many industries in sectors like potash mining or agriculture have also done sector specific analysis around climate change impacts and adaptation strategies – for example, earlier this year Keystone Agricultural Producers released a report on climate change impacts to agriculture in Manitoba and farmer priorities around managing those changes (https://www.kap.ca/single-post/2018/03/05/KAP-releases-report-on-agricultural-solutions-to-climate-change).

It might not feel like an urgent issue because its impacts are spread out across the globe and often difficult to pinpoint, but the reality is we only have a small window of time - 12 years according to scientists around the world - to completely transform how we do business, including how we produce energy, how we power our vehicles, and how we sustain our food systems, our watersheds, and our economies.

These problems aren’t going anywhere. In fact, the longer we wait, the harder it becomes to reach these goals from a technical standpoint and more communities will be left behind in the transition. The good news is we have the technology to begin shifting towards decarbonizing our systems, and if we take bold action right away, we can get on track in time to avoid the worst kinds of climate change and also create new opportunities for communities impacted by climate change mitigation policies. Sometimes the economy and the environment are treated as separate things, but climate change impacts everything, and there is never going to be a better time, economically or socially-speaking, to invest in meaningful climate solutions.
CJS perspectives on the challenges of transitioning to renewable energy

Is renewable energy reliable? If we go 100% renewable, will we get blackouts and brownouts in winter when we need power? Don’t we need more reliable sources of energy like coal or natural gas to provide energy when the sun doesn’t shine or the wind doesn’t blow?

Reliable provision of equitable access to energy are important aspects of a quality energy system. Because the sun doesn’t shine all day, and the wind doesn’t constantly blow, we recognize that it is important to develop an electricity grid that can skilfully balance changes in generation between energy sources, store power, and provide additional supply when needed. We’re advocating for a diverse electricity mix with flexible infrastructure to address some of these concerns.

Our research partner, Mark Bigland-Pritchard, is preparing a subsequent report exploring Saskatchewan’s energy demand hour-by-hour over the course of a year. His analysis considers how a combination of solar, wind, geothermal, and biomass technology could be paired with battery storage and inter-provincial trading to ensure that supply meets demand. This type of research is being done all over the world, and the unique conditions in our province merit a made-in-Saskatchewan approach.

For example, in Saskatchewan, about 16% of our generating capacity already comes from hydro which can be operated flexibly to a certain extent to address fluctuations in other sources of energy (provided that due concern is given to downstream users). SaskPower also has plans for potential additional small-scale (i.e. run-of-the-river) developments for more northern, remote communities. It is also possible to trade energy with neighbouring provinces such as Manitoba, and pursue ambitious energy efficiency programs to reduce the amount of energy we have to produce.

We recognize renewable energy has advantages and disadvantages that are important to consider as we move to transform our electricity grid. While it isn’t perfect, it is non-emitting and central to decarbonizing other sectors of our society by mid-Century. We believe that the benefits of renewable energy, and most importantly the imperative to eliminate carbon emissions, outweigh associated problems. We should absolutely strive to address such problems as they exist, but we cannot afford to delay the transition to non-emitting energy sources.

Can renewable energy work in remote places with harsh climates, like many communities in Canada?

Every context is unique for renewable energy. While some communities may have an abundance of one resource, they may lack in others. Some communities may have easy access to the existing electricity grid, others may be remote and depend on diesel generators. Some communities may have a labour force with the skills to install and operate various energy technologies while other may not. Similarly some communities may face conditions such as remoteness or harsh climates that need to be taken into consideration when transforming the electricity grid - this may be the case for many communities across Canada.

The good news is a harsh climate or remoteness in and of itself is not a deal-breaker when it comes to renewable energy. Renewable energy has been deployed successfully in remote communities around the world. One source of inspiration for Saskatchewan can be jurisdictions such as Alaska, a state with more remote communities and harsher weather than even Canada. Alaska is a world leader on renewable energy development in these types of conditions, primarily because transporting fossil fuels to these remote communities has driven electricity prices incredibly high (Shaw, 2017).
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