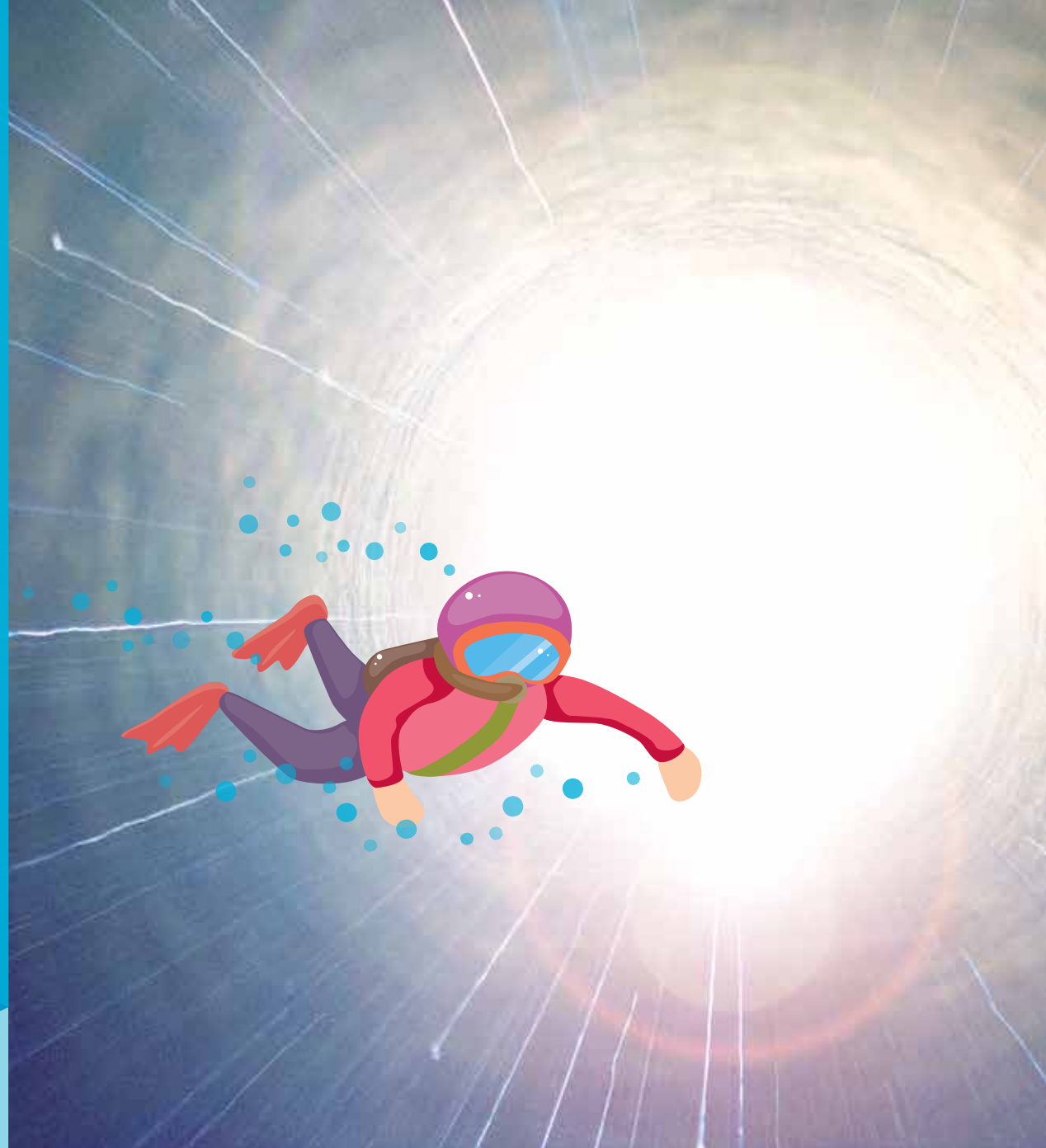


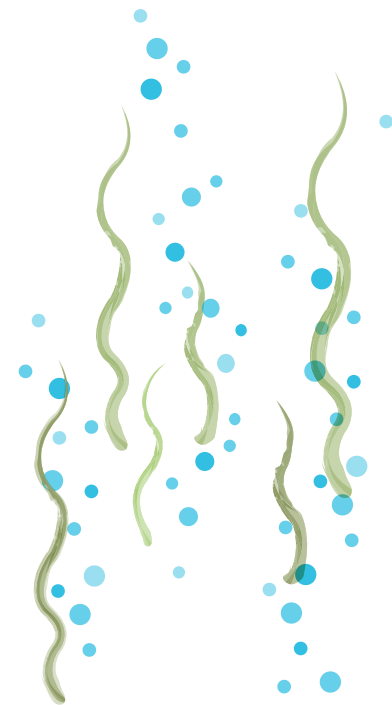
BREATH TO DEPTH





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DEDICATED FOCUS.
SYSTEMIC IMPACT.
EVOLUTIONARY JOURNEY.
CATALYZING CHANGE.
FORWARD LOOKING.

Message from the CoLab Director

The Canadian landscape for innovation today is quite a sight to behold, and amidst this view is the recent rise of public sector innovation labs. Labs have become popular entities for catalyzing change through their use of unconventional approaches for policy and service design, and their ambition for systemic impact. It is this drive to impact that makes work from a start-up concept to a mature lab an evolutionary journey.

And so, I am particularly proud to introduce our 2017 – 2018 portfolio which, in many ways, captures a key inflection point in our evolution as the Alberta CoLab team – a shift that I characterize as moving from **breadth to depth**. Presented here are 15 projects that demonstrate exactly what this means:

- taking on passion projects that have deepened and expanded our skill sets to include foresight modeling, gamification, and behavioural insights;
- tailoring our capacity building efforts to target a growing level of sophistication in the public service and the external innovation community; and,
- a dedicated focus on the high-value space of energy transition and what this means for Alberta.

While the work and thought-leadership of the CoLab team has inspired the launch of other similar initiatives across Canada and internationally, we have always pointed our eyes to what the next generation of this work could look like. It is my belief that this deeper focus – on process and subject matter expertise – is key for mobilizing and integrating a truly systemic approach to policy and strategy, and further demonstrates the concrete value that public sector innovation labs can deliver.

The space of energy transition, in particular, has been an exciting new venture into largely unmapped territory. The global shift to a low-carbon energy system is a future rife with uncertainty and disruptive potential, and it is a future that will require both innovative thinking and doing. Fulsomely understanding and moving forward in this space calls for a comprehensive and collaborative approach that is at the heart of the innovation lab movement. At Alberta CoLab, we look forward to bridging and growing these conversations in the years ahead.



Keren Perla
Director, Alberta CoLab
keren.perla@gov.ab.ca

About Us

Alberta CoLab – also known as the Energy Transition and Policy Innovation Unit – lives at the intersection of energy and innovation. Founded in 2014 as a cross-ministry hub for systemic design and strategic foresight, Alberta CoLab is a space, a team, and an approach based in the Government of Alberta's Department of Energy

CoLab is a Space

CoLab's custom-built studio is designed to help shift the way the Government of Alberta navigates its most complex challenges: through collaboration, co-design, and co-creation. It is a pretty cool space, because the walls are all whiteboards and the furniture is all on wheels! Designed for maximum flexibility and extreme visualization, the CoLab provides a space for up to 30 people to work together to visualize and prototype innovative solutions.

CoLab is a Team

Alberta CoLab is staffed by a small – but mighty! – team skilled in foresight, systemic design, and design facilitation. We are backed by communities of practice that span the Government of Alberta. Our team has diverse backgrounds and skillsets, but we share common values and a mindset that is open, inquiring, and forward-looking.



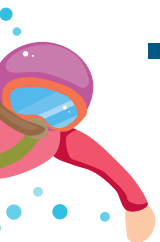


CoLab is an Approach

Since its inception, CoLab has assisted with many of the Government of Alberta's most complex strategy and policy challenges. This is where we believe we can be most useful: on challenges that lie at the intersection of departmental and organizational boundaries. These challenges are complex – we refer to them as messes – and it is our job to work with others to tackle them.

Through our four work streams (projects, capacity building, field building, and advisory services), we do this by:

- Starting with the needs of Albertans.
- Collaborating across boundaries with unusual suspects.
- Scanning for weak signals and digging for deep drivers.
- Embracing complexity and ambiguity.
- Making our thinking tangible by creating and visualizing together.
- Building robustness and adaptability for an unknown future.
- Learning by doing, and iterating between action and reflection.



TOP: Spencer, Keren, and Salva demonstrate just how much they love journey mapping at CoLab's Systemic Design Community of practice session, July 2018. Don't stop believin'!

BOTTOM: Brent loving his job, March 2017.



Purpose Statement

Alberta CoLab exists to create new paths forward through complex and shifting landscapes.

ABOVE: Roya listens to the conversation at CONVERGE, the first gathering of Canadian lab practitioners held in Vancouver, June 2018.

Our Values

- **CREATIVITY** We push boundaries, inspiring possibilities and bringing new ideas to life.
- **CURIOSITY** We explore and experiment, focusing on learning as we journey to unknown destinations.
- **EMPATHY** We practice compassion and appreciation among people (including each other) and systems (including those we aspire to change).
- **EXCELLENCE** We strive for excellence in our work and in the services we offer.
- **JOY** We delight in playfulness as a vital quality for collaborative problem-solving and innovation. #zombies
- **PARTNERSHIP** We build mutually beneficial relationships to further shared aspirations.



ABOVE: Salva after presenting on CoLab's evaluation approach to the Government of Alberta's Evaluation and Assessment Network, June 2018.

Meet the Team



Keren Perla

Director

What was a highlight of your work?

Personally, a highlight was being nominated as one of Edmonton's Top 40 Under 40 for advancing the work of the lab and the team. The success of the CoLab could not have happened without the ingenuity, creativity, and boldness of this team. Winning Top 40 was just such a great acknowledgment of what I already knew – this is an amazing crew and an amazing concept, and it's pretty impressive what we've been able to grow in the service thus far.

What was the biggest work-related challenge you faced?

Over the past years, it wasn't unusual to hear from people that the client really liked what we were created, but that the great ideas often got stuck behind a firewall of government structure. It's a challenge all too familiar for many public sector labs that limits our ability to enable systems change; this calls for integrative thinking – how can we challenge the system in a way that is valued? It's why we've continued to evolve how we work and the type of work that we do in a way that really harnesses our corporate culture, history and leadership – all things that form the unique landscape in which innovative ideas must both navigate and thrive.

What was your favourite moment?

For me, humour is an integral part of innovation – it's a booster shot for an AHA! moment. Last summer, we had the pleasure of being visited by a Dutch delegation of young public servants and innovators. They were on a mission to explore new and interesting models for innovation in Canada. The even greater part? We capped off the formal presentation with a fairly competitive game of 'Can you hit the zombie with the nerf gun?'. I'm pretty sure I won.



RIGHT: Keren pictured with University of Alberta Professor and training collaborator David Kahane during CoLab's Systemic Design Training Intensive, November 2018.



Brent Wellsch

Manager of Systemic Design and
Social Innovation

What was a highlight of your work?

What a question! Reflecting on my own work the past two years I am particularly proud of the diversity of projects I have had the privilege and opportunity to be a part of. I have worked with Children Services, Community and Social Services, Municipal Affairs, Service Alberta, Education, Health, Energy, Culture and Tourism, Environment and Parks, Economic Development and Trade, and Status of Women. The diversity of complex challenges that these areas are working on has allowed me to refine my approach and practice within different contexts and circumstances, thereby accelerating my ongoing learning in the space of design facilitation. In short, I am humbled by the privilege to be a part of these endeavors.

What is something you learned that you will take with you moving forward?

Something that stands out to me from a practice perspective is being sensitive to what I have referred to as the 'complexity wall.' Specifically, this has to do with the importance of assigning my attention and care to individuals that are being asked to engage in ways of thinking, working, and doing that may be foreign or different to them. Exploring complex issues can be tense and people can feel exposed and vulnerable at times during these processes. As the process lead, my 'ah-ha' is that I need to be aware of this and be there for people to support them, as best I can, if they are feeling overwhelmed during these processes.

RIGHT: Brent determines the winning Marshmallow Challenge structure during CoLab's Systemic Design Training Intensive, November 2017.

Looking ahead, what do you see on the horizon for CoLab and what are you most excited about?

Looking ahead to 2019-2020, I would love to see CoLab sharpen our qualitative research expertise with the creative license to do user research on projects where there is a clear need to better understand the needs (known and latent), wants, desires, hopes, and fears of the users we are designing for. In particular, I see an opportunity for this in the projects we are engaged with pertaining to energy transition. I also look forward to experiencing and reflecting on the next steps in CoLab's journey. CoLab has shifted its model quite substantially since its inception in 2014. This is the result of deep reflection on how CoLab can be best situated to provide the highest quality of service as possible to both the Government of Alberta and the broader public service innovation movement.





Roya Damabi

Senior Systemic Designer

What was a highlight of your work?

A recent highlight has been creating a workshop space in our internal Systemic Design Community of Practice for public servants to design and lead activities and conversations. There are very few 'safe-to-fail' spaces for public servants to test ideas, try new things, and gain constructive feedback from their colleagues in a supportive environment. My aspiration is that this space will complement our other training and capacity building work to better enable public servants to put into practice the concepts and tools they learn about to benefit their work in service of others.

What was your favourite moment?

Several come to mind. My biggest laugh: playing my first role-playing game and realizing that I can't just do whatever I want with my magical powers; even in fake worlds, there are rules (whatever!). I will happily live up to my aggressively whimsical status. Celebrating Pi(e) Day in the donut, the first ever Systemic Design eXchange cocktail – the Causal Loop, Spencer in front of a wall of pretzels, and discovering strange shops in small town Alberta ("We sell crystals and ammo!") while traveling around learning about school wellbeing are also highlights.

What is something you learned that you will take with you moving forward?

My learning experiences in 2018, in particular, emphasized for me the importance of relationships and how these manifest in change-efforts; relatedly, how these are expressed in how we think about and visualize systems as we work in them. One of the skillsets I am working to increase is capturing conversations – some call this graphic facilitation, recording, or scribing – in ways that are meaningful to people. I was able to take a wonderful workshop with Kely Bird where I learned about the many levels of this practice and how to think about systems in a new way – one that is more relational and less piecemeal. Moving forward, I aspire to better integrate this into my own practices.



ABOVE: Roya with members of Project Blue Thumb, a social lab aimed at improving and maintaining water quality in the Red Deer River watershed, May 2017. #BlueThumbsUp



Spencer Beacock

Systemic Designer

What was a highlight of your work?

A highlight of my work was developing a new tool to help Department of Energy staff deepen their systemic understanding of Alberta's energy and non-energy commodities, while collaborating with partners inside and outside government!

What was your favourite moment, and what made it so?

When I moved cities and entered a new professional community, the people I've met have been an anchor in a time of turbulence. The addition of Nerf guns to our work area is a favourite moment – not only did we have fun as a team, but it provided a fun ice breaker for anyone who visited the donut!



What is something you learned that you will take with you moving forward?

I have learned a great deal about the tenacity and patience that it takes to work in government. In government, the risks are broader, encompassing reputation, ethical/moral minefields, and clear mandates, and the system can often feel more fragile—there are fewer resources to start with, and a sharper eye from the public keeps watch over how they're used. These kinds of risks can freeze public decision-makers in their tracks, and it can be hard, sometimes, to identify the kind of value that might shift them, let alone figuring out how to operationalize that knowledge. Bricolage is a French word which refers to a process of making something out of scrap, of identifying the right seemingly-unrelated pieces and putting them together in the right way (and at the right time). The CoLab team's approach to design in government seems like a great example of this!

LEFT: Spencer works the Alberta CoLab booth at the Government of Alberta's Policy Matters Conference, held in Edmonton, June 2018.



Jesse Toor

Manager of Foresight and
Technology Innovation

What was a highlight of your work?

A highlight for me was launching CoLab's first lab project on Sustainable Mobility and working closer together to bridge the Strategic Foresight and Technology Innovation arms of our unit. Sustainable Mobility incorporated trend analysis, scenario development, emissions modelling, and economic modelling to undertake a comprehensive analysis into energy and mobility. This work led to direct policy feedback into ongoing policy development, such as the Canada's Clean Fuel Standard, while also providing strategic insight into emerging trends in sustainable mobility for the Department of Energy. Sustainable Mobility proved to be a successful pilot for many Lab projects to come.

What was your favourite moment?

Not so much a single favorite 'moment', but 'moments'. For me, part of the fun of working in CoLab is participating in ongoing out-of-work activities with the team. From regular Friday lunch get-togethers to tabletop game nights, I look at the team not just as co-workers, but friends. If I had to pick one moment though, it would definitely be hiking the Fairyland Loop Trail with Salva during our trip through Utah.

What is something you learned that you will take with you moving forward?

Learning more about the impact of behavioural insights on technology adoption, particularly in relation to CoLab's Sustainable Mobility Lab Project. Often, we look at traditional economic supply and demand models to determine uptake for new technologies, but the field of behavioural insights explores how and why the way consumer thinking influences technology adoption. Combining behavioural insights with the emerging consumer preferences around electric vehicles surfaces insights into new and unique value propositions, which I'll personally be more cognisant of as we look at technology uptake.



ABOVE: Jesse and Salva take a trip on ELA, Alberta's first automated bus, in Edmonton, October 2018.



Salvatore Cucchiara
Senior Foresight Strategist

What was a highlight of your work?

A highlight of my work was pushing CoLab's envelope on quantification and translating numbers into strategic insights. The opportunity laid with modelling potential pathways through which the refining sector might comply with the proposed Clean Fuel Standard – arguably the single largest emission-reduction policy in the federal government's climate plan. This work helped CoLab cement its role as a credible contributor to, not just a facilitator of, policy conversations on important energy issues.

What was the biggest work-related challenge you faced?

One of the biggest — and most rewarding — challenges was facilitating a strategy session for the Premier's Council on the Status of People with Disabilities. CoLab prides itself for its un-traditional facilitation tools, which are designed to stimulate latent approaches, such as visual thinking and story-telling. Working with the Council made me realize the ableism that underpins these innovative tools and, therefore, their limitations in a setting where seeing and hearing are constrained.

What was your favourite moment, and what made it so?

A favourite moment of mine was participating in a role-playing game with my colleagues. The task was to find and return a magical artifact to a wealthy buyer in a fictional eighteen-century city, where danger lurked just around the corner at any moment. The funniest part was when Tory (Victoria Bachmann, the Director of Agency Governance and Intergovernmental Relations in the Department of Energy, who is well known for her strong organizational skills) tried to convince a group of us to follow her plan –and neither Jesse nor I would have any of it! I am pretty sure Jesse's character ended up in prison.



ABOVE: Salva demonstrates his magic card tricks to the amazement of both Spencer and Alexandria in the donut, March 2018.



Alexandria Fisher

Strategic Foresight Analyst

What was a highlight of your work?

The highlight of my work over the 2017-18 period was contributing to the Sustainable Mobility Project. I enjoyed taking a deep dive into new subject matter and learning new skills as part of the project. What made this project special is the insights we uncovered with respect to how vehicle electrification and oil displacement will have implications for government policy and, ultimately, Albertans.

What was the biggest work-related challenge you faced?

My biggest work related challenge was the quantitative modelling required for the electric vehicle projections as part of the Sustainable Mobility Project. This modelling

required me to learn new skills and stretched my quantitative modelling capabilities. With the support of my coworkers I was able to learn the skills required to model different projections of electric vehicle adoption in Alberta and the potential demands on the electrical grid.

What is something you learned that you will take with you moving forward?

Moving forward I will take with me the strategic foresight methodologies I have learned over the past year. These tools, such as horizon scanning and using a trend radar, will allow me to take a more systemic view of policy development, allowing me to produce recommendations that are more robust and account for potential disruptions.

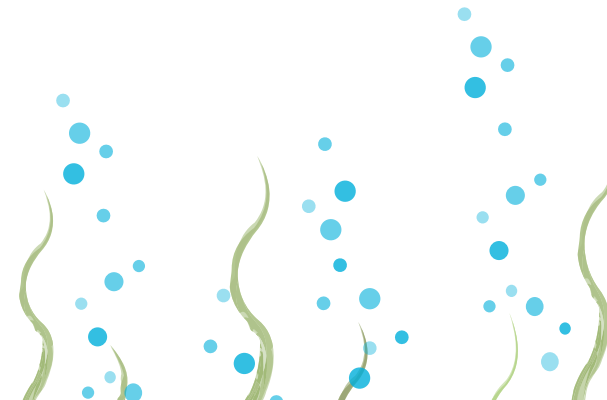


LEFT: Alexandria, here with other presenters, presented on the topic of unconscious bias in the Department of Energy's first Pecha Kucha Event – Unlocking Innovation – organized by Alberta CoLab in August 2017.

Lead Projects

In 2018, CoLab redefined its business model. The team reoriented its work around three core projects that were led and managed by CoLab and engaged all team members. The team chose these lead – or ‘lab’ – projects to enable the team to use the full range of its skills, to have a greater role in direction setting and implementation, and to demonstrate the full range of its abilities to deliver both value and innovation in the energy transition space.

The following three projects highlight CoLab’s aspiration to take on work that brings together systemic design, strategic foresight, and strategy to deliver innovative, meaningful solutions at the intersection of social, technological, and process innovation.



Sustainable Mobility

Context

Duration April 2018 – December 2018 (Phase I)

Sponsors Assistant Deputy Minister, Strategic Policy Division, Alberta Energy
Assistant Deputy Minister, Electricity and Sustainable Energy, Alberta Energy

Participants Outreach for the project involved engagement with over 100 stakeholders, including internal Department staff, Government of Alberta staff (Environment and Parks, Climate Change Office, Economic Development and Trade, Transportation) and external innovation labs (Energy Futures Lab)

Method Focus Mixed Methods

Work Stream Lead Projects

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

How might Alberta better understand the long-term energy transition to the low-carbon movement of people and things?

Overview

CoLab launched the Sustainable Mobility Project ('SusMo') to explore and evaluate the feasibility and impacts to Alberta from trends and developments advancing a shift towards low-carbon transportation.

Given the complexity and uncertainty around sustainable mobility developments, SusMo sought to understand future possibilities through various scenarios rather than serve as a predictor of the future. Specifically, the project explored potential short- to long-term changes to the transportation sector (air, marine, rail, industrial vehicle, heavy-duty vehicle, light-duty vehicle) and the subsequent implications for Alberta given current and emerging:

- trends in 'Mobility-as-a-Service' (electric, shared, autonomous and/or connected vehicles);
- renewable policies (Pan-Canadian Framework on Clean Growth and Climate Change, Alberta Climate Leadership Plan, Alberta Renewable Fuel Standard, Canada Clean Fuel Standard, Alberta Modernized Electricity Framework, Alberta Renewable Electricity Program);
- behavioural insights surrounding the interest and adoption of practices, technologies, and approaches related to sustainable mobility;
- technical/fuel specifications; and,

- economic scenarios (emerging business models, auto manufacturer trends, consumer behaviour, and electricity demand forecasts).

While sustainable mobility is a complex system encompassing economic, social, cultural, and environmental dynamics, CoLab's research focused on three key areas identified as having the most significant near-term impacts for energy policy directions: fuel standards, zero-emissions vehicles, and Albertans' values and perceptions of mobility options.

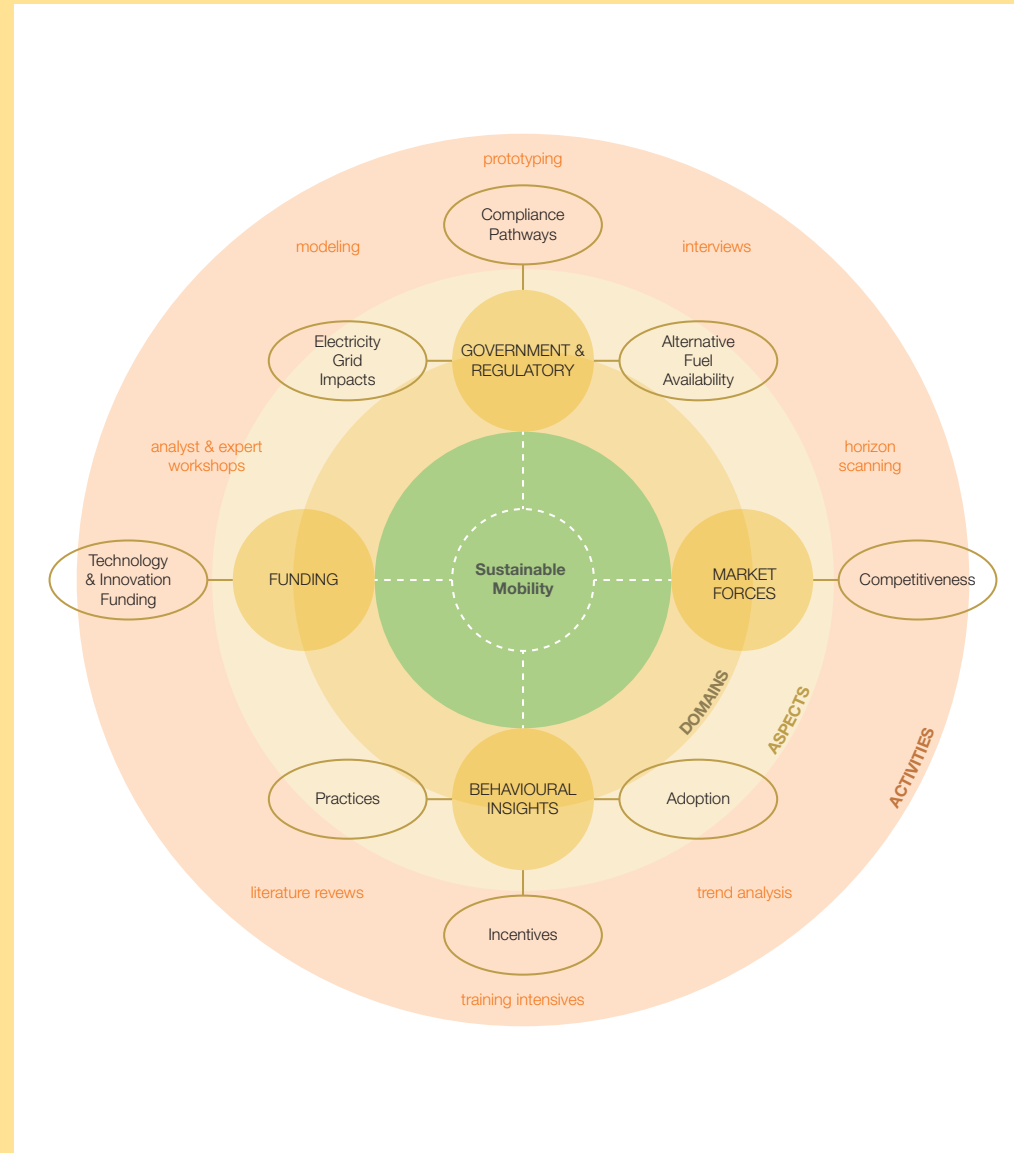
In its approach, CoLab explored various facets of SusMo under the following four domains:

- 1 Government and Regulatory:** analysis of key policy and regulatory gaps in the context of key trend scenarios in areas of alternative fuel availability, electricity grid impacts, and compliance pathways.
- 2 Market Forces:** analysis of Alberta's competitive landscape around energy development; in particular, fuel market impacts in the context of key trend scenarios.
- 3 Behavioural Insights:** exploration of challenges and opportunities related to people's values, practices, and behaviours related to energy, mobility, and related technology adoption.
- 4 Ecosystem:** analysis of Alberta's technology and innovation system support for sustainable mobility.

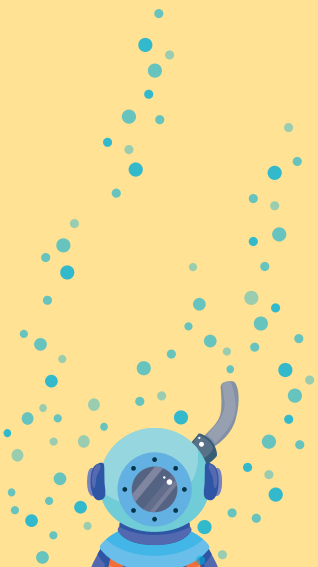
Impact

SusMo brought together a diverse range of system actors from inside and outside government to work together in an interconnected way. Specifically, SusMo combined tools from systems thinking, design thinking, strategic foresight, emissions modelling, and economic modelling to undertake a systemic exploration of SusMo in the Alberta context – and beyond. Technology adoption – an integral aspect of SusMo – is regularly looked at from a technological or economic lens, overlooking social factors like values, identity, and perceptions around different forms of mobility and energy. The approach of combining technological, social, and economic drivers is instructive for other projects, diverting from the typical siloed approach to problem-solving.

SusMo took advantage of a confluence of factors around energy and mobility, including impending fuel standard changes, climate change emissions targets, and demographic pressures on transportation in major urban centres to explore a space that could help Alberta be more resilient in a carbon-constrained context. Findings have the potential to influence current and future energy policy and strategy, the development of new behaviourally-informed interventions to help Albertans make sustainable choices related to mobility and transportation, and to support efforts to maintain the health of Alberta's economy while meeting climate and emissions targets.



ABOVE: Sustainable Mobility: Domains of Exploration.





ABOVE: Synthesizing insights from the expert workshop.

As part of SusMo, CoLab conducted research and analysis to explore scenarios and the potential quantitative impacts of sustainable mobility in Alberta. This included an analysis of alternative fuel availability, including renewable feedstocks (biofuels, renewable electricity) and/or carbon offsets (credits, trading systems) to meet current and emerging sustainable mobility policies. Similarly, the team completed research around the electrification of mobility to explore implications and opportunities for electricity generation and distribution given emerging developments and various future compliance scenarios.

Beyond the Alberta Department of Energy, key beneficiaries include the Government of Alberta's Alberta Climate Change Office, Alberta Environment and Parks, Alberta Economic Development and Trade, and Alberta Transportation. Departmental stakeholders and those with whom Alberta CoLab has strong working relationships in the energy sector will also benefit by using the research, modelling tools, and new processes generated from this work. The Project will benefit citizens by supporting more robust and aligned strategy development within the Government of Alberta – strategy that is more deeply grounded in an understanding of both market research and citizen-level behaviours and preferences.

Key Insights – Content/Challenge

High-level insights for each domain area include the following:

Government and Regulatory Trends

- There is an increasing likelihood that a decline in gasoline demand in key Alberta crude oil export markets may start to occur in the 2020s. This will be driven largely by increasing vehicle efficiency regulations, and increasing adoption of renewable fuel mandates.
- Emerging vehicle electrification trends may accelerate a shift in demand post 2025 in critical markets currently targeted for Alberta crude oils. Zero Emission Vehicles (ZEVs), in particular, are anticipated to be a compounding factor.
- Many oil and gas (hydrocarbon) companies continue to develop business strategies for a world of incremental change. While many acknowledge the likelihood of change in the transport sector, investment and activities do not overtly recognize the potential impact on mobility trends on increasing or decreasing demand for transportation fuels.
- There is a role for government in incentivizing and supporting this shift and de-risking pilot projects/clearing regulatory hurdles for new industries to grow. There is a key question about where the opportunity is for Alberta to play in the mobility value chain.

Renewable Fuel Availability and Compliance Pathways

- Government and industry related research and innovation funding of bioenergy may result in new sectors and value chains in the area of biomass, waste and natural gas conversion technologies.
- Emerging credit/debit trading structure to meet low-carbon fuel standards may result in new emission trading markets.
- Expect increased industry investment and diversification in renewable fuels sector, including biofuels, bioprocessing, hydrogen, and Liquid Natural Gas.

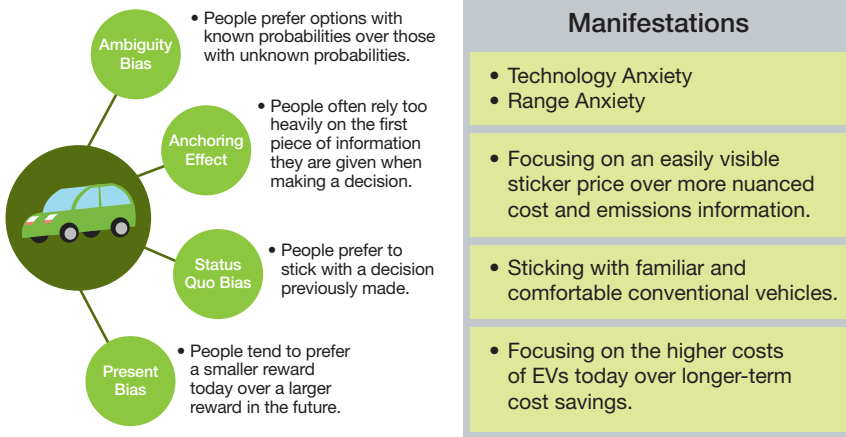
“The Sustainable Mobility Project provided me with a much better understanding of the role mobility plays in social impact and emerging smart cities.”

– Workshop Participant

Electricity Grid Impacts and Compliance Pathways

- By 2030, ZEVs may comprise three to eight percent of Alberta's light- to medium-duty vehicle fleet. Future ZEV adoption may pose challenges to local electricity distribution systems, as adoption will likely be concentrated in select (mostly urban) neighbourhoods.
- Residential infrastructure will be the most important form of ZEV charging. Up to 80–90% of future ZEV charging events are expected to occur at residential households.

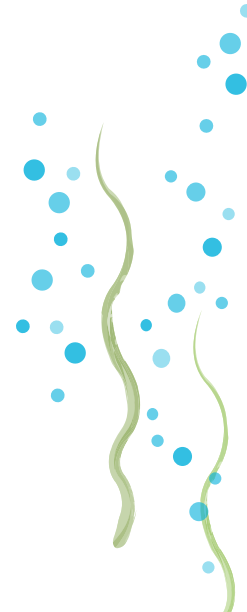
EVs – Behavioural Barriers: Pre-Decision



ABOVE: Research explored the behavioural barriers to Electric Vehicle (EV) adoption.

Behavioural Insights

- To date, Alberta's electricity usage and electric vehicle projections have focused on demographic growth and status quo behaviours. Incorporating a behavioural lens would provide more systemic and robust scenarios.
- Energy policy is about the intersections of climate change, energy security and energy affordability. Interventions that change consumer behaviour to reduce energy demand or make energy supply more responsive to demand can make a significant contribution to emissions reduction strategies. At the same time, failing to address consumer concerns about supply and affordability can hamper these interventions and their potential impact.
- In North America, most current infrastructure reflects pervasive mental models and perceptions about vehicles and vehicle ownership – in particular, mental models around independence, freedom, masculinity, and fun. Related to vehicle choice, this may manifest in a preference for visually 'tougher' looking, bigger, heavier vehicles over smaller, lighter (less emissions-intensive) ones.
- While vehicle electrification trends may accelerate a shift in Alberta's crude oil demand in critical markets, millennial values around ownership and the environment, changing consumer preferences, and increasing rates of technology adoption will also impact the province.



Recommendations and Next Steps

Following the completion of SusMo Phase I in late 2018, CoLab put forward recommendations to its project sponsors using a three-tier framework: (1) Provide Awareness, (2) Adapt to Conditions, and (3) Shape Direction. Because the majority of recommendations are cross-ministry and cross-government in nature, socialization and integration at these three levels are key for refining and advancing SusMo work.

TIER 1: PROVIDE AWARENESS

- Continue to provide policy and technical input into conversations related to fuel standards and electrification.
- Continue to support research and innovation funding discussions for sustainable mobility.
- Extend strategic foresight modeling on sustainable mobility to include the cumulative effects of ZEVs, autonomous vehicles, and mobility-as-a-service (MAAS) models.

TIER 2: ADAPT TO CONDITIONS

- Develop a liquid fuels and electricity Life Cycle Assessment (LCA) and compliance model.
- Incorporate user testing and/or a behavioural insights research stream to support the development of distribution, community generation, micro generation, particularly in relation to hotspots and rural Alberta.

TIER 3: SHAPE DIRECTION

- Establish a provincial position on sustainable mobility, working across ministries and in conjunction with municipalities.
- Incorporate provincial targets on climate change into innovation and research frameworks.
- Develop a ZEV external collaboration network to ensure policy alignment and grid readiness through an integrated strategy.
- Explore a utility credit market to incentivize the use of low-carbon electricity through both point of sale and community-based EV programs.

SusMo Phase II is envisioned to launch in early 2019. When it launches, CoLab recommends focusing on two areas: (1) refinery-by-refinery competitiveness assessment for a low-carbon fuel standard scenario and (2) user-research to support the development of a distribution policy, with a particular focus on retailing.



Key Insights – Process/CoLab Perspective

The Importance of a Systemic Approach

SusMo is CoLab's first official lead project. It combined traditional and emerging policy making approaches around both technological and social innovation to tackle a systemic challenge. The project models the way for a new standard in policy research and future CoLab work that integrates quantitative modelling with user and qualitative research to develop recommendations that cross departmental and sector boundaries. This work is the first to incorporate the lens of behavioural insights to explore energy-related decision making at the individual, household, community, and industry scales (it is also the first known project in the Government of Alberta to use behavioural insights).

Moving forward, and as part of SusMo Phase II, there is potential to both replicate and expand this systemic and multi-departmental approach to orient teams around key public policy challenges and formally tie desired public service competencies like strategic foresight and systemic design to specific lines of work.

There is also potential to build on Phase I and expand its scope to include additional user research, stakeholder engagement, modelling, and/or the development of behaviourally informed interventions grounded in evidence.

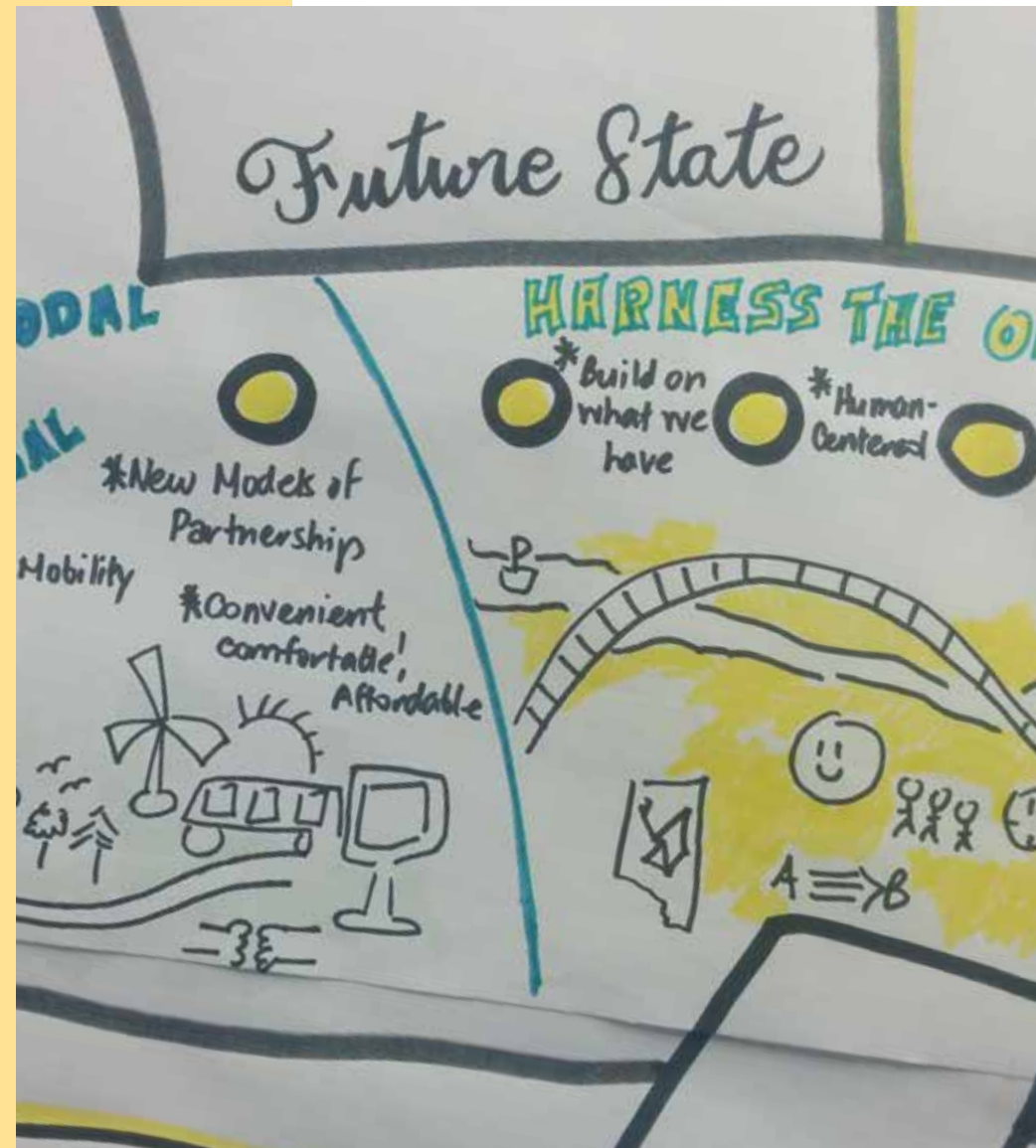
ABOVE: Storyboarding the future of sustainable mobility in CoLab's Systemic Design Training Intensive, May 2018.

Open Engagement has Two-Way Benefits

Concurrent to the more techno-economic work streams, CoLab engaged in multiple expert interviews with those working in areas related to sustainable mobility. Other collaborators included CoLab's Strategic Foresight and Systemic Design Training Intensive cohorts, who identified key trends and drivers, built scenarios, created system maps, and created prototypes for future testing. Multiple workshops helped frame insights, socialize new concepts, and test findings, and CoLab also engaged with senior leadership from multiple areas to provide ongoing direction and feedback.

To help test and refine interim findings, CoLab partnered with the Energy Futures Lab (EFL) to share preliminary SusMo results as part of EFL's one-day Accelerator workshop on 'Mobility in a Low Carbon Future'. This 80-person, multi-stakeholder workshop enabled CoLab to explore its research with a diverse, knowledgeable group and to foster discussions around innovations in hydrogen, biofuels, smart cities, behavioural insights, and lithium development.

CoLab organized a Sustainable Mobility Speakers Series to help share current research and practices by those working in academia and in municipal governments, enabling the speakers to learn about CoLab's work and discussions taking place at the provincial level.



ABOVE: An image from the canvas capturing insights on sustainable mobility during CoLab's Systemic Design Training Intensive, May 2018.

Energy Future Balances

Context

Duration April 2018 – March 2019

Sponsors Assistant Deputy Minister, Strategic Policy, Alberta Energy
Assistant Deputy Minister, Resource Development Policy, Alberta Energy

Participants Approximately 30 individuals were engaged in the user needs assessment and testing.

Method Focus Systemic Design, Digital Interface Design

Work Stream Lead Projects

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

How might we design a platform for Department of Energy staff to visualize Alberta's energy system as a portfolio of commodities?

Overview

The purpose of the Energy Future Balances project was to develop an interface to make visible the complexity and interconnectedness in Alberta's energy system. The objective was to prompt a shift from thinking of the energy system as a bunch of stand-alone commodities to thinking of the energy system as a networked, systemic, and evolving portfolio.

Core objectives included the following:

- The ability to visualize relationships between commodities, energy flows, emissions flows, technology, and policy.
- The ability to explore adjustments in policy and technology as well as their knock-on effects across the system.
- The ability for end-users to choose between various policy/technology 'scenarios' in the visualization, generating changes in real time.
- The ability for administrative users to add new commodity nodes and energy/emissions flows, as well as new scenario sets in policy and technology.

Over the course of a year, CoLab served as the project manager and in-house design team. As the design team, CoLab conducted a needs assessment, developed a prototype, carried out user testing and iteration, and developed the final interface.

“I can already see the value that this tool will bring forth once it is completed. Its ability to measure trade-offs and impacts on Alberta's energy system from different policy scenarios will be a welcome addition to the work being undertaken by our respective teams.”

– Workshop Participant



Impact

Through a design process that involved user interviews, a formal partnership with the University of Alberta's Future Energy Systems research team to formalize a future-oriented data set, and the building, testing, and iteration of various prototypes, CoLab developed a digital tool. The tool is comprised of two components: an interactive Sankey diagram and a commodity wheel.

1 Sankey Diagram: Sankey diagrams are a popular tool for visualizing energy flows. CoLab developed a Sankey visual curated specifically for Department of Energy, enabling staff to achieve the following:

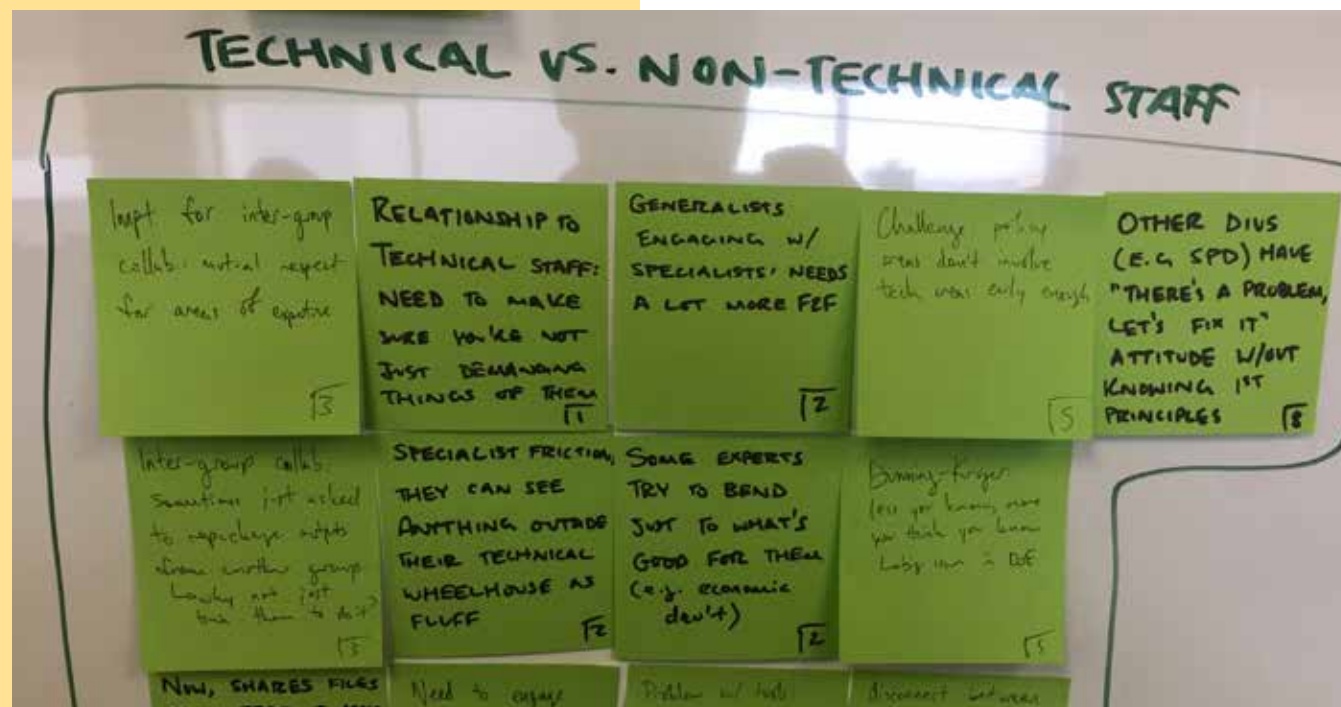
- **Commodity Relationships:** to visualize, by volume, energy source origins and destinations for various commodities.
- **Data Manipulation:** the ability to view and modify the data set in five year increments to see projected volumes and changes based on various assumptions up to 2040.
- **Scenario Visualization:** the option to toggle between four different 'shock' scenarios to appreciate if and how unexpected events may affect the energy system moving forward.

2 Commodity Wheel: the commodity wheel is a visualization tool that systemically shows how each commodity in Alberta's Energy system relates to one another. These relationships are denoted as either supportive, mixed, or antagonistic. Links are included to enable users to learn more about each commodity as they explore the wheel.

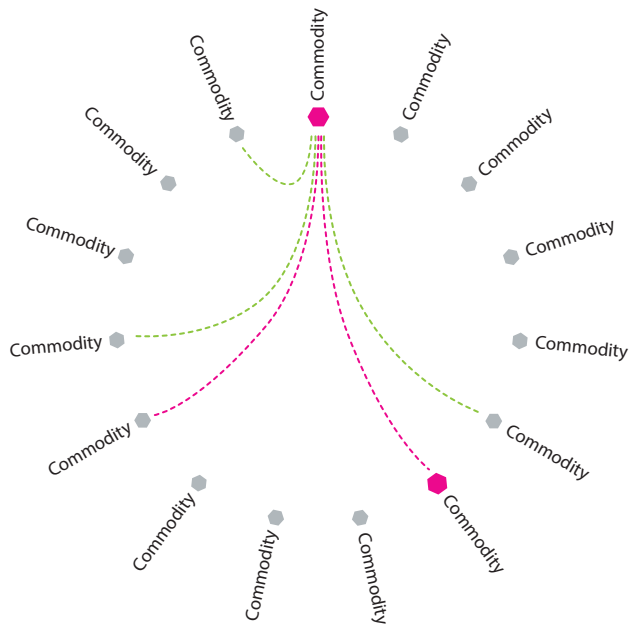
Together, this tool provides an interface for Department of Energy staff to take a more systemic perspective on Alberta's energy system by enabling them to visualize relationships, see stocks and flows, and better anticipate the influence of potential shocks and scenarios. The tool also provides policymakers and leadership with the ability to update data sets and scenarios moving forward.

“The ability for someone to manipulate this tool and see how certain changes will evolve the energy system in the future is fantastic.”

– Alberta Energy Staff Member



ABOVE: Categorizing and synthesizing feedback received during the user needs assessment.



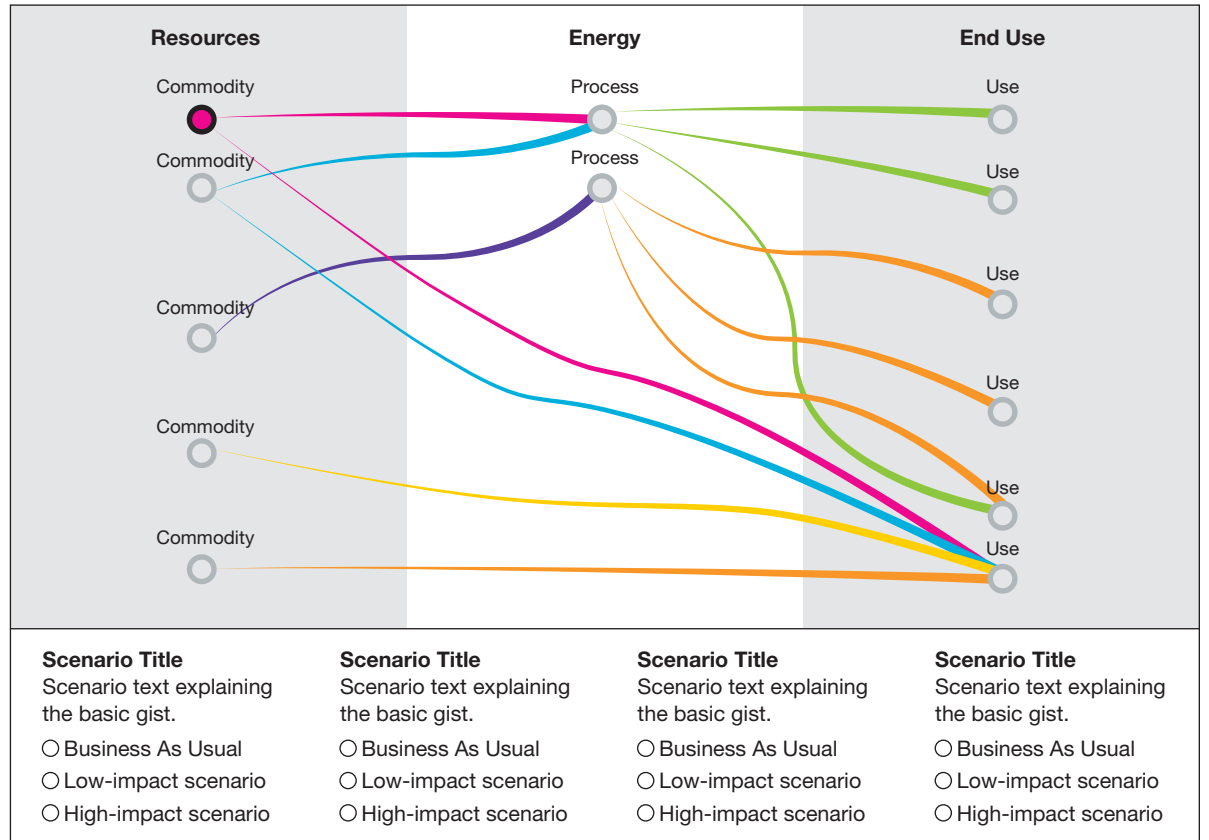
Commodity

About how this commodity relates to the resource being examined.

- Key detail or Stat
- Key detail or Stat
- Key detail or Stat

For more information, contact
 Firstname Lastname at 780-000-0000
 or Firstname.lastname@gov.ab.ca.

2025 ▼



ABOVE: An early example of a paper prototype developed by CoLab in the initial stages of the project.



Key Insights – Content/Challenge

The energy system is much more dynamic than one might initially assume:

Through this tool, users are able to see how all of the commodities relate to one another. Doing so helps to surface not just how Alberta's traditional commodities (e.g., oil, natural gas, coal, etc.) interplay within the system, but also how renewable and emerging commodities (carbon fibre, gravel, asphalt, etc.) factor into the mix.

The energy system is open and dynamic: The tool reveals how various shock variables have the potential to fundamentally disrupt the energy system. This is particularly useful to help people think beyond traditional forecasting and appreciate the uncertainty inherent in future energy dynamics.

Key Insights – Process/CoLab Perspective

Embrace emergent events: While there were some initial design ideas and targets, the team never presupposed what the end product would be. Rather, through a user-centered needs assessment process, the tool emerged over time.

Look for helpful partnerships: Going into this project we were aware of our team's strengths and where we needed support. Instead of stressing over our weaknesses, we moved forward and let strategic partnerships emerge. For example, our partnership with the University of Alberta gave us access to a manipulable and rigorous data set.

Keep it simple: We knew we had an elegant design when the functionality was in place with as little moving pieces as possible. Designs became convoluted when they tried to be too much to too many. Know your core design needs, create for these, and adhere to simplicity as a design principle.



Corporate Mapping

Context

Duration October 2018 – April 2019

Sponsors Assistant Deputy Minister, Strategic Policy, Alberta Energy
Assistant Deputy Minister, Resource Revenue and Operations, Alberta Energy

Participants Engagement took place with staff from the Department of Energy, Department of Economic Development and Trade, the Alberta Climate Change Office, and Department of Environment and Parks.

Method Focus Mixed Methods including systemic design and strategy.

Work Stream Lead Project

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

How might we better understand shifting industry investment patterns?

Overview

The purpose of the Corporate Mapping project is to assess how major oil companies – operating both in Alberta and globally – are evolving their investment and asset portfolios.

Major oil companies are increasingly vertically integrated, owning and managing operations in the upstream, midstream, and downstream sectors. These companies may also be networked or connected to the value-chain of other sectors of the Canadian or global economy.

As a business strategy, evolving asset-structures can enable large oil companies to hedge against market downturns and changes, better manage operations based on changing energy demand, and manage costs. A detailed understanding of how

such companies and their subsidiaries are organized within a global context, and how these portfolios may change over time, will help support Alberta's investment attraction and competitiveness efforts.

Objectives were to:

- **identify** corporate strategies for how major oil companies are pursuing new market share opportunities in order to ensure resiliency or future viability;
- **test** the assumption that major oil company interests are aligned with Alberta's efforts related to crude oil market access; and,
- **explore** how major oil companies are approaching increasing electrification of energy use, particularly in the transportation sector.

“The Corporate Mapping Project offers a rare opportunity to lift our thinking beyond our natural and necessary fixation on the here and now, enabling us to engage larger questions about a future that is rushing at us at a hundred miles an hour. Whether we are comfortable with them or not, practices, aspirations and policies that are intermingling are going a long way toward defining that future. This project enables us to look at these trends, and to define those aspects of the future we don't want as well as the ones we do.”

– Senior Manager, International Market Access, Alberta Energy

Impact

Each company was assessed by the following corporate dynamics:

- changing commodity or product mix provided in various regions (horizontal integration);
- changing ownership patterns of upstream/midstream/downstream operations (vertical integration); and,
- changing investor or shareholder patterns specific to holding and assets for major oil companies.

While how this data will be visualized will emerge through continued user/expert research and iterative testing, the following key features are currently targeted:

- the ability to understand the full scope of commodity interests of an identified company, including but not limited to oil and gas pathways (portfolio-view);
- geo-tagging of company networked operations/holding/subsidiaries; and,
- the ability to visualize connections (operations, corporations, etc.) between companies.

The results of this research will serve as a spring board to explore ‘hot zones’ for future investment and potential strategies for Alberta to support investment attraction and competitiveness.

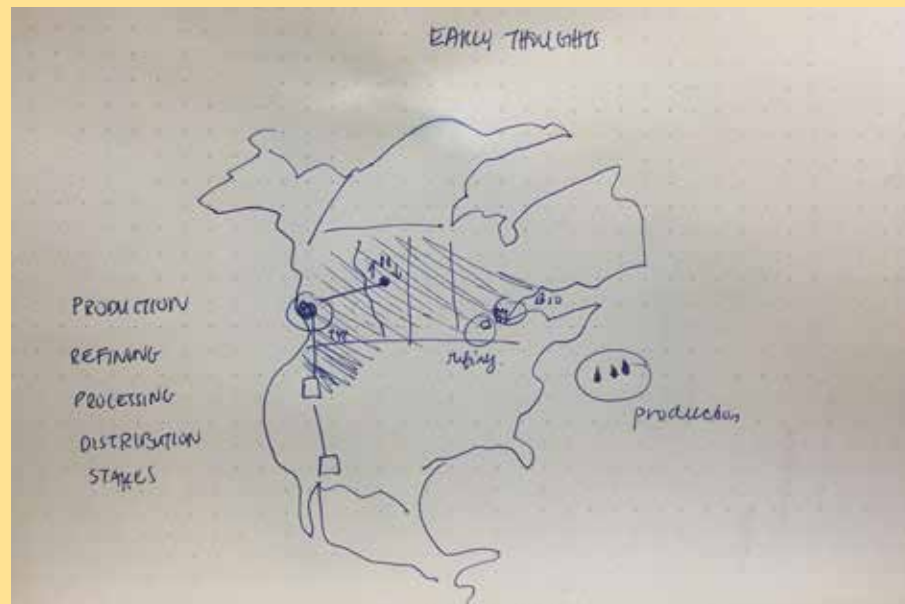


ABOVE: Images of Alberta's energy industry at work. How energy companies are diversifying and shifting their assets and investment portfolios will influence the future landscape of the province.

Key Insights – Content/Challenge

Insights are formulated from an analysis of preliminary findings and are subject to change. To date, research indicates that oil companies are:

- **reconfiguring** their portfolios away from complex and high cost assets towards more manageable and flexible upstream opportunities;
- **investing** in technology development and assets for Liquid Natural Gas (LNG) – specifically, in the Montney area of Canada and the lower 48 United States;
- **scaling** back ambitious projects and focusing on core assets rather than higher risk opportunities in less well understood and more challenging areas;
- **becoming** increasingly integrated along the value chain; and,
- **diversifying** into renewable energy.



Key Insights – Process/CoLab Perspective

Research requirements are not one-size-fits-all.

Going too deep into the research resulted in wasted time, whereas conducting shallow research provided an incomplete picture. The level of research required was different for each company depending on the scope and scale of the company's investments. This required a degree of flexibility among the research team in completing research templates, identifying sources, and managing time.

Prototype criteria can be challenging to establish at the outset.

Due to the differences in data reported by each company, it was difficult to establish criteria for a rough reporting prototype to capture information. We discovered that the prototype needed to be modified to accommodate the information provided by each company. Differences in reporting make it more difficult to compare companies and surface insights on industry trends, and require different, more tailored, solutions.

Company structure is only part of the picture – strategy and patterns matter.

Mapping assets provided insight into company structure, but did not provide a comprehensive understanding of current and future investment patterns. Conducting research into company strategy was important to understand future behavior and investment patterns. Mapping assets and exploring investment strategies provided a more robust understanding of company behaviour.

LEFT: A preliminary sketch of what the visualization could look like as the team thought through how to present and share its research.

Client Projects

CoLab's work starts where best practices end. The CoLab team takes on diverse projects from across the Government of Alberta, working across departmental boundaries to accelerate progress on complex challenges.

From energy diversification to anti-microbial resistance to school wellbeing, the following projects highlight CoLab's work with other public servants pushing boundaries to benefit Albertans.



Energy Diversification Advisory Committee: Oil and Gas Sector Engagement

Context

Duration The Energy Diversification Advisory Committee (EDAC) was stood up from October 2016 to February 2018 to engage Albertans and explore opportunities to increase the value of Alberta's energy resources, create jobs, and attract new investment. CoLab led, designed, and executed the stakeholder engagement component of the Committee's work for a period of four months.

Sponsors Assistant Deputy Minister and Special Advisor to EDAC, and Executive Director, EDAC Secretariat, Alberta Energy

Participants Engagement constituted an evolving series of workshops with approximately 50 representatives of the oil and gas sector in Alberta – including industry, academia, ENGOs, and government.

Method Focus Systemic Design, Strategic Foresight, Gamification

Work Stream Projects

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

How might we spur energy diversification in the province's oil and gas sectors to create more value for industry, investors, and Albertans?

Overview

EDAC was established in October 2016 to create a roadmap for a value added energy sector that builds resiliency to commodity price fluctuations, technology disruptions, and global market changes. Stemming from the 2016 Royalty Review ("Alberta at a Crossroads"), EDAC's effort was envisioned to further address a global economy that has begun the transition from a system based on fossil fuels towards one based more on renewables, like hydro, wind, and solar.

Alberta CoLab led the design and execution of EDAC's stakeholder engagement stream. The focus of EDAC's engagement was to establish a vision of a diversified oil and gas sector, and a vision for the role of government in encouraging value-added processing.

The partnership with EDAC was a four month effort that included strategic foresight research, committee planning sessions, and over ten multi-day sessions with stakeholders. Taken together, the EDAC engagement process was designed to surface sector

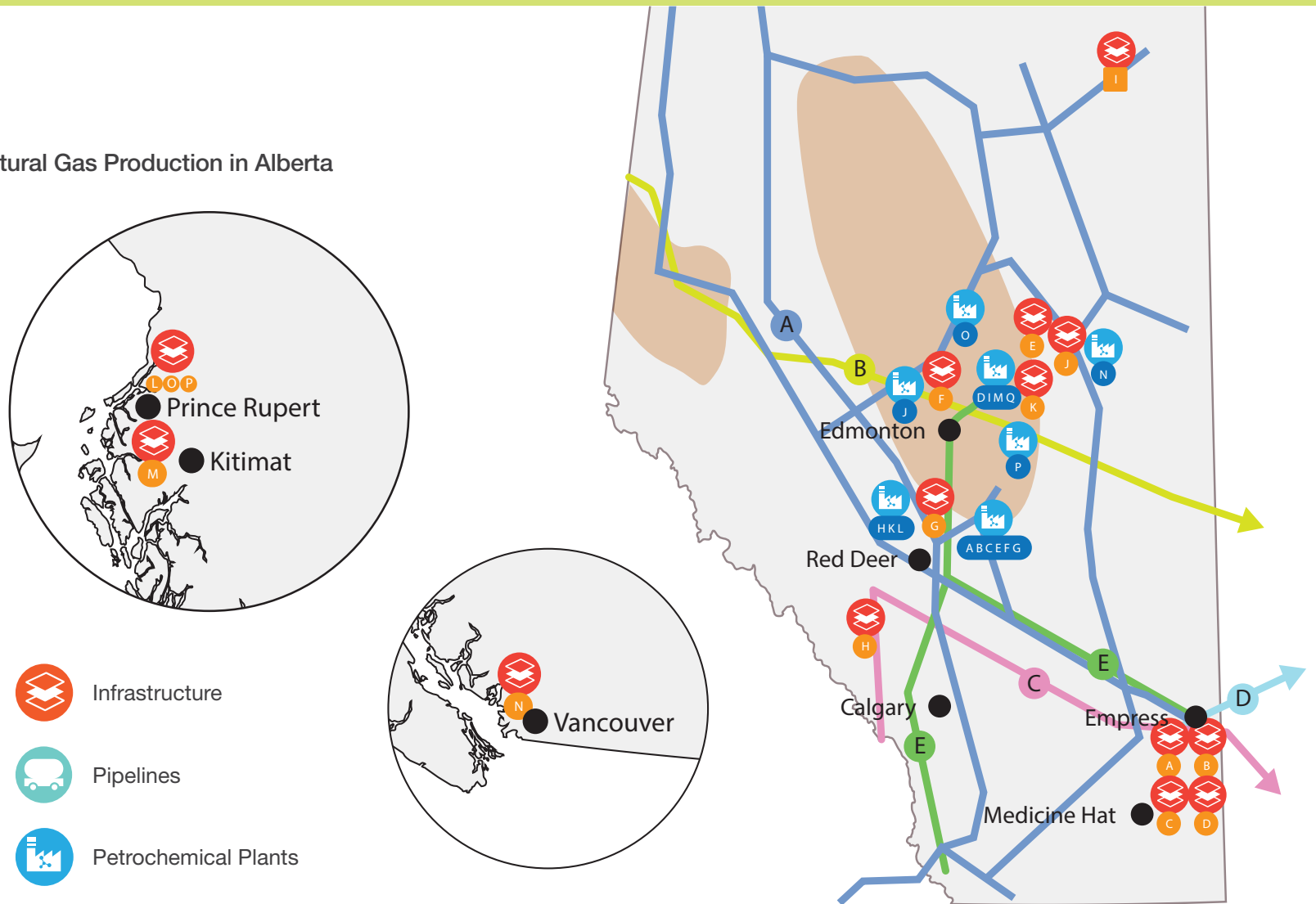
and cross-sector challenges and opportunities for diversification by convening leaders and influencers from the oil and gas sectors. The arc of this work enabled an assessment of the current state of oil and gas in Alberta, development of a desired future, and articulation of principles and actions to support the transition.

"For clients in the energy space, CoLab's familiarity with energy related concepts and material is also beneficial. They understand the issues people are working on."

– Workshop Participant

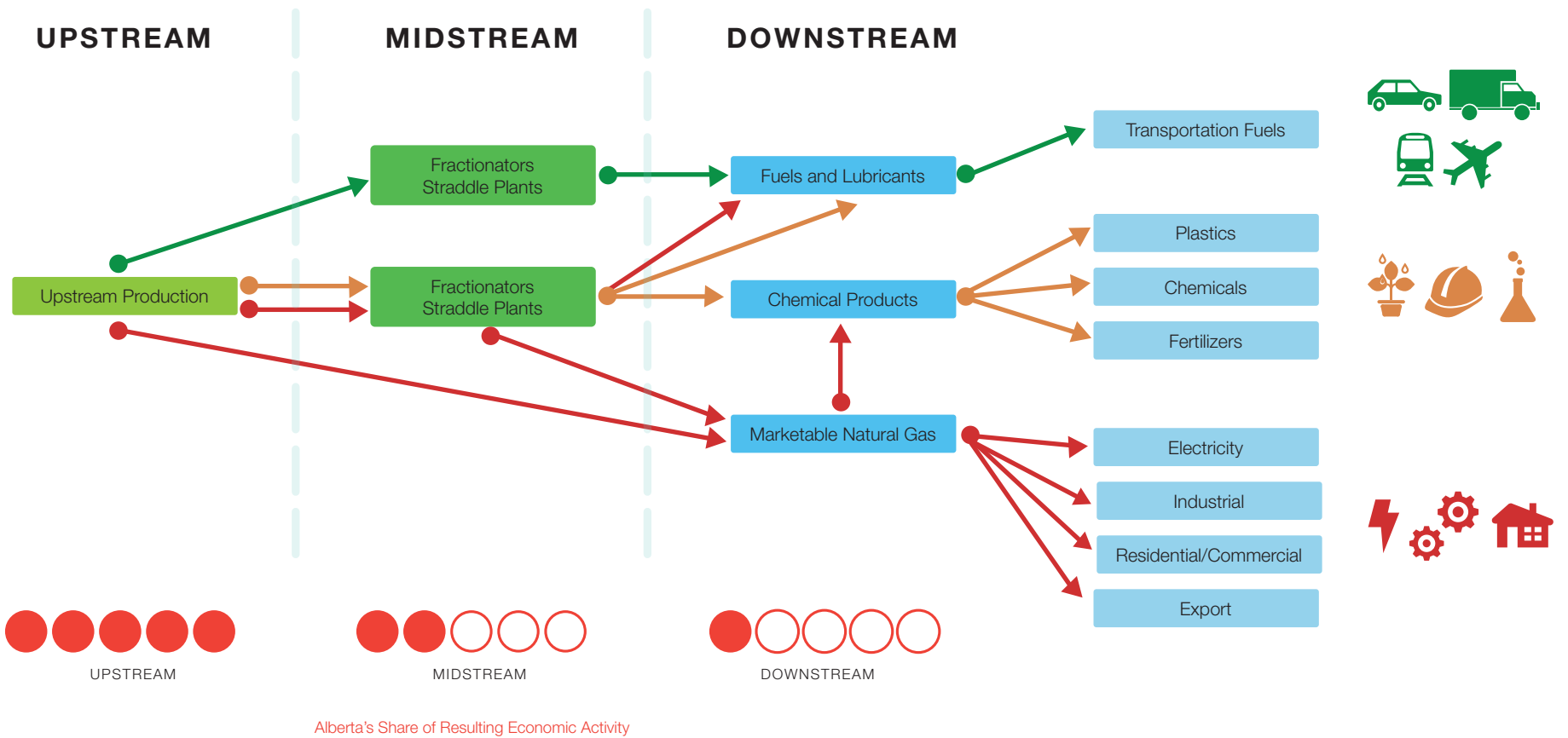
CURRENT STATE

Geography of Natural Gas Production in Alberta



ABOVE: The CoLab Team created large-scale current state maps and value chains of Alberta's oil and natural gas sectors for workshop participants to engage with and build on.

CURRENT Value Chain For Natural Gas in Alberta



ABOVE: The CoLab Team created large-scale current state maps and value chains of Alberta's oil and natural gas sectors for workshop participants to engage with and build on.

Impact

In terms of framing, foresight research on signals of change and emerging trends was instrumental in establishing EDAC as an energy transition initiative – an acknowledgment that the transition has begun and that recent price drops (e.g., 2015 oil and gas price volatility) were not just another boom and bust cycle of the oil and gas industry.

Specific to the engagement process, the materials that surfaced – design system criteria, prioritization of opportunity areas, and short/mid/long term sector actions – stuck with stakeholders and the EDAC committee and largely informed their set of final recommendations. This included cohesive direction on stretch markets (products and regions) where Alberta could become a significant player.

The engagement was identified as critical for sparking a learning journey for the Committee itself. As they heard more from participants, their perspectives began to shift, informing new opinions and challenging assumptions and held beliefs. This shift is evident in recommendations that move beyond traditional tools, such as the use of a “multiple accounts benefit-cost analysis” to support the evaluation methodology for individual projects. This technique recognizes that not all costs and benefits can be expressed in monetary form, and that a broader suite of factors should be taken into consideration.

“Seeing what CoLab does reminds me that my team and I don’t have to have all the answers. There are skill sets in the department that can help approach these complex issues in a new way. Every issue is complex, but when I am dealing with an issue where I know there are intersecting systems I know CoLab is a team that can help.”

– Workshop Participant



ABOVE: An example of the Design Criteria canvas used in workshops to help articulate a future vision.

Key Insights – Content/Challenge

- Diversification is not an end in itself, but a means to achieving multiple goals. For government's interest in diversifying Alberta's oil and gas sectors to be realized, it is critical to understand what diversification can enable to a broad spectrum of actors and identify opportunities for mutual wins.
- Alberta has a feedstock advantage that is critical for creating downstream sustainability. On the gas side, this means that securing an economic outlet for methane is critical to securing NGL feedstock for value-added production.
- Unlocking Liquid Natural Gas means shifting away from seeing it as an Alberta resource to understanding and supporting it as a western Canadian resource.
- A cohesive offering of services for investors are needed, not only to attract, but to provide stewardship to potential investors – helping them to understand and navigate processes (regulatory, permitting and consultation phases) across departments and other levels of government.
- Bitumen-beyond-combustion – a suite of emerging technologies designed to take bitumen and transform it into non-fuel products – can no longer be viewed as a distant future. These technologies and products are essential to preserving Alberta's prosperity and need to be considered today in our diversification efforts.

Key Insights – Process/CoLab Perspective

Co-create the process: As design leads, walking-side-by-side with the client to co-create the process for engagement was critical to the success of EDAC engagement. The team spent three months with the EDAC Secretariat prior to launch to design a multi-phase lab engagement and co-facilitated all the workshops. This approach gained credibility on the technical side of the challenge, and provided the client with unique understanding of both the outcomes and the design intent behind what had been produced.

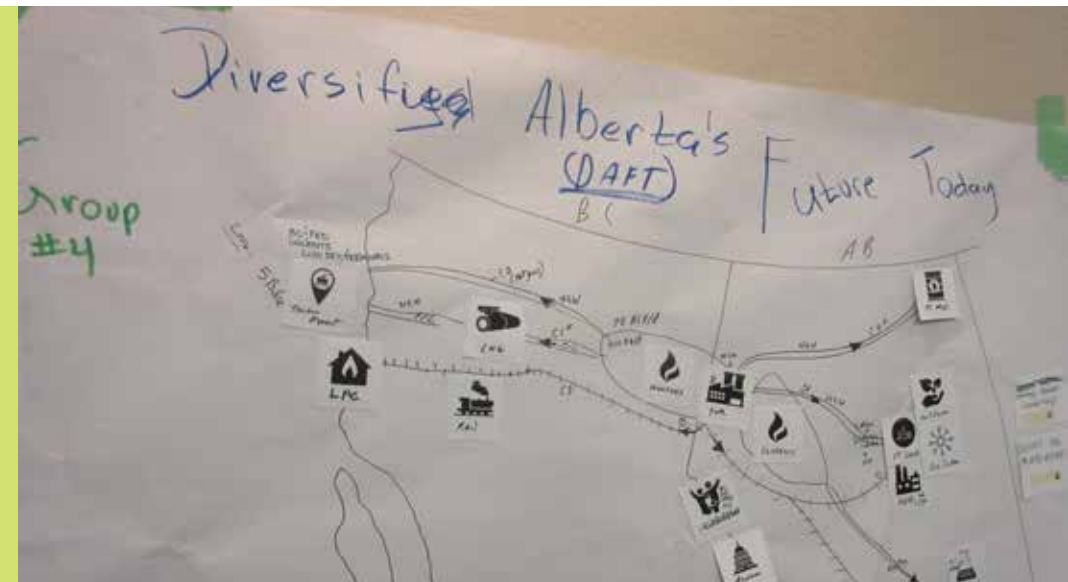
Value dialogue over accuracy: With large groups, systems thinking tools are primarily for dialogue, for sharing mental models, and creating shared understanding. Adding more data, tools, or guidance will not create a more technically accurate capture of reality; it does, however, create more opportunities to be creative and to consider bold ideas.

Cohesion versus progress: There is a trade-off between maintaining social cohesion in groups and making progress on a challenge. This is particularly challenging in multiple engagements spread over months. Things to gauge include the size of the challenge, the need for stakeholder support, and participant turnover.

BELOW: Workshop participants created maps to explore a desired future system for Western natural gas.

“CoLab’s skillset in foresight is particularly unique and is applicable across a wide range of issues.”

– Workshop Participant



Diversity and Inclusion in the Alberta Public Service

Context

Duration December 2017 – June 2018

Sponsors Assistant Deputy Ministers, Diversity and Inclusion Cross-Ministry Committee Chairpersons
Diversity and Inclusion Unit, Public Service Commission

Participants A cross-ministry group of about 50 different people engaged in one to three workshops.

Method Focus Systemic Design, Strategy

Work Stream Client Projects

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

How might we advance a coherent process of change around diversity and inclusion in the Alberta Public Service?

Overview

The Diversity and Inclusion (D&I) Policy for the Alberta Public Service (APS) was released in October 2017 and included a high level governance structure to accomplish its goals, including the formation of four different task teams. With 28,000 diverse APS employees, varying needs, over 20 ministries with different human resource and operational needs, and departments at different levels of engagement and action with D&I, figuring out where to start and how to move forward with an enterprise approach presented a challenge. In addition, the scope of some areas identified for D&I work ranged from very large (e.g., staffing directives in recruitment and advertising jobs) to more discreet (e.g., compiling an inventory of current D&I programs and policies).

D&I task team members approached Alberta CoLab to help catalyze a cohesive effort for this work, and to help develop both a strategic framework and action plan to advance D&I work in the APS. CoLab convened one full-day and two half-day workshops at various points in the Project Team's work in support of these efforts.

Workshop One

The first session focused on the work of the Practice and Program Enhancement (PPE) Task Team. The PPE Team was mandated to identify gaps in current programming and to recommend new policy or policy enhancements to programs with a focus on workplace D&I. CoLab designed a workshop to help clarify the PPE Team's vision and purpose, scope and generate shared understanding of how the PPE Team's work fits within the broader D&I aspirations for the APS, and generate a launch pad and framework to set up the PPE Team for success moving forward.

“The value of this session was very, very high. I loved the small group discussions and activities. Opened my perspective ten-fold. It was such a great way to hear from many people in a facilitated way.”

– Workshop Participant



ABOVE AND BELOW RIGHT: Workshop participants create magazine covers to articulate their desired vision and future for diversity and inclusion in the Alberta Public Service.

BELOW: Testing key assumptions around D&I – evaluating how confident they are in them and identifying how to test these assumptions moving forward.



ABOVE: Participants worked together to identify what they felt was on the right track, not sitting so well, and missing from the draft D&I Strategic Framework.

Assumption	Confidence	Rationale	How to test?
Creates a supportive culture in diversity engagement	2	Communication tends to be honest?	• make space opportunity • Take the risk
Recognizing diversity is easy but demonstrating it is hard	1	• recognizing diversity is easy but demonstrating you value it is hard	• measurable • analyzing what's made, what's not
Political environment is a challenge	2.5	• Politicking can't fully touch the issue but in a coalition political climate that can change	• would need to be tested over time



Workshops Two: Parts A and B

Two months after the first workshop, the PPE Team connected with Alberta CoLab to help bring together members of all four D&I Task Teams. There was a sense that all four task teams needed to come together and that they could benefit from a similar process that the PPE Team had experienced with CoLab in the first workshop. CoLab designed two half-day sessions with the following objectives:

Part A:

- To generate shared understanding about the current state of D&I in the APS.
- To generate shared understanding about the future possibilities for D&I in the APS.

Part B:

- To generate shared understanding about the purpose of engaging APS staff on D&I.
- To surface assumptions around D&I.
- To identifying potential ways to test assumptions through the engagement process with APS staff.

In both workshops, it was important to ensure that new and returning participants felt that they had a meaningful opportunity to provide input on the way forward.

Impact

The workshops provided D&I Task Team members with a structure to work from and a way to articulate a clear purpose for their work – as one task team member said: “to help us start from ‘why’.”

Client feedback noted that they would not have an action plan without CoLab’s engagement; at the very least, it would have been much more difficult and taken longer to create.

CoLab’s graphic design and data synthesis capabilities provided the Task Team with a convenient placemat of all the content for the strategic framework, making it easier to solicit feedback and organize its thinking.

Working with CoLab provided Task Team members with inspiration and a framework to help guide their own facilitations moving forward. The client noted that CoLab’s work helped to create a structure for future sessions and that the Team has adopted some of the activities into its staff engagement sessions.

“I got a better grasp of the complexity of D&I and the need to examine assumptions, rather than just taking them at face value.”

– Workshop Participant

RIGHT: Working through what actions the APS could take to achieve the desired vision for diversity and inclusion.

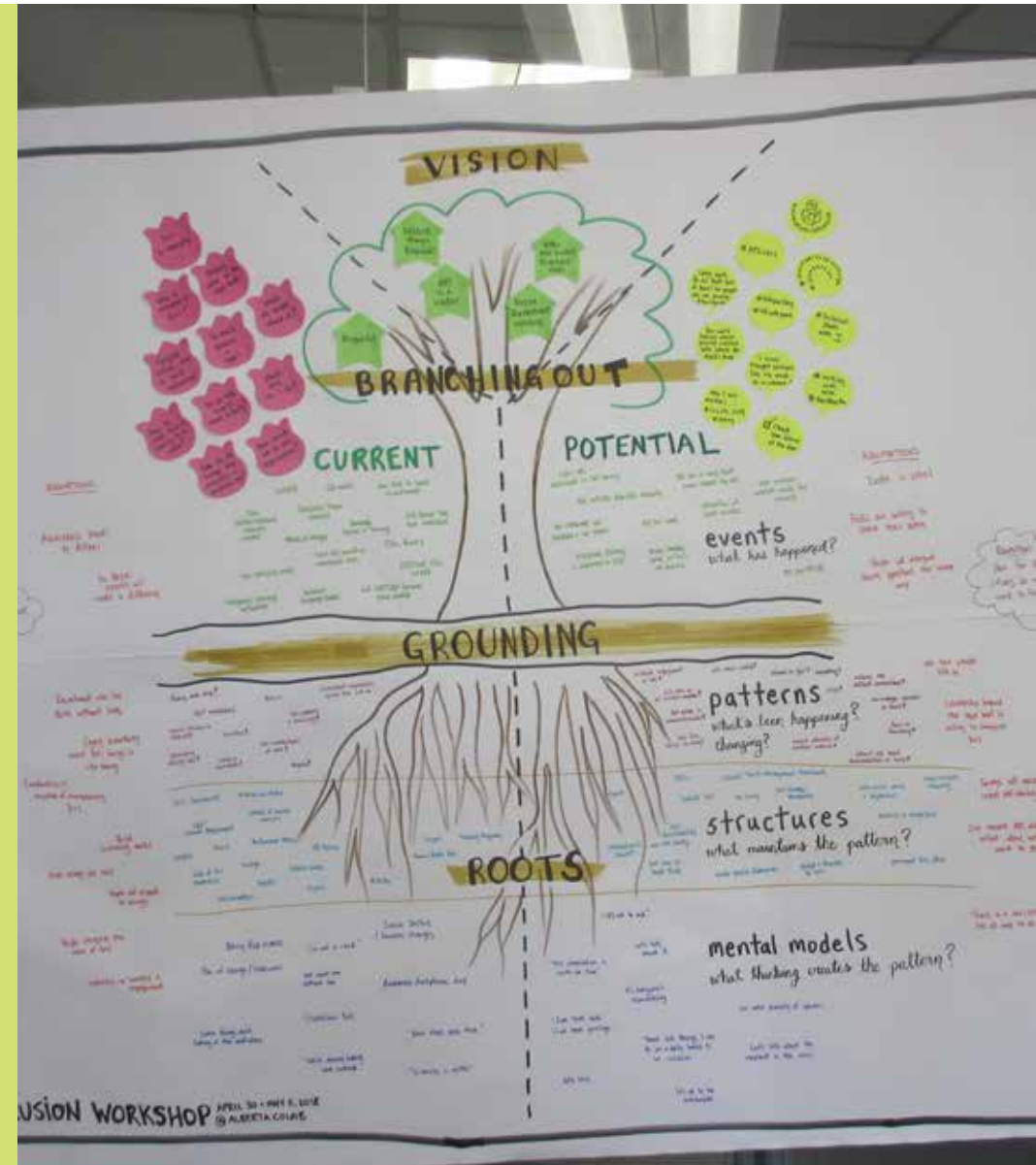


Key Insights – Content/Challenge

- By inviting feedback on the strategic framework in three categories – on the right track, not sitting well, and what’s missing? – participant feedback emphasized the need to shift from a results-driven to a people-driven orientation for D&I work. This called for a change to the purpose, outcomes, and measures of success with a greater focus on the organization’s ability to learn from experience.
- Clarifying the Task Teams’ purposes led to the question of where and how might they leverage each others’ resources. Looking at D&I systemically enabled Teams to see areas of both overlap and potential collaboration.
- How to understand and incorporate the lived experiences of public servants emerged as a key question during the workshops. To date, D&I had been largely talked about as a human resource issue or as a high-level policy issue. While participants were adept at identifying elements of the iceberg that related to policy and practice, there was less evidence about how people actually experience D&I in the APS.
- Relatedly, much of what participants identified in the current state of D&I in the APS related to organizational policy and practice; much of what participants identified for their desired future state related to change at the level of individual experience and action, linking individual action to systemic patterns and structures. This effectively and systemically placed the APS in context, in its relationships to both the individuals within it and to broader systemic forces.

“The validation of the synthesis document was extremely helpful and generated great discussion. It was fantastic to have something to respond to.”

– Workshop Participant



ABOVE: CoLab used a canvas to help participants track key insights and directions from Workshop Two. This helped the facilitator tell the story of where the participants had been between half-day sessions and provided a holistic artifact that the client could take with them and build upon following the workshops.



Key Insights – Process/CoLab Perspective

The PPE Task Team came to CoLab with a desire to create an action plan for its work in the context of all D&I work taking place in the APS. In conversations with CoLab, it became evident that before an action plan could be created, there was a need for a strategic conversation to orient the group's work and ensure that people were on the same page about its purpose and aspirations.

Prior to any workshops, CoLab helped the D&I team members visually synthesize their work to date by translating multiple documents into one placemat. This helped both the client and CoLab see consistencies, gaps, and overlaps in the group's strategy and intent.

While intended to be a fun complement to visioning work for the D&I Team, inviting small groups to create a magazine cover with social media hashtags and posts in the first workshop proved to be quite motivating and inspirational for the group. Imagining what public servants might tweet about or say in response to being asked about D&I in their workplaces gave the visioning work weight and importance by bringing high-level strategy to the level of the person. It also energized workshop participants by giving them a sense of what their work could create for them and others.

“It was worthwhile to dig into the mental models to see what deep work needs to be done to advance D&I.”

– Workshop Participant



Using the iceberg diagram as a framing device for the Task Team workshops was an effective way to encourage the group to think deeply about the structures, behaviours, and mental models around D&I. Inviting participants to think through both the current and future state using the iceberg model enabled them to get more tangible and practical when it came to creating an action plan, as they had already done the work to identify specific areas for change. Using the iceberg diagram in this way also helped participants surface their own assumptions about where the Task Teams should best spend their energy and identify ways to test these assumptions as part of their future engagements with public servants.

Participants had mixed feedback about the participation of senior leadership in the workshops. Some felt that it was useful to have senior leaders present to provide their perspective, while others felt that the conversations were more open in groups and plenary sessions where they were not present. A good practice is to think through with the client how to engage senior leadership at times in a process in ways that provide both sufficient context and expectations for staff and also enable staff to speak freely and usefully challenge these directions.

The canvas proved to be a useful way for the facilitator to lay out the roadmap for the two half-day sessions so that participants could see where they were starting from and where they were heading. It also provided a useful, visual way for the facilitator to explain the concept of the iceberg diagram and maintain the thread for participants between the two half-day sessions. The canvas was a helpful take-away for the client and eliminated extra work for the CoLab team to synthesize workshop discussions into a narrative, instead being able to package the insights live as they surfaced during the workshops.

The Futures of Antimicrobial Resistance in Alberta

Context

Duration 3 sessions over 2 months (November – December 2017)

Sponsor Alberta's Chief Provincial Veterinarian

Participants 25 – 30 participants from Alberta Agriculture, different livestock industry associations, professional associations related to the livestock industry, and the University of Alberta

Method Focus Strategic foresight, systems thinking, strategy development

Work Stream Client Projects

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

What forces and developments might impact animal antimicrobial resistance by 2030?

How might animal antimicrobial resistance manifest itself in Alberta by 2030?

How might we deal with imminent federal regulatory changes on the prescription and dispensing of antimicrobials? What are the advantages and disadvantages to each option?



Overview

In 2017, the federal government announced changes to the use of medically important antimicrobials in the livestock industry in an effort to preserve their effectiveness and minimize the development of antimicrobial resistance. The changes require that, as of December 2018, all medically important antibiotics for veterinary use be sold by prescription only.

In November and December 2017, the Government of Alberta's Chief Provincial Veterinarian convened a group of stakeholders (including livestock industry associations as well as professional associations) to help define an Alberta position.

Given the contentious nature of the topic, the Chief Veterinarian engaged CoLab to lead:

- a foresight discussion that could help participants build a shared understanding of the problems facing the livestock sector; and
- a critical assessment of the different options available to the Government of Alberta regarding the prescription and dispensing of medically important antibiotics.

To assist in this effort, CoLab delivered three workshops over two months:

- Workshop 1 explored the forces and developments that might impact antimicrobial resistance in the livestock industry.
- Workshop 2 investigated different future scenarios and their implications on how antimicrobial resistance might play out by 2030.
- Workshop 3 considered and assessed different policy options in response to the federal government's announced changes.

Impact

The project helped different government stakeholders appreciate other perspectives and gain a more comprehensive understanding of the challenges and opportunities facing the livestock industry in Alberta.

The Office of the Chief Provincial Veterinarian developed a policy position in relation to the announced federal changes based on the broad input gathered during the workshops.

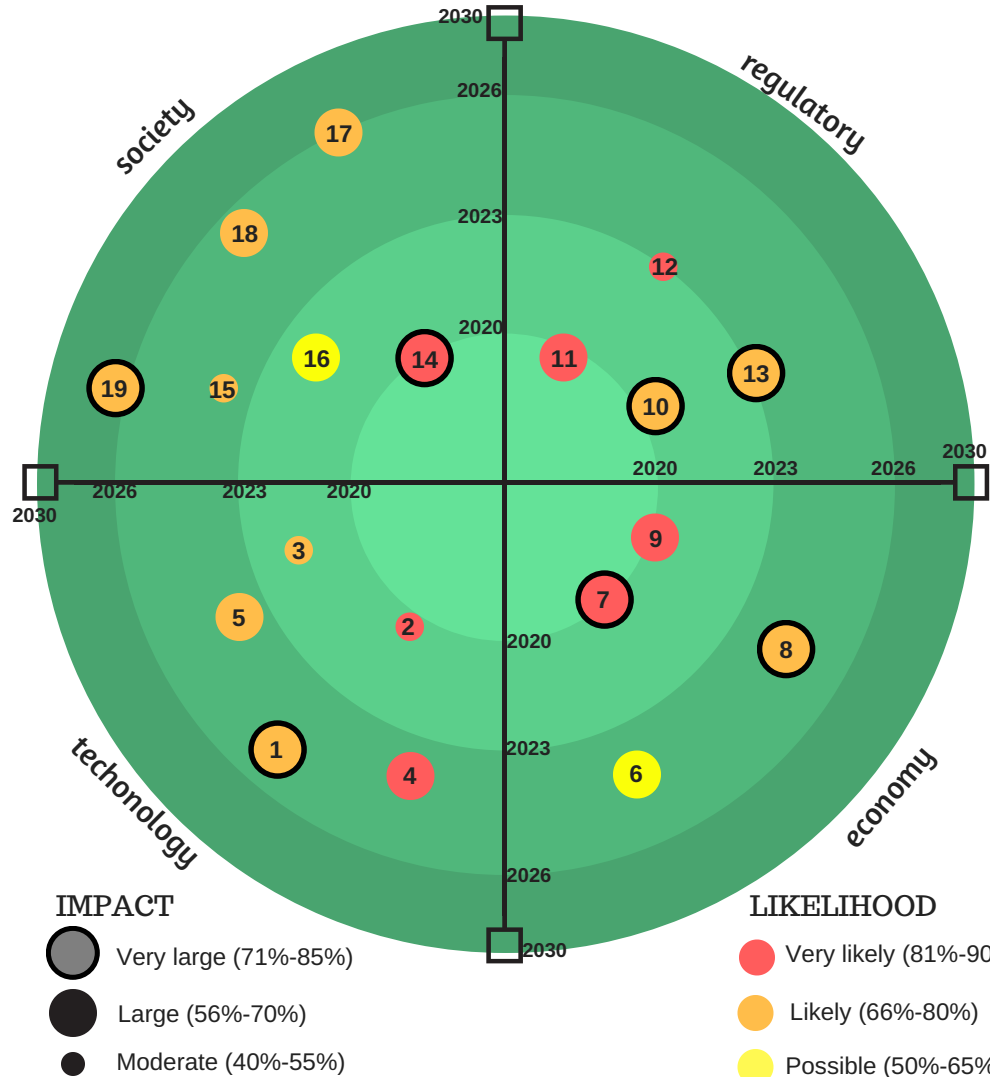
The workshops also highlighted emerging and potential issues that transcended the more urgent need to deal with the announced federal regulatory changes, including:

- How might the Government of Alberta help the livestock industry adapt to an era of increased restrictions on antibiotic use?
- How might the Government of Alberta mitigate against increased morbidity in a post-antibiotic era?
- How might Alberta's livestock industry look and thrive in world where antibiotics have lost their efficacy?

While the workshops did not address these questions, it seeded them in the hope of beginning a conversation around adapting to a rapidly changing world.



ANIMAL ANTIMICROBIAL RESISTANCE (AMR) IN ALBERTA: FUTURE DEVELOPMENTS



Technology

1. Increasing use of predictive diagnostics
2. Increasing tracking of antimicrobial (AM) use
3. Better management of treatment
4. Better vaccination technology
5. Lack of pharmaceutical investments in AM

Economy

6. Loss of competitiveness by Alberta's animal production in the global market
7. Shift of markets away from animal AM use
8. Shift towards a prevention-oriented business model for producers
9. Increasing costs for producers and consumers due to regulatory burden

Regulatory

10. Decreasing access to AM for producers
11. Increasing oversight of/on prescriptions
12. Increasing surveillance on AM manufacture, use, and impact on animals
13. Increasing restrictions on animal AM use due to human health concerns

Society

14. Increasing public pressure on AM use
15. Increasing awareness of the environmental impacts of AM production and use
16. Increasing polarization around animal vs. human
17. Increasing societal burden of AMR
18. Increasing public misinformation on AM

Other

19. Pandemic superbug

ABOVE: CoLab created a trend radar to inform conversations about how the different influences related to antimicrobial resistance may work together over time.

Key Insights – Content/Challenge

Participants explored four plausible scenarios on the future of antimicrobial resistance in Alberta by 2030:

- **Made-in-Canada (base case):** a representation of the “official” future, dominated by well-known changes in federal regulations, making all medically important antimicrobials prescription-only and removing growth promotion claims from labels;
- **Made-in-Alberta:** a future where the Alberta government allows Authorized Medicines Sales Outlets to dispense products for which a prescription has been issued for use in livestock, in a manner consistent with the federal regulatory changes;
- **Post-Antibiotic Era:** a future where current antimicrobials lose their efficacy altogether and development of new antibiotic agents lags behind; and,
- **Tighter Ship:** a future where the federal government further tightens its grip on antimicrobials, banning antibiotics as growth promoters altogether and restricting certain categories of antimicrobials for human use only.

The scenarios built on four key critical uncertainties – highly impactful developments with highly uncertain future trajectories; namely:

- **Access to antimicrobials:** the extent to which livestock producers can freely access antibiotics;
- **Antimicrobial drug development:** the pace and extent to which new drugs become available in the market;
- **Societal pressure and information:** the extent to which consumers press for products raised without antibiotics; and,

- **Animal (and human) epidemiology:** the state of human and animal health, particularly in relation to the ability to fight antibiotic-resistant infections or diseases.

Of all the scenarios, ‘Made-in-Canada’ and ‘Made-in-Alberta’ highlighted a key issue that was an immediate concern for government as well as livestock stakeholders: how to ensure timely access to antimicrobials for producers while complying with federal regulatory changes. The scenarios ‘Tighter Ship’ and ‘Post-Antibiotic Era,’ on the other hand, brought to the fore slower-burning policy issues that might unfold over a relatively long time horizon – i.e., how to survive and thrive in a world where antibiotics are severely restricted or ineffective.

Focusing on the ‘Made-in-Canada’ scenario, participants explored and assessed five different options to ensure timely access to antimicrobials for producers while complying with the letter (and the spirit) of federal changes. These options explored whether the provincial government should:

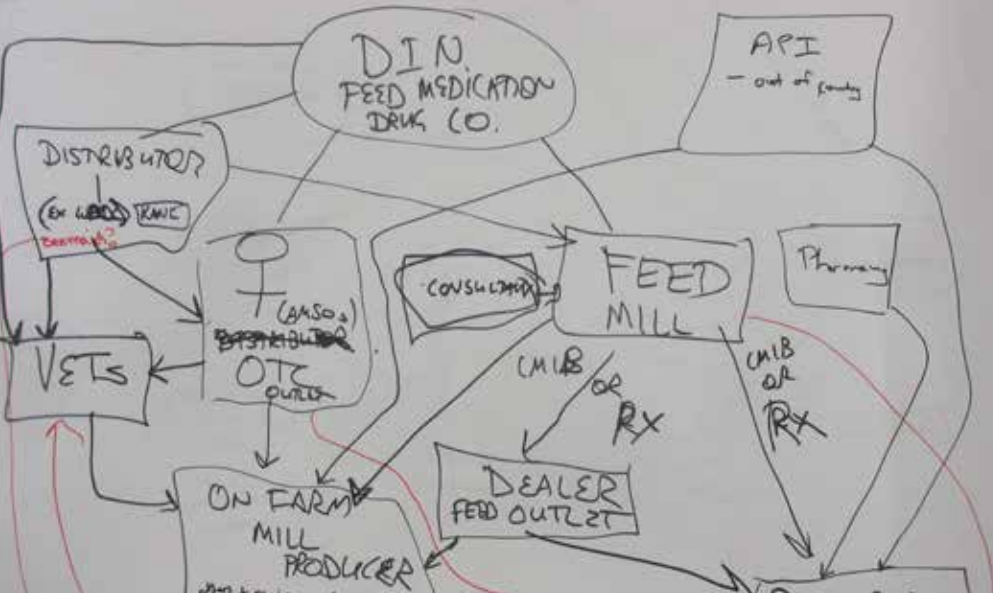
- take no further action following the implementation of the federal regulations;
- allow Authorized Medicines Sales Outlets to dispense;
- allow pharmacists to dispense animal products;
- create the profession of veterinary pharmacists; and,
- enable the hiring of veterinarians by removing the 51% business ownership requirement for veterinarians.

“Your knowledge of the foresight process was invaluable and your ability to quickly learn the technical aspects of the topic we are dealing with was truly impressive.”

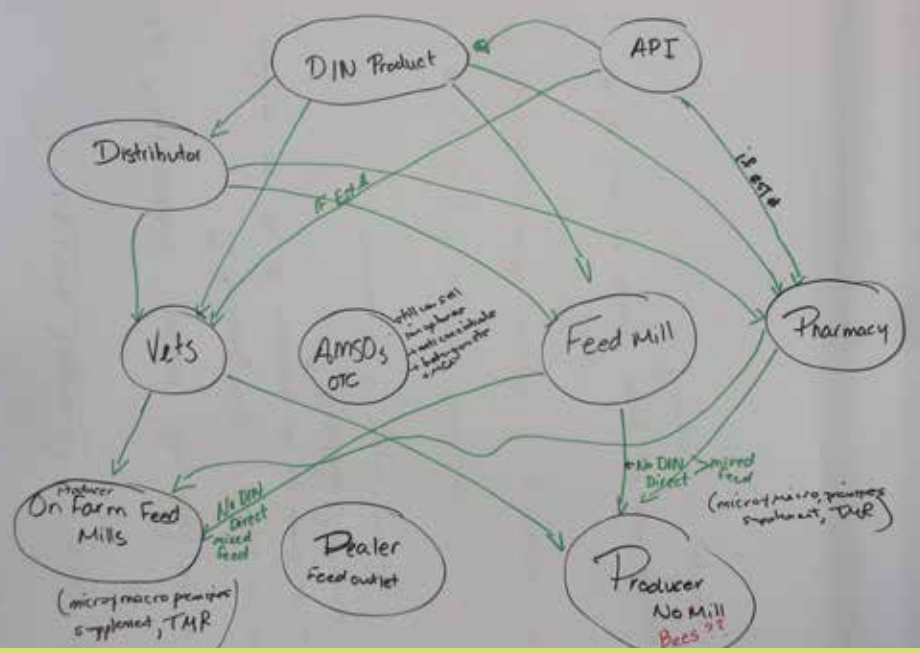
– Dr. Keith Lehman
Chief Provincial Veterinarian



FEED - PRESENT STATE



FEED - FED CHANGES



Key Insights – Process/CoLab Perspective

Foresight-for-Engagement

Typically, CoLab uses foresight to inform strategy and/or policy development. While this was also the case in this project, the main intent was to make space for, and enable, constructive conversations in a relatively polarized setting.

A foresight project can help foster shared understanding and build relations among stakeholders with opposite viewpoints by having them focus on what could happen, instead of what should happen or will happen. Conversations around exploratory futures even out the field among participants because there are no facts about the future and, therefore, there are no experts about it.

Building the Ship at Sea

Scenario development tends to be a laborious process that lends itself to different iterations and behind-the-scenes changes. This project was the first time that CoLab helped develop scenarios on the fly.

Completing scenarios in a workshop required an attitude centred on 'progress, not perfection', geared towards fostering good conversation among participants instead of having every detail figured out.

Ensuring Continuity

Delivering three workshops over a relatively long period of time carries the risk of interrupting the momentum created within each workshop itself.

To establish a line of sight, CoLab distributed a summary of the main insights after each workshop and established checkpoints during each session to signal progress to participants. Both the second and third sessions started with overview of what had been done in the previous workshop, as well as a warm-up activity that picked up where participants had left off.

LEFT: Workshop participants created system maps to explore the current state of access to antimicrobials.

Guess and Check: Exploring School Wellbeing

Context

Duration August – December 2017

Sponsors National Lead, WellAhead (a Project of the JW McConnell Family Foundation)
Vice President of Systems Innovation (MaRS) and Program Director, MaRS Solutions Lab

Participants Field research involved visiting 12 Alberta schools, conducting approximately 40 interviews with various school and administrative personnel.

Method Focus Systemic Design, Ethnography, Gamification

Work Stream Client Projects

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

How might we deepen understanding around the dynamics and influences around social and emotional wellbeing in Alberta's K-12 school system?

Overview

In late 2017, WellAhead, MaRS Solutions Lab, and Alberta CoLab collaborated to explore how WellAhead might support Alberta's K-12 schools in enhancing social and emotional wellbeing. Alberta CoLab conducted school visits that would capture the school experience and its implications for wellbeing in Alberta schools. The purpose of the research was to help prepare for and deliver a two-day convening on social and emotional wellbeing in Alberta's schools in December 2017 that would bring together educators, administrators, government officials, community members, and students. The objectives of the gathering were to:

- increase understanding of how Alberta school communities can be enabled to make social and emotional wellbeing a key priority;

- explore the gap between the needs and desires of schools and the various programs, policies, structures and initiatives that exist to serve and support them – and how to bridge that gap; and,
- collectively understand the dynamics in the current system and the shifts, changes, or additions needed to increase positive impact.

To prime the convening conversation, CoLab's work had two parts: (1) field research to better understand the current state of social and emotional wellbeing in Alberta schools and (2) translation of that field research into insights that the team could share with convening participants in a meaningful and useful way.

Field Research

CoLab conducted field research by visiting 12 Alberta schools across the province, conducting interviews and making observations. While not a comprehensive study, this work surfaced important clues for the present and near future of social and emotional wellbeing in Alberta's schools.

The team engaged with 12 schools, with the following breakdown:

- Four elementary schools, three middle schools, one high school, three K-9 schools, and one K-12 school.
- Our sample included a charter school, a private school, and two Catholic schools, as well as urban, suburban, rural, and on reserve schools.
- Northern schools emerged as a gap, for logistical reasons.

Methodologically, the team employed a mix of semi-structured interviews and school tour-style observation, guided by hosts within each school. Because of privacy concerns, the team did not focus on student-level data.

Translating Insights: Guess and Check

Based on and designed around their field research, the CoLab team decided to create a role-playing game for convening participants. The purpose of this activity was to share the insights from the field research with participants in a way that generated empathy for the different actors in the school system and also appreciation for the complexity and interrelationships between the different actors, and between the school and other systems. Because a number of the convening participants do not work directly in schools, the team also felt that role playing game would help bring the school to them, so to speak and enable people to take on roles and challenges outside their norm. The resulting 'Guess and Check: A School Wellbeing Roleplaying Game' incorporates scenarios and personas from CoLab's research with the aim of increasing participants' empathy and understanding of the school experience, and generating insights for how to advance wellbeing in school environments.



RIGHT: CoLab's field research included an art-based activity for elementary teachers to run with their students if they wished, asking students to draw a picture of what makes them feel happy at school.

“Alberta CoLab were instrumental to the success of the project. First, they performed high quality ethnographic field research, visiting diverse schools across Alberta and generating fresh insights. Second, they exceeded expectations with an innovative approach to presenting the research through gamification. Third, they helped to facilitate the two day event, bringing a highly professional and engaging energy to the workshops. The mental health game designed by CoLab was such a hit that schools requested additional copies so they could play it with staff to spark conversations about the importance of wellbeing to staff and students.”

– Vice-President, Solutions Lab, MaRS Discovery District

Impact

Based on field research insights, CoLab’s objectives for the convening were to:

- build an understanding of the lay of the land;
- surface needs, barriers, and opportunities within the system;
- build empathy for actors in the system;
- highlight best practices; and,
- build connections between different groups at the convening.

‘Guess and Check’ enabled convening participants to learn about and from the lived experience of a range of people working in and experiencing Alberta’s K-12 school system. Through scenarios and quotations from real people, the game brought the school system into the workshop in a tangible way. Through the game, the CoLab team was able synthesize and share research insights, connecting game components directly to observations and interview statements from field research.

Many convening participants felt that ‘Guess and Check’ was the highlight of their first day at the workshop. As the first activity they did together at the convening, it was a fun and engaging way for them to meet and interact with new people, and was a meaningful catalyst for new connections and conversations that participants could build on over their two days together.

As an artifact, while ‘Guess and Check’ was designed to support a specific convening, its impact goes beyond the workshop. Grounded in evidence, it is a lasting tool for people in the education system to generate conversations, learn from each other’s experiences, and expand their empathetic horizons. Since the convening, the game has been run for staff in Alberta’s Department of Education, and remains available for people to use, modify, and build on in their work around school wellbeing.

Guess and Check

How to play

Number of Players: 6 –10 (per group)

Materials: 1 School Table Tent, 3 Scenario Cards, 10 Role Cards, 10 Role Name Tags, 5 –10 Approach Cards per Role, 1 Needs Canvas, 1 six-sided dice per person, Blank Cards.

Instructions:

- 1 Invite each person to choose a role – one that they do not play in real life. Invite each person to familiarize themselves with their role card.
- 2 Invite one person to choose a scenario for the group to explore, and read it aloud to the group.
- 3 Invite each person to roll their die: if they role an odd number, they should make decisions based on their red zone (less helpful response) card; if they role an even number, they should make decisions based on the green zone (more helpful response) options on their card. (This mechanic was designed to encourage participants not to ‘play to win’, but to ‘play to entangle’ by picking the most interesting options.)
- 4 Beginning with the Principal role, ask each person to share the response they chose and why.
- 5 As a group, discuss the following questions:
 - What tensions exist between the different approaches? What trade-offs might we have to strike?
 - What could we change to come up with a better solution?
- 6 Repeat for the remaining two scenarios.
- 7 When finished, invite the group to complete the canvas – this can be done in groups or in plenary – to identify needs, barriers, and opportunities for improvement that surfaced during game play.



ABOVE: ‘Guess and Check’ game materials created by CoLab.

BELOW: Convening participant reflections after playing ‘Guess and Check’.



Key Insights: Ethnographic Research

Networks are Crucial for Approaching Wellbeing

Three kinds of networks seemed important and often overlapped: networks for professional development and practice sharing, networks for emotional support and resilience, and networks-of-networks that linked different institutions.

One of the primary functions of networks that the CoLab team observed in schools was the sharing of good ideas around wellbeing.

Schools are increasingly being asked to function as hubs for service delivery for children and families. Here, networks play a crucial role in enabling effective delivery of services.

The team heard from teachers whose professional networks enable them to connect with other teachers at a similar grade level and confirm that their struggles were not unique, while also learning new tactics for handling the challenges of their work. In this sense, the network went beyond just the exchange of information into the territory of improving the social and emotional wellbeing of teachers themselves.

The ability to form strong and useful networks is not universal across the system. Geography, caseload, the nature of the person's role in the school, or the need for permission were all cited barriers.

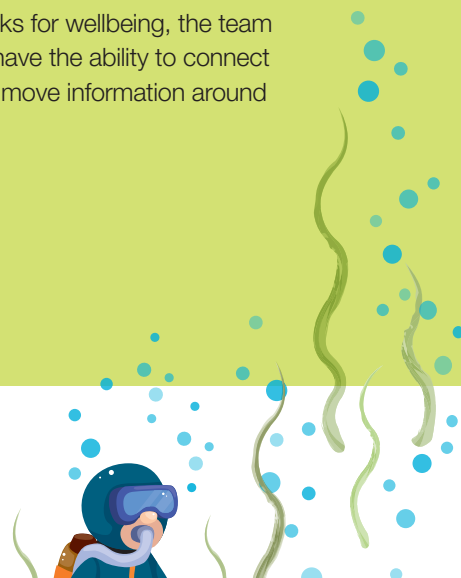
In both the formation and operationalization of networks for wellbeing, the team found that bridging roles are essential: positions that have the ability to connect multiple networks, or to more effectively and regularly move information around a network.

People are Playing with Physical Space

Space played a surprisingly important role in enabling ambient social and emotional wellbeing, beyond mere crisis response.

From elaborate classroom decoration to alternative furniture, teachers are trying various strategies to make their classrooms feel welcoming and to suit their teaching style. The tangible effects of this kind of customization on student wellbeing is unclear.

Many of the visited schools are repurposing legacy spaces. One hypothesis the CoLab team has is that there may be an inverse relationship between the strength of a school's legacy and educators' perceived ability to repurpose space.



Experimentation Drives Results

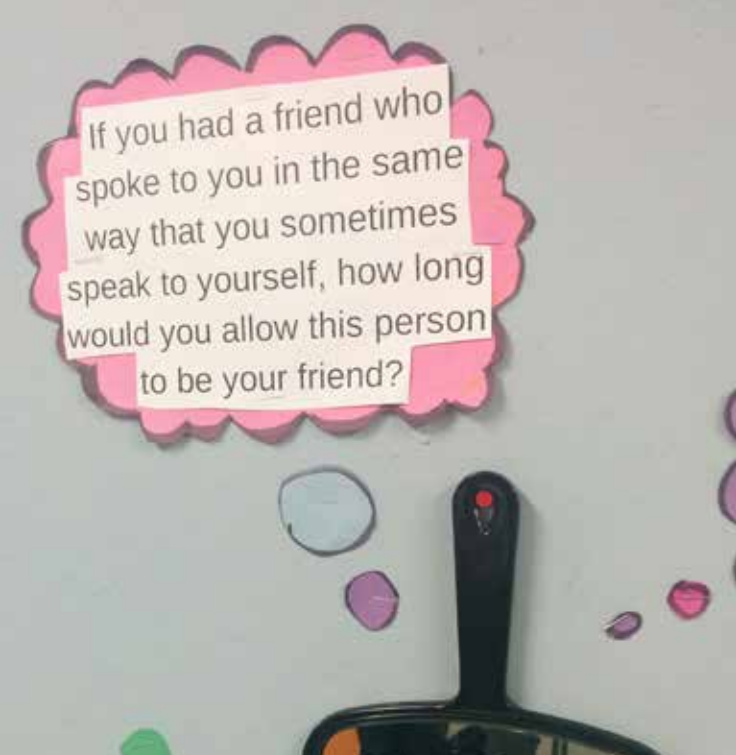
Educators are using a wide variety of materials and techniques to engage students using all of their senses, with the goal of regulating emotions and behaviour. For example, covering fluorescent lights with blue fabric to change the quality of the light or using calming scent diffusers.

Teachers are being stretched in unexpected directions, and while many have developed capacity around wellbeing, few are professionally trained in it. What the team saw most often is educators taking a “guess and check” approach: they would try something, see how it worked, and adjust as necessary. By and large, this seemed to be an effective strategy; however, it is possible that schools may not give interventions the time they need to truly sink in. Alternatively, there’s the possibility that this ad hoc approach may enable excellent interventions that are never given the chance to scale, because they’re the brain child of a single educator.

Increasing Complexity Poses a Challenge

In many of the schools, educators struck a similar chord: the volume of high-complexity cases coming through their schools had increased. There were different sources to which this shift was attributed: economic downturn in the province, changing immigration patterns, the erosion of social cohesion at a society-level scale, parents who were increasingly poorly equipped, and even violence in media. The result of this shift is that some educators are being asked to play expanded roles, taking on some functions of parents, social workers, and other community roles.

One educator the team met with was emphatic in their opinion that the shift was illusory. For him, there wasn’t an increase in challenging cases; instead, he described an increasing awareness on the part of educators that was alerting them to currents that were already present.

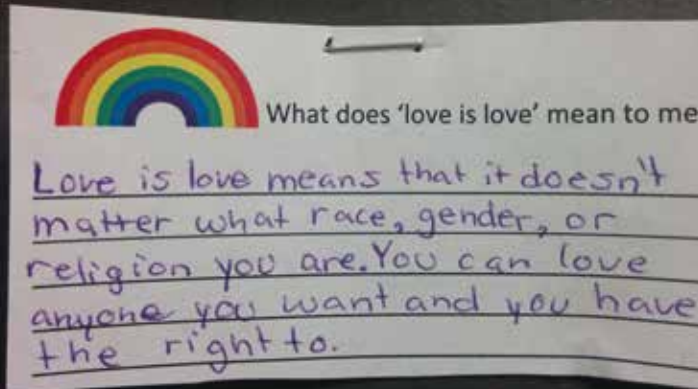


ABOVE AND BELOW: Examples of school signage and displays around wellbeing.





ABOVE AND BELOW: Wellbeing also means feeling welcome – many schools had visible signs of welcome for students from different backgrounds, including indigenous, LGBTQ, and new immigrant students.



Change and Sustainability

In several schools, the majority of transformational efforts around social and emotional wellbeing were driven by principals or vice principals with a clear vision. While other staff can make small changes, big shifts in process or space require a different structural position. Because many administrators who prove successful get promoted out of their schools, succession planning and the durability of extraordinary visions represent challenges to shifting approaches to wellbeing.

Staff Wellbeing is a Big Piece of the Puzzle

There is an increasing focus on the wellbeing of educators, not just students. In many cases, responses to staff wellbeing needs are ad hoc and informal: in other cases, schools are building structures around staff wellbeing, instituting interventions like staff body breaks or massage days.

Future Directions

While not a rigorous qualitative study of school wellbeing in Alberta, the school visits suggest some productive avenues for future exploration, prototyping, and testing:

- What does network formation look like in Alberta's schools, and how can emotional resilience, knowledge sharing, and service delivery be enhanced and encouraged?
- What spatial interventions for wellbeing work, and how can we encourage the proliferation of the most successful ones?
- If Alberta's education system is bracing for a range of disruptions in terms of social and emotional wellbeing, how can we support educators in weathering, embracing, and sustaining change?



Key Insights – Process/CoLab Perspective

Gamification is a useful and meaningful way to help people engage with insights from ethnographic research. While it is important to be clear that the scenarios and roles involved in game play are not representative, games have strong potential to generate empathy by encouraging participants to think outside their usual experiences. In contexts where people do not know each other, games can be a gentle way to encourage conversation and build connections by helping to break the ice and allow people to put themselves, rather than their job titles, first.

Field research does not have to be extensive to generate useful insights. While this depends on the purpose and intent of the research, a lot can be learned from engaging with people outside one's usual purview even in small ways. There is an immense opportunity for policy and decision makers to make more robust and meaningful choices by learning from people with lived experience in the systems they aim to influence.

Gaining access and clearance to engage in field research takes time. It is important to be realistic with the client about these timelines and build in some flexibility in case approvals take longer than planned. For this project, the convening was a hard deadline; while the CoLab team was able to deliver on time, there was a big push at the end to synthesize a significant amount of field research in time.



LEFT: Examples of how schools are modifying their spaces to enhance student wellbeing, with interactive furniture, fidget toys, and lighting.

Infrastructure Climate Strategy

Context

Duration Two CoLab-led workshops over three months

Sponsor Infrastructure Climate Team, Technical Services Branch, Alberta Infrastructure

Participants 25 – 30 participants from across Alberta Infrastructure

Method Focus Foresight, Strategy, Design

Work Stream Client Projects

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

What should be Alberta Infrastructure's approach to climate change and sustainability?

How might Alberta Infrastructure implement its Climate Strategy?

Overview

The release of the Alberta Climate Leadership Plan in 2015 started a conversation within the province about the changing climate. For Alberta Infrastructure ('Infrastructure'), this conversation led to increased efforts to reduce greenhouse gas emissions (GHGs) and become more climate resilient.

In partnership with CoLab, the Infrastructure Climate Team designed and facilitated an initial workshop with partners across Infrastructure that would allow the Team to take stock of work currently underway and to identify areas ripe for action.

The workshop resulted in a Climate Strategy built with the input of a cross-section of Alberta Infrastructure. This was approved by Infrastructure's Executive Team, who directed the Infrastructure Climate Team to develop an implementation plan for the Strategy.

The Infrastructure Climate Team and CoLab held a second workshop to inform implementation planning. The session helped to ensure that the Implementation Plan is realistic, achievable, and that Infrastructure staff are invested in its success.



Impact

The engagement process that CoLab helped to steward culminated in:

- a strategy in which Infrastructure staff see their work reflected and their role in its execution; and,
- an implementation plan in which department staff are invested.

This work has benefitted Infrastructure by taking stock of climate leadership work underway, uniting staff around the challenges of climate change, and empowering them to envision an innovative, greener future.

The client shared that one of the most significant impacts that CoLab had was to both lend credibility to the work and to design an engagement process that was successful in convening different people.

The client also stated that CoLab's involvement was a factor in helping secure support from Executive Team sponsors, due to CoLab's reputation for the quality of work they help to deliver.

The project was nominated for the Premier's Public Service Award for Outstanding Public Policy Innovation in January 2018.

Key Insights – Content/Challenge

Government buildings represent an estimated one per cent of total Alberta emissions. Analysis shows that the Alberta Capital Plan funds approximately 21 per cent of the Alberta construction industry. Infrastructure's broad sphere of influence and its opportunities for further leadership demanded a considered, intentional approach to emissions reduction and climate resilience.

Many climate-related initiatives were underway across Infrastructure, but there was a lack of coordination that limited their potential. Communication of these initiatives was limited and collaboration across Infrastructure on climate issues was a challenge.

There were opportunities in the amount of good work already underway in different divisions across Infrastructure and the increased awareness and momentum brought on by the greater societal and provincial conversation about climate change.

Through its Climate Strategy, Infrastructure has committed to build net-zero ready facilities by 2030, phase out carbon-intensive leases, set robust climate targets, and communicate building energy, water, and overall performance.

By setting departmental climate leadership priorities, Infrastructure has recognized its role as an innovator and a champion for minimizing climate impact and maximizing climate resilience.

“CoLab is a team of super cool system thinkers and program designers who can help people find innovative solutions and/or look at things differently.”

– Infrastructure Climate Team Member

Key Insights – Process/CoLab Perspective

The Power of Collaboration

Working closely with Infrastructure colleagues in this project enriched the quality of the strategy, identified keen allies and champions throughout the department, and inspired confidence from senior leadership.

Infrastructure's core business areas can be quite disparate, ranging from building a state-of-the-art hospital in a major urban centre to maintaining a government-owned storage facility in a rural area. As a result, the business areas do not often meet. In this context, the collaborative approach taken by the project team resulted in a strategy that was meaningful to staff, creating a sense of momentum and helping to secure the Executive Team's enthusiastic approval.

Mindsets and Tools over Methodologies

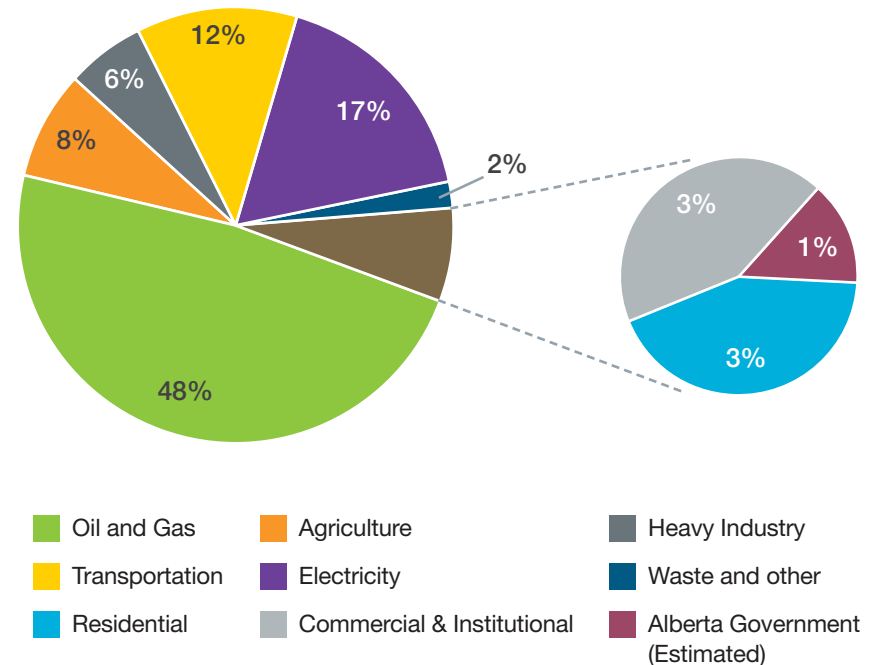
The process creatively combined tools from foresight, strategy development, and design at different times of the process, without necessarily following established, step-by-step foresight or design methodologies.

Foresight tools like horizon scanning helped participants understand and leverage a rich context of continuing patterns as well as emerging disruptions for strategy generation. Design helped develop an implementation plan tailored to different program areas' needs and circumstances.

Client Onboarding

The second session was accompanied by a facilitation crash course that helped the project team better grasp and navigate the process. This crash course can also help build clients' capacity, instead of creating dependency.

2015 GHG Emissions by Alberta Economic Sector



Canadian Energy Summit on Reducing Diesel in Remote Communities

Context

Duration 6 Months (Includes planning, execution, and wrap-up)
September 2016 – February 2017

Sponsor Provincial and Territorial Pan-Canadian Task Force for Reducing Diesel in Remote Communities

Participants Planning Team – 5
Workshop Participants – 160

Method Focus Mixed Methods/
Design Facilitation

Work Stream Client Projects

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

How might we generate a common vision and partnership in our commitment to reducing diesel use in Canada's remote communities?

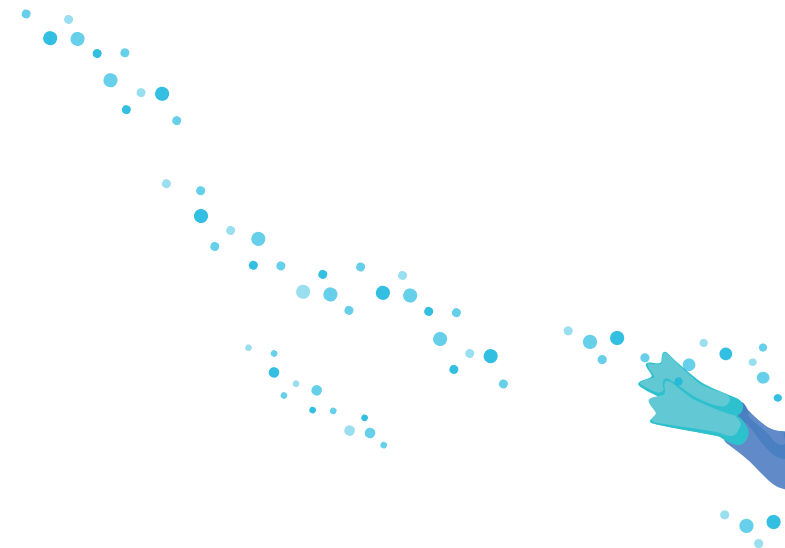
Overview

On January 17 and 18, 2017 stakeholders from across Canada convened in Winnipeg, Manitoba to discuss how to reduce diesel use in remote communities. Hosted by the Provincial and Territorial Pan-Canadian Task Force for Reducing Diesel in Remote Communities, the Summit brought together stakeholders from indigenous communities, academia, government, industry, utilities, service providers, and remote communities.

Together, participants spent two days hearing and learning about success stories and challenges in remote communities, participating in a facilitated workshop curated and delivered by CoLab. The purpose of the workshop was to develop a common vision for remote energy use and generate bold ideas for action moving forward.

Objectives for the two days were to:

- create a shared understanding of roles, responsibilities, and lived experiences related to diesel and remote communities;
- provide people with opportunities to meet and dialogue with new people;
- explore desirable futures;
- identify opportunities and ideas to create change in the system; and,
- understand other perspectives and experiences related to diesel and remote communities.

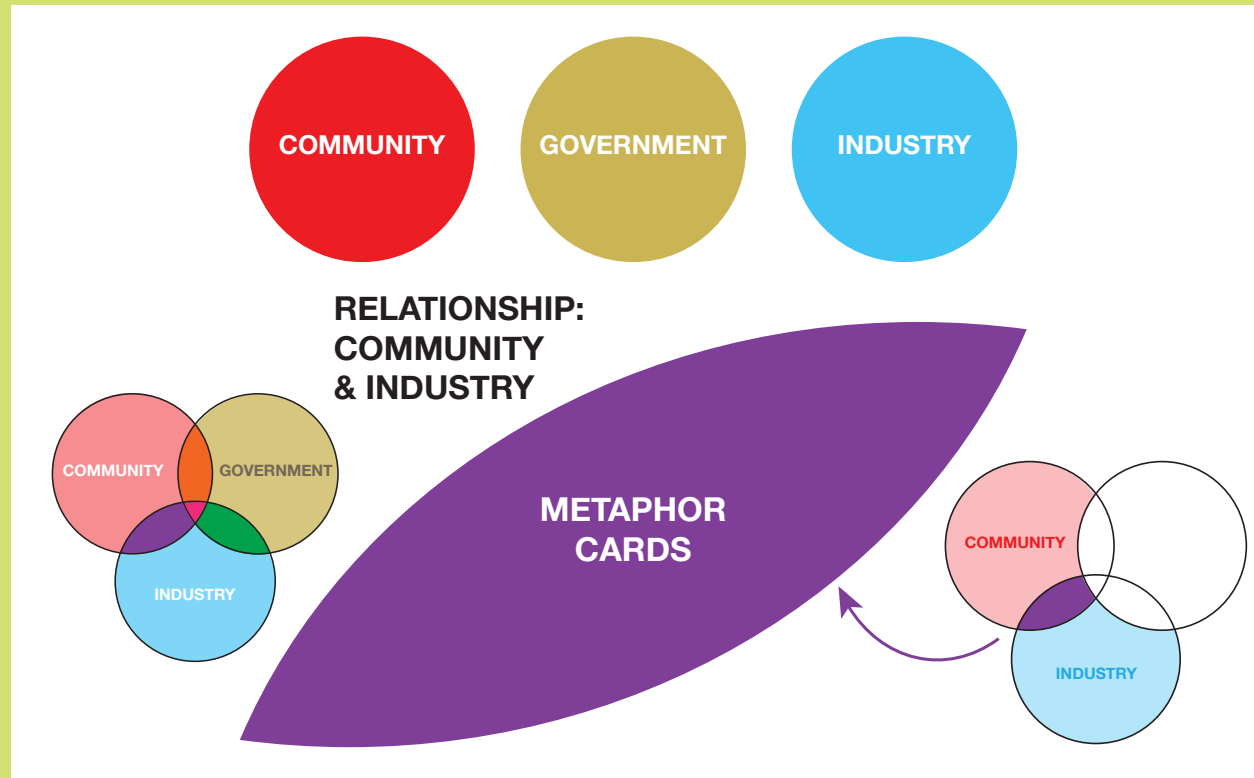


Impact

While this engagement was initially launched to explore technical solutions for reducing the use of diesel in remote communities, the systems approach that CoLab wove into the workshop design sparked much broader conversations on wider themes about community economic development in smaller, remote communities, as well as the adoption of other energy options. The Summit as a whole emphasized that each community has unique needs, desires, and technological requirements and capacities, and for real progress to be made, these communities need to be empowered to be more involved in determining the how the energy use portfolio looks in their community.

The process allowed for a large group (over 160 individuals) of diverse individuals to collectively build situational awareness around the current state of the problem space, and to then pivot their thinking to identify what necessary shifts in practice, programming, and policy are required to make real traction on the stated goal.

At the conclusion of the workshop, formal actions and next steps for consideration were developed that were rolled up for the sponsor to take forward.



ABOVE: The wall canvas used on Day One to collect participant insights on the intersections of government, community, and industry following presentations from the various sectors.

“Great job in hosting a highly interactive workshop – it prompted participants to look at things beyond what they thought they would. Senior folks were pleased with the outcomes and the work we put together.”

– Workshop Participant

Key Insights – Content/Challenge

Key Barriers Regarding the Challenge:

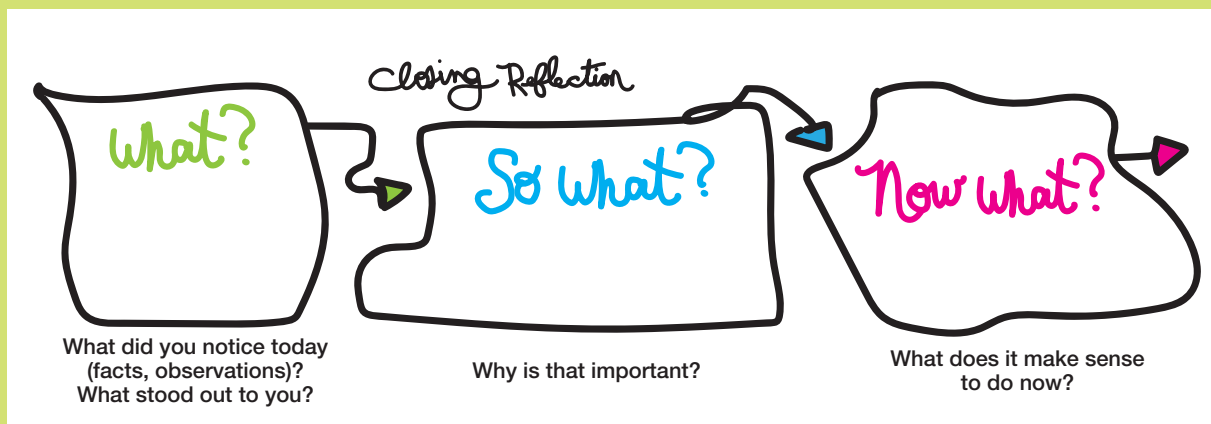
Persistent horizontal and vertical siloes among orders of government were evident from the current state discussion. Participants recognized the need for governments to work across silos and between ministries. Key energy decisions in communities relate to other systems including housing and other social and environmental factors that require a holistic approach. Connected to this was an acknowledgement that, largely speaking, there is a lack of community ownership over energy-centric planning and decision-making. In a space of constant change, community needs remain constant. Related to technology adoption, work is needed to identify technologies and innovations appropriate for extreme and remote environments.

A Shared Sense of the Future:

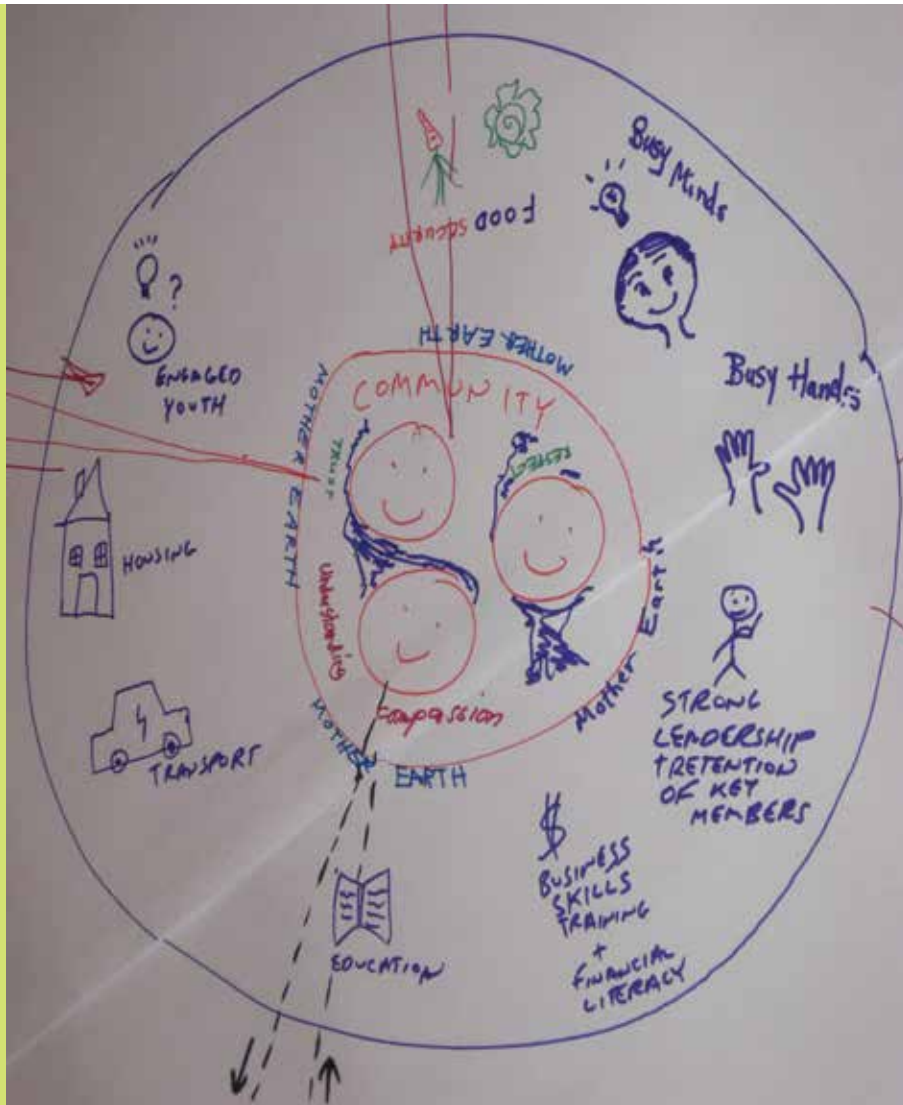
While reducing diesel was the initial discussion point for the Summit, a more holistic future-oriented conversation evolved over the two days. That desired future is one where communities are proud of their owned energy sources, highlighting indigenous innovations and energy independence. Participants talked about the possibilities of economic diversification and prosperity for communities tied to their energy systems – systems that could provide employment opportunities and provide opportunities for development. The common theme for the future was about collaborative, respectful, and transparent development between communities, governments, and industry, recognizing the important roles each play.

Tangible Success Measures:

Participants identified tangible and measureable success measures like a decrease in total diesel consumption, reduced air pollution, higher construction standards, decline in diesel related emissions, lower unemployment rates, higher rates of renewable energy sources, and higher high school graduation rates. More qualitative measures included healthier communities, a higher quality of empowerment and engagement, rising prosperity and optimism, and energy security. Skill levels of remote populations would be higher and more diversified, and communities would have energy plans developed and implemented. Related to a desire to consider more than just economic measures of success, communities, government and industry would have some sort of well-being index or measure in order to capture a more holistic view of the energy system.



LEFT: The wall canvas template used to collect final reflections from participants on their conference experience.



ABOVE: Participants created rich pictures at their tables to explore the desired future of energy in remote communities.



ABOVE: An image of the main canvas used to collect participant insights on the current and future state for energy in remote communities.

BELOW: Using metaphor cards to surface the current state of intersectoral relationships.



Key Insights – Process/CoLab Perspective

A number of process learnings surfaced from this engagement:

- Generating a shared vision amongst approximately 160 people is a difficult thing to do. Careful time must be dedicated to sitting down with a sponsor up-front to carefully articulate what success looks like for such an engagement, to reason out what is possible to accomplish in the time available, and the number of people that are involved.
- Design facilitation workshops can rely heavily on the principle of self-organization and generative dialogue when people want to be in the room and have a shared purpose for being there. Combined with the size of the group, differing priorities among the participants made it challenging to manage the discussion, keep people on task, and ensure that all voices were heard. If the CoLab team led this process again, we would make use of table facilitators.
- For real traction to be made on a systemic challenge, there must be attention to power dynamics so that real listening, learning, and shared planning can occur.
- Having well-organized wall canvasses where participants can place insights, suggestions, and ideas is an efficient and effective way to capture data in large group settings.
- Use of metaphor to make meaning out of intangible thoughts and ideas is an effective meaning-making technique.

“The difference was that it wasn’t death by PowerPoint. The workshop was a great way to get into the nuts and bolts – context and then working with the material.”

– Workshop Participant



Capacity Building

CoLab's capacity building work aims to create a public service that is more adaptive, better able to embrace and respond to the complexity of the challenges we face, and more futures-oriented.

In its communities of practice, training offerings, and publications, CoLab aims to be a catalyst for public sector innovation.



SDX10: Promising Practices Conference

Context

Duration After a few months of planning, SDX10 took place on Friday, November 3, 2017.

Sponsor Director, Alberta CoLab

Participants Approximately 50 people attended SDX10.

Method Focus Systemic Design

Work Stream Capacity Building

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

How might we share our learnings from recent conferences with the broader SDX community?

How might we provide a space for SDXers to have more in-depth conversations outside a three-hour workshop?

Overview

Launched in December 2015, Systemic Design eXchange (SDX) is convened in Edmonton by Alberta CoLab and the Skills Society Action Lab.

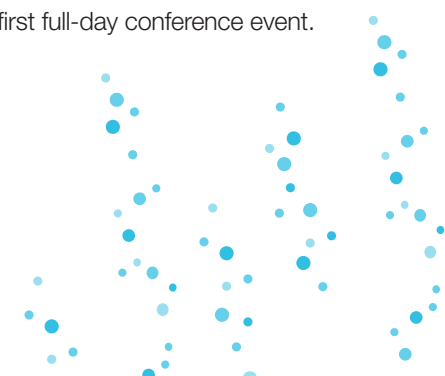
A Community of Practice (CoP) is a group of diverse people who come together to learn, share practices, and co-create knowledge around shared areas of interest. Informal communities of practice pop up in organizations around the water cooler, but when purposefully stewarded, they can become powerful, positive forces that help people navigate complex challenges together. SDX convenes people interested in learning about systemic design as a methodology for addressing complex, real world issues.

SDX explores systems thinking, design thinking, and lab approaches. With a bias towards learning by doing, SDX aims to be a watering hole where multiple sectors can come together, learn together, and act together. Members of the SDX community (SDXers) include people working in all orders of government

(city, provincial, and local federal government), in the social sector, private sector consultants, academics, students, and others.

Over time, SDX has become a diverse community of people with similar aspirations for change and changemaking. A number of collaborations have resulted from the introductions that have taken place at SDX between people who may not have met otherwise. SDX has a vibrant online presence that has attracted followers from around the world, and is being looked to as an inspirational model by others seeking to bring their changemaking communities together.

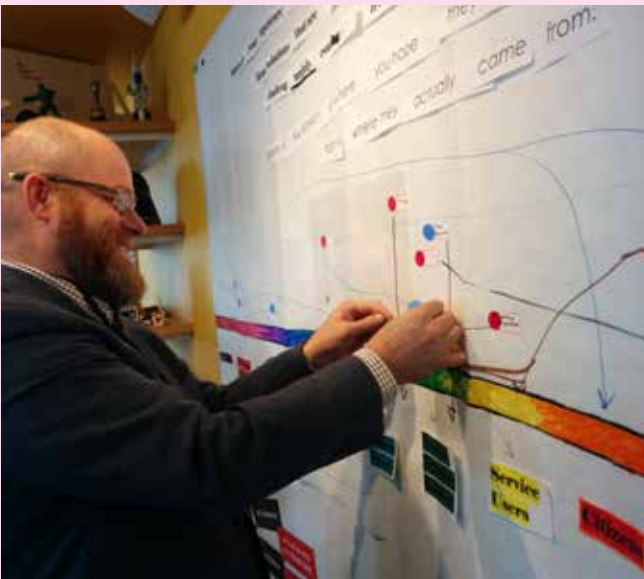
Typically, SDX convenes six half-day workshops per year and hosts two socials for SDXers to connect. SDX10 was its first full-day conference event.



The purpose of convening SDX10 was to share with the broader SDX community the learnings from the Relating Systems and Design Thinking Symposium (RSD), held in Oslo, Norway in October 2017. RSD is the leading international conference on systemic design. Because only a few people from Edmonton were able to attend the conference, the convening team felt that hosting a local event would be a great way for attendees to share what they learned with others.

“The report back session from RSD [Relating Systems and Design Thinking Symposium] was incredible. The conversation on systemic privilege and the tension between working within and without a system is not only incredibly necessary, but shows the maturity of the SDX community – I don’t know that even a year ago we would have had this conversation.”

– Workshop Participant



LEFT: SDXers were invited to plot their experiences about where their ideas for implementation come from, and reflect on those sources of inspiration in the context of power dynamics.

RIGHT: Participants use different types of materials to describe and explore different types of power and relationships.



Impact

- SDX is a unique collaboration between government and community. To our knowledge, it is the only space in Canada that is equally open to those inside and outside government and regularly brings people together for shared learning and practice around innovative approaches to systemic change. SDX10 was a unique opportunity to deepen these cross-sectoral connections and relationships.
- SDX is novel in its orientation. Specifically oriented towards growing the emerging field of systemic design, it links it to social innovation and changemaking in ways that are tangible and practical. SDX10 focused on providing tools, techniques, mindsets, and connections people can put into practice.
- Based on the evaluation, it is evident that SDX10 attendees benefitted in the following ways:
 - learning new techniques for systems change;
 - gaining feedback on their ideas from people with diverse experiences;
 - making new connections with people they would not have met otherwise, sometimes resulting in new work opportunities/collaborations;
 - meeting and sharing experiences and learning from each other; and,
 - leaving inspired to go back to the tough job of innovating in their home organizations and systems.
- SDX10 demonstrated that SDXers desire interactive, diverse gatherings. The convening team is consistently looking for ways to be useful, and hopes to increasingly use our convening power to help others host and lead sessions to get feedback and input on their work – to share the stage we have created. We also aspire to host more full-day learning events, where we can use our connections and convening abilities to help our community access top-notch and cutting edge social innovators, innovation toolkits, and experiences.



LEFT: SDXers converse on power, privilege, and systems change in the participant-led Open Space session.

RIGHT: CoLab team member Brent Wellsch gets ready to welcome participants to SDX10.

Key Insights

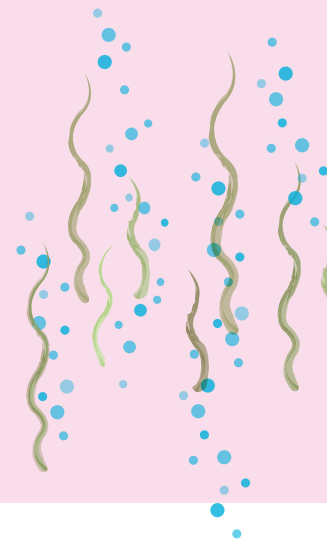
- To convene an event like SDX10, the following is required:
 - A clear purpose to orient the event and to be able to clearly communicate to people how they will benefit from participating.
 - Communication channels so that people can find out about the event and have ways to share their experiences afterwards.
 - Access to relevant content expertise.
 - Defined roles for all partners with clear expectations upfront and practices that support ongoing communication and planning.
 - Sufficient resources of time, money, and space to give people a safe and welcoming experience to which they want to return.
 - Convening skills to bring people together across networks and sectors.
 - Commitment to evaluation and reflective practice to track impact and incorporate learnings moving forward.
- The diversity of presenters and topics explored created great energy all day, as did the focus on interaction and engagement. The structure enabled everyone to learn from each other, not just from the facilitator or presenter.

“I think my greatest take-away from these events is how much innovation, creativity, and passion the people in the room bring to the table. People openly admit that they fail a lot and yet are still dedicated to finding something that works and it’s very inspiring.”

– Workshop Participant

“I learned how important an ‘epic try’ is and the power of a failure. The message of ‘start small’ and prototype came across loud and clear and it was important to consider little changes that work towards a future vision and not trying to spend a ton of time and money on a huge change that may or may not work.”

– Workshop Participant





“For me, it’s a way to hear how others are applying what they are learning. The reflections community members brought from RSD6 was useful because it gave me a peek inside the conversations occurring at the edges of this field.”

– Workshop Participant

- The SDX network is growing in strength as a community, in learning, and in the ability to support each other. While the convening team led a number of sessions during the day, SDXers also contributed their energy and insights into participating, leading open space sessions, and sharing back their own learnings and experiences from events that other SDXers were not able to attend.
- SDXers were able to have conversations on power and privilege in relation to their work that, as conveners, we have seen derail or not be possible at other gatherings. While these are still early and high-level conversations, they are a hopeful beginning.
- The event seemed to fill a gap in terms of its content and price point – many public servants attended who (as they expressed) would typically be priced out of a full-day “innovation” conference.

By maximizing our own time, energy, and networks, the convening team was able to put on an event that received overwhelmingly positive feedback and attracted new people with practically no budget, making the event as financially accessible as possible.

LEFT: An SDXer adds a topic to the schedule for discussion during the Open Space.

There May be Zombies: A Field Guide to Strategic Foresight

Context

Duration September 2016 –
March 2017

Sponsor Executive Director, Strategic
Policy, Alberta Energy

Participants CoLab Team Members

Method Focus Strategic Foresight

Work Stream Capacity Building

Please note that no zombies were harmed in the making of
this Portfolio.

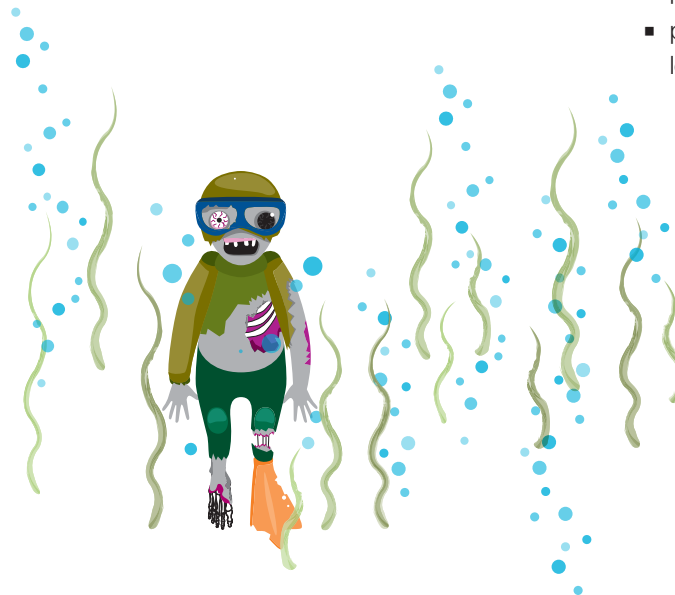
How might we support Government of Alberta staff to use strategic foresight methodology and tools?

Overview

In September 2016, CoLab began drafting its second field guide, an accompaniment to its first field guide on systemic design called *Follow the Rabbit: A Field Guide to Systemic Design*, which was first published in March 2016. The aim was to provide Government of Alberta staff with a useful, practical resource to put strategic foresight theory and methods into practice. It was also an opportunity to share the way CoLab approaches its foresight work – in a way that is both strategic and systemic – with a broader audience.

Objectives for the foresight field guide were to help people:

- explain why strategic foresight is a valuable practice for the public service and beyond;
- incorporate strategic foresight into ongoing business practices for their organization;
- identify specific opportunities to use strategic foresight,
- select strategic foresight methods for specific projects/project stages; and,
- plan and facilitate strategic foresight workshops and longer projects.



Published in March 2017, *There May be Zombies: A Field Guide to Strategic Foresight* (the *field guide*) is now part of CoLab's Strategic Foresight Intensive training course, and everyone who takes the course receives a copy to help them implement their learnings in their work.

The field guide's intended audience is beginner foresight analysts; those with a basic level of exposure to strategic foresight will likely find it most useful.

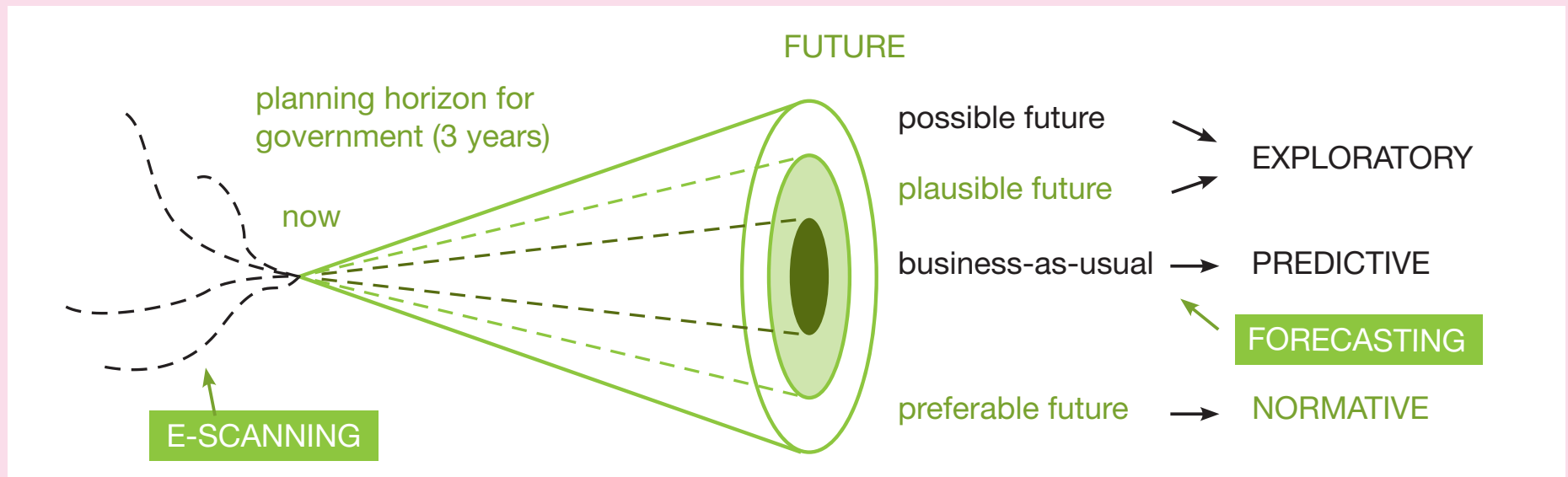
BELOW: The Cone of Plausibility shows how foresight is situated towards the more exploratory end of the range of approaches people can use to help illuminate the future.

Impact

Ongoing user feedback suggests that there is a need for practical tools and tips that go beyond theory and explanations of method to support people to implement strategic foresight approaches.

Sharing methods, tools, and approaches among public servants and foresight practitioners is an important field-building mechanism, enabling people to learn from and build on each other's approaches.

Being able to offer something tangible to others has enabled CoLab to share its approach beyond the capability of a hard-to-find, internal website – with Government of Alberta staff and beyond.



Key Insights – Content/Challenge

Foresight is a broad field of practice. Working through the process of creating the field guide helped the CoLab team articulate how we do foresight – in a way that is both strategic and systemic. It also highlighted the interconnections between systems thinking, design, strategy, and foresight in the way that we work – and how this is not always strongly articulated in the way we talk about or present our work.

Foresight tools and approaches can be nice complements to more traditional strategy or forecasting ways of working. While the benefits of a more exploratory and possibility-filled approach to the future is inherent in CoLab's approach to foresight, providing a beginner toolkit in the form of a field guide creates an open door for people looking for something different, without completely overhauling their status quo.

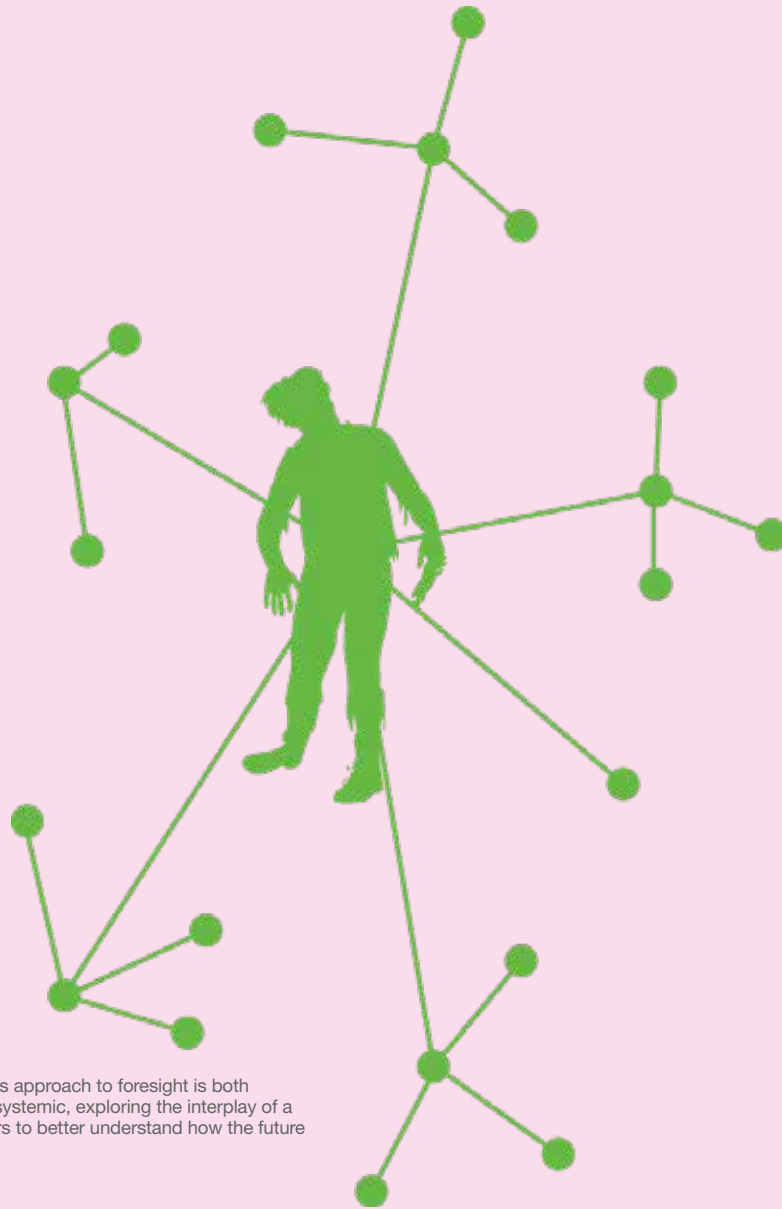
“It’s great. We’ve used the guide a number of times to pull out one of the methods to more deeply understand a problem.”

– Government of Alberta Foresight Practitioner



ABOVE: *There May be Zombies: A Field Guide to Strategic Foresight* by Alberta CoLab (2017).





RIGHT: CoLab's approach to foresight is both strategic and systemic, exploring the interplay of a range of factors to better understand how the future may unfold.

Key Insights – Process/CoLab Perspective

Thinking like a foresight strategist helped to create the narrative and frame for the field guide. What would we need to think about first? What might our next questions be? Creating from experience and also from imagination helped the team map out a useful frame for a beginner foresight strategist to navigate.

Fun matters: it helps attract people to what we have to offer and better enables people to learn concepts and tools that can appear challenging at the outset. Using a zombie theme was fun for the CoLab team, reflected our values into the world, and continues to help us engage people with our publication.

It was important to create a thread between the two field guides – systemic design and strategic foresight. Sometimes, it can appear in CoLab's practice that there are two distinct sides of work, when it is CoLab's aim to show how systemic design, foresight, and strategy complement each other. Mapping out CoLab's core methodological toolkit onto Popper's Diamond in the 'Methods' section of the field guide helped illustrate this point. There are likely stronger connections that can be made between the two field guides in future iterations.

“Love it! Fabulous work – it turned out amazing! Will be sharing this far and wide.”

– Government of Alberta Foresight Practitioner

Systemic Design Community of Practice: Service Design Series

Context

Duration February – June 2018

Sponsor Director, Alberta CoLab

Participants Approximately 150 public servants participated in six workshops.

Method Focus Systemic Design,
Service Design

Work Stream Capacity Building

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

How might we create a greater awareness and understanding about service design in the Government of Alberta?

Overview

In spring 2018, CoLab created and delivered a series of three workshops as part of its Systemic Design Community of Practice (SDCoP) to explore service design in a public sector context.

The purpose of the SDCoP is to nurture and grow the community of systemic design practitioners in the Government of Alberta. In particular, SDCoP aims to create a safe space where practitioners can collaborate, share knowledge, and strengthen the practical application of systemic design for policy and service delivery. Together, we explore systemic design theory, tools, and mindsets – all with a public sector lens.

At a high level, the service design series was designed to introduce foundational service design concepts to SDCoP members and to share practical design tools to better enable public servants to think about their work with both a service design and a systemic orientation.

Each workshop provided participants with a chance to network and meet new people, learn new concepts related to service design, and practice using newly

learned concepts through interactive activities and group work. Activities included role playing different service scenarios to explore the difference between a ‘good’ and ‘bad’ service experience, creating prototypes of improved service experiences using storyboards, creating user journey maps, and creating service blueprints.

While each workshop built on the previous, the CoLab team designed the sessions to be flexible enough that participants could benefit without attending all three. Due to popular demand, the CoLab team delivered each workshop twice.

“I learned the importance of positioning journey mapping as one step in the process – it’s not the end in itself, but a means to an end.”

– SDCoP Member

Service Design Series Workshops: Learning Objectives

From Systems to Services: An Introduction to Service Design

- Understand what a service is.
- Articulate why a service orientation is important.
- Explore how services and systems relate to one another.
- Understand what service design is.
- Ask questions about services that encourage a service design orientation.

Don't Stop Believing: Using Journey Maps

- Understand what a journey map is, and where it fits in a design process.
- Understand the major component parts of a journey map.
- Understand how to gather and plot data on a journey map.
- Understand how to move from mapping to prototypes.

Service Architecture: Service Blueprints

- Understand how the pieces of a service fit together
- Understand the “service blueprint”, how to make one, and when/how to use it.
- Understand the relationship between touchpoint prototyping and broader service architecture.
- Understand the relationship between service design and service implementation.



ABOVE: Participants were invited to create journey maps based on the experience of opening a bank account. Different groups were given different parts of the journey (segmented in advance by CoLab) to help them go more deeply into the service within the workshop time frame.



ABOVE: A workshop participant thinks through the emotional arc of a service experience.



ABOVE: CoLab team member Spencer Beacock makes the case for understanding service design in the public service.

Impact

The service design series provided SDCoP participants with a foundational understanding of service design and tools that they can begin to implement in their work right away. Materials created by CoLab to deliver the sessions – presentations, templates, and activities – are available for all public servants to access via the CoLab website.

CoLab's exploration of service design has resulted in a more concerted effort within the team to increase its capacities and work around prototyping and user research. Intended to complement and expand its foresight and systems-oriented work, CoLab hired its first Service Designer in early 2019.

“The aspects that are related to user-centered design and prototyping are particularly relevant to my team and are new to us, so I learn really useful skills I can take back and apply right away.”

– SDCoP Member

Key Insights – Content/Challenge

A service is a way of delivering or exchanging value, between people and/or organizations. This can be a one-way, two-way, or multi-directional transaction.

- A service is made possible by a range of human, technological, and organizational resources, but also by social norms and patterns we all share.
- A service might be thought of as a single moment, or as a bundle of moments unfolding over time.
- Services are more than just the right functions; the experience itself is important to success.

Service design uses design methods to align people, technology, artifacts, communication channels, organizations, and information.

The following elements make a good service:

- Consistency of intent across moments.
- Smooth hand-offs across the service.
- Moments of truth that leave positive impressions.
- Robustness over time that inspires trust.

Four questions to ask about a service:

- Who engages with it and what are their goals?
- When does it start and when does it end?
- What are the component parts and how might they relate to one another?
- What emotions are you hoping people feel?

A ‘journey’ refers to specific sets of actions, behaviours, contexts, and artifacts that are connected into a single experience in pursuit of a goal. By thinking through journeys, we can better:

- understand system linkages along the path;
- build empathy for people navigating the system;
- understand diversity of experiences; and,
- identify places to intervene.

A journey map is a visual representation of qualitative and quantitative data about how a person or people move through a journey or experience. Journey maps help designers to:

- crystallize key common moments in a journey;
- build a shared understanding of the world;
- develop an evidence base and make it accessible to support decisions; and,
- story-tell with stakeholders.

Journey mapping isn't a magic bullet – but often people think it is. People can fixate on the artifact, not the process that produces it or the process it enables. We can't stop at journey mapping: we have to turn knowledge into action. We can do this by prototyping and testing.

Asking your own questions and knowing how to find the answers is a critical part of being a designer – and a public servant.

Key Insights – Process/CoLab Perspective

Delivering each workshop twice enabled the CoLab team to make improvements on its first delivery based on participant feedback and the CoLab team’s experience. CoLab team members found it beneficial to be able to experiment with one session and quickly turn-around improvements for the second delivery.

Including a brief, in-workshop reflection at the end of each session enabled the CoLab team to immediately debrief, evaluate its work, and make changes in preparation for the next session. The closing reflection also highlighted patterns in participants’ insights that the team could use to orient its next delivery.

Typically, the CoLab team has only delivered each SDCoP session once. Based on its experience with the service design series, CoLab is now bringing back ‘greatest hits’ from past SDCoP sessions. This enables the CoLab team to put its reflections and evaluations into practice and provides more people with an opportunity to engage in a particular session (SDCoP sessions typically fill up quickly with a maximum attendance of 30 people). Because the majority of the work involved in running a session is in the design and planning, delivering each session more than once is beneficial for both the CoLab team and SDCoP members, who now have more learning opportunities.

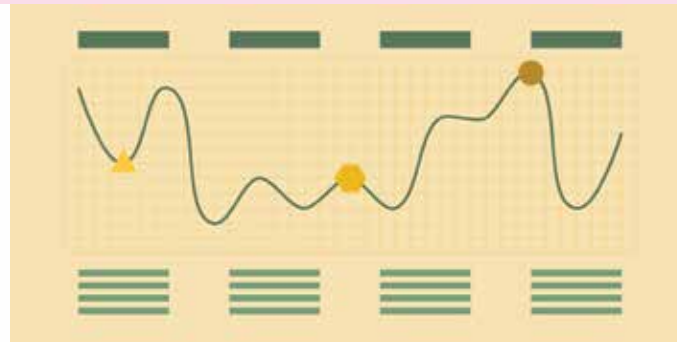
To date, service design is one of the most popular topics explored by the SDCoP. For the CoLab team, this suggests a desire for practical, hands-on tools that public servants can apply to their work. It also highlights the popularity of service design tools like journey mapping, and the need for designers to help people place such tools in the context of broader user research efforts; this will help ensure that the creation of these products do not become ends in themselves.

Services are embedded in systems, but services are also systems unto themselves. Exploring service design enabled the CoLab team to think about service design systemically – in a way that complements and links service design with systemic design.

“It pushes beyond bureaucratic practice and mindset by promoting strong critical thinking skills and innovative problem-solving.”

– SDCoP Member

BELOW: CoLab created a series of visuals to accompany each workshop.



Field Building

Outward-facing relationships enable CoLab to help grow the field of expertise around innovation methodologies, social labs, and energy transition.

By building a network of labs, chairing and presenting at conferences, and partnering with experts in related fields, CoLab can leverage additional resources while supporting broader, systemic change efforts.



CONVERGE: Canadian Lab Practitioners Exchange

Context

Duration July 27 – 28, 2018

Sponsor Simon Fraser University
Innovates/Beedie School
of Business, JW McConnell
Family Foundation, City
of Vancouver, Vancouver
Foundation

Participants 130 active social innovation
lab practitioners from across
Canada representing the
current field of labs.

Method Focus Social Innovation Labs and
related methodologies

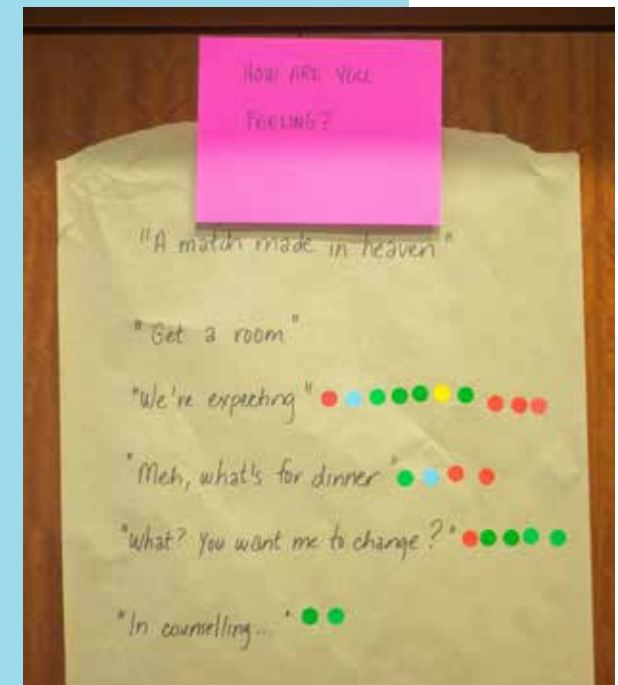
Work Stream Field Building

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

How might we...

- Deepen relationships and trust amongst lab practitioners?
- Create a space for lab practitioners to add value to each other's work?
- Begin to build a shared set of tools, practices, language, knowledge, and expertise across the lifecycle of a lab?
- Identify key problem/opportunity areas where Canadian labs can better align for increased coordination and impact?

BELOW: Taking the temperature of PSI labs at CONVERGE.



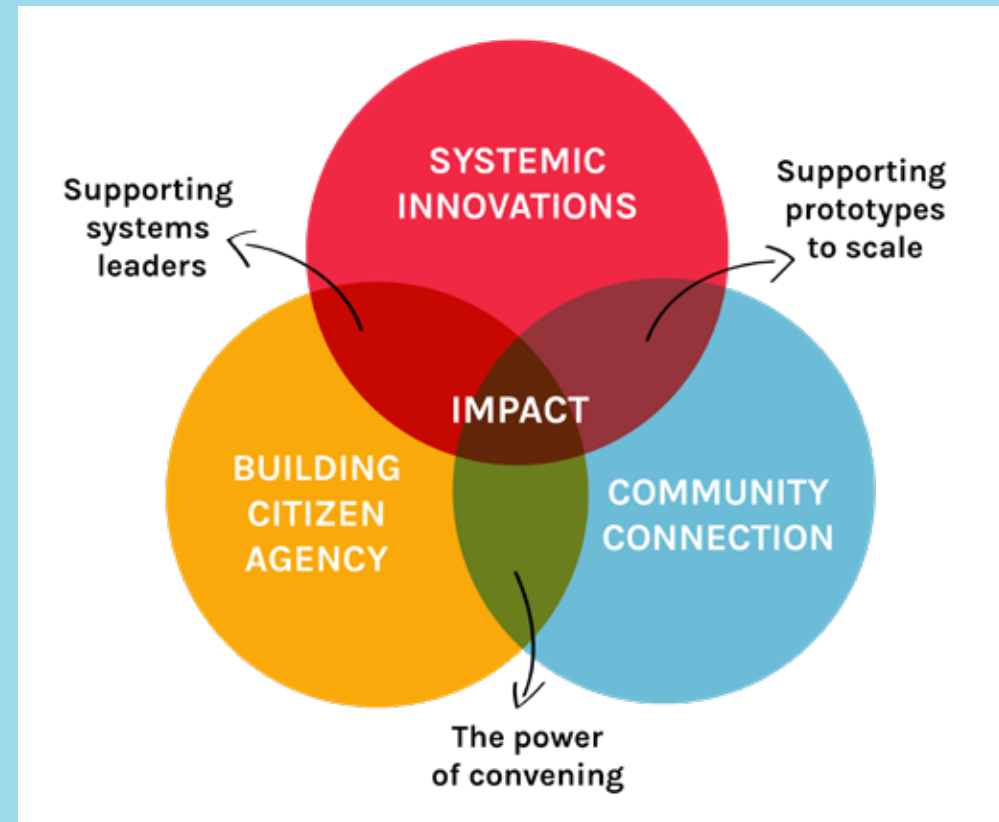
Overview

Canada is currently home to one of the most diverse landscapes for innovation labs. CONVERGE stands as the first time lab practitioners in Canada's social innovation ecosystem gathered together to explore labs as an emerging field of practice. Over 130 representatives from government, non-profit, for-profit, and academic sectors participated in discussions including the value proposition of labs, the democratization of labs, building the talent pipeline, and funding strategies.

The popularity of social innovation labs is connected to the increasingly complex nature of challenges organizations now grapple with, as the complexity of these challenges are often at odds with the siloed, departmentalized approaches of traditional problem solving. This is particularly notable in the recent rise of public sector innovation (PSI) labs. As one of the Canada's longest standing PSI labs, Alberta CoLab served as a key advisor, supporting both the design and delivery of presentations and engagement at CONVERGE. Specifically, CoLab convened presentations on the challenges facing PSI labs to integrate into their parent organizations, addressing the fragmentation and lack of connectivity amongst existing labs, and the evolving PSI lab toolset.

“CONVERGE was a useful, meaningful experience. Spending time together lets us have tough conversations and hold ourselves to account – we can push and encourage each other. I received insights about values and impact, power, and strategies for change that are already informing my work.”

– Roya Damabi, Alberta CoLab



ABOVE: From the CONVERGE organizers, an illustration of the types of impact to which labs aspire.



ABOVE: Participants take stock of the day during a reflection session.

Impact

Several 'go forward' opportunities were identified to build a strong ecosystem for labs and provide access to resources, skills, and support. Specific to government organizations, public sector innovation was identified as critical opportunity space for labs. For most participants, this was a call to action to demonstrate how an experimental, citizen-centric approach is a less risky way to spend public money than expensive pilot schemes. To this end, the ability for PSI labs to work more closely with lab participants and co-lead activities with labs from other sectors surfaced as a modus-operandi that could scale PSI lab impact and allow for true system transformation to begin.

To provide ongoing connectivity among PSI labs and others, the need to establish a community of practice was affirmed. This community has now officially launched across Canada and targets three needs:

- 1 getting people to connect and share practice;
- 2 documenting, testing, and refining ideas/approaches; and,
- 3 building the support structures needed to help others access, understand, and articulate the purposes, roles, and value of labs.

“It was heartening to be in a gathering full of people so dedicated to systems change and able to have the critical conversations about the real impacts of our practice.”

– CONVERGE Participant

Key Insights – Content/Challenge

Specific to PSI labs:

- Where public sector labs have demonstrated significant strength and value is in lifting up work that cuts across organizational and institutional silos. We need to take this super power and harness it for working on challenges where shifting government isn't the issue, but where governance is distributed and interdependent. What does this enabling infrastructure look like?
- When we consider the lab landscape in the Canadian public sector, labs are arguably no longer new. We are a part of the public sector consciousness, something that has been largely achieved by working with the willing: place-in-time leaders, communities of practice, early adopters, etc. That said, embedding this notion of social innovation/labs into the public sector requires a concerted focus on working with the unwilling. This means building relationships with difficult and unwilling partners whose values clash and whose mindsets challenge lab approaches. The point is not to convert them, but to make them allies.
- A key question moving forward is how we can build a very clear description of what labs do that is distinct from other processes that are called "innovation" in government (like Agile, Lean, Six Sigma, etc.)?

“Thank you for all your help and guidance leading to the event and during. We were/are such an awesome team!”

– **CONVERGE Participant**



ABOVE: Alberta CoLab Director Keren Perla leads a session on lab tools – the Tool Circuit – at CONVERGE.



ABOVE: From the CONVERGE organizers: the many facets of lab practice in Canada.

Key Insights – Process/CoLab Perspective

Relevant to how PSIs operate:

- Many labs highlight tools and methodologies over the systems they are trying to nudge or effect. While this is important, labs should not lose sight of the end game – to positively impact real systems and people. An increased issues focus or branding on specific issues (e.g., the United Nations Sustainable Development Goals, for instance) may enable more coordination among PSI and other labs.
- As the lab community has evolved, so has its use of specific terminology and language – and PSI labs are no exception. To reach the ambition of integration into larger organizations, we need to meet people where they are. As such, labs need to take a plain language approach.
- As disruptive events and technologies (e.g., Artificial Intelligence) revolutionize daily life, organizations will face emerging complex challenges that labs are not equipped to address in meaningful and generative ways. As we look to the next generation of labs, can we build new approaches and methodologies to host and convene on these types of topics?

Energy Futures Lab

Context

Duration March 2015 – Present

Sponsors Executive Director, Strategic Policy Branch, Alberta Energy
Assistant Deputy Minister, Strategic Policy Division, Alberta Energy

Participants Variable (10-150)

Method Focus Mixed Methods

Work Stream Advisory Services

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

How might Alberta's leadership position in today's energy system serve as a platform for transitioning to the energy system the future needs?

How might Alberta develop a diversified, competitive, and environmentally responsible energy sector that is robust and resilient to change?

Overview

Formed in fall 2015 by The Natural Step Canada, a not-for-profit organization, the Energy Futures Lab (EFL) is an Alberta-based initiative that convenes key government, industry, academic, non-profit, and indigenous stakeholders working in the area of long-term energy transition and energy systems. The initiative is intended to drive technology and social innovation in the area of long-term energy transition and energy systems within the province. Some have described the EFL as a “do-tank” rather than a “think-tank.” Key Partners for the lab include Suncor Energy, Shell, the Pembina Institute, and the Government of Alberta, including Emissions Reduction Alberta and Alberta Innovates.

The EFL has identified the need to depolarize the narrative around energy within the province as critical for advancing Alberta's leadership in the energy system of the future. To this end the EFL is envisioned as a forum for ongoing experimentation, innovation, and collaboration.

To achieve these outcomes, EFL organizes its activities into the following eight innovation pathways:

- 1 Radical Carbon Efficiency in Energy Production
- 2 Carbon Utilization; Smart Energy Communities
- 3 Public Engagement
- 4 Deployment of Distributed Renewables
- 5 Indigenous Alternative Energy Circle
- 6 Mobility
- 7 Workers and Communities in Transition
- 8 Policy Innovation

“The CoLab's approach was key for conceptualizing the energy system overall and for prototyping early stages of ideas.”

– EFL Participant



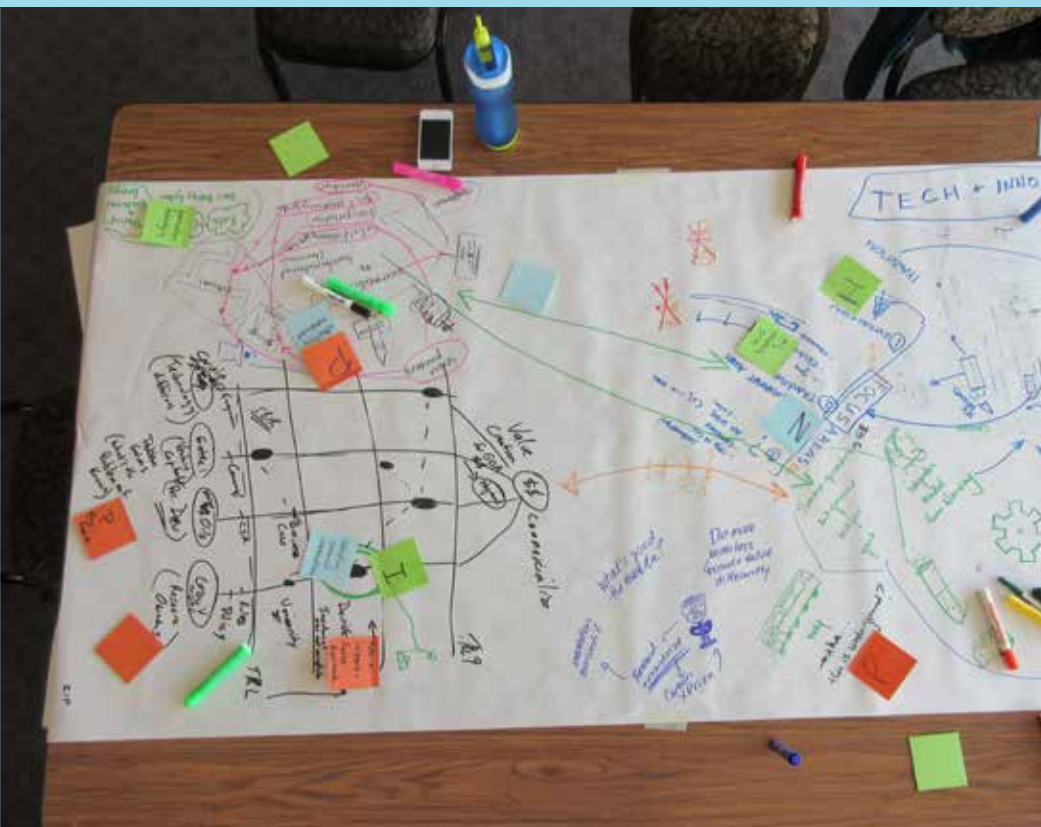
ABOVE: EFL Workshop participants explore the various narratives around energy transition, and how polarizing they can be.

The partnership between Alberta CoLab and the Energy Futures Lab is a unique inside/outside mechanism to ensure ongoing connectivity on energy transition. To this end, the Alberta CoLab team provides advice and in-kind support, collaborates on relevant research, including transition trends and drivers, Artificial Intelligence and low-carbon mobility, and also provides input on workshops and lab process. EFL enables CoLab to connect and learn from a diverse range of active, cutting-edge innovators working on energy transition, a platform to test emerging ideas and policy directions, and a fellow lab team that CoLab can learn from and with in its work to bring together social and technological innovation.

Discussions are currently underway between the Natural Step and EFL on the feasibility of scaling the work of the Energy Futures Lab (which focuses on Alberta) nationally across Canada.

“The importance of our relationship with CoLab is huge, as it gives us additional inroads with various departments and stakeholders.”

– EFL Participant



ABOVE: One of the first systems maps created by EFL fellows to explore the energy system from a technology and innovation perspective.

Impact

As a resource rich jurisdiction, what the energy system of the future will look like is a key question for Alberta and Canada. Disruption—be it technological, social, political, or economic—knocks on everyone’s door eventually. Through its partnership with EFL, Alberta CoLab has worked to spark dialogue on energy transition both inside and outside of government. CoLab currently participates on the EFL Steering Committee and Partners Committee, and actively identifies integration opportunities for EFL efforts with select government initiatives.

To date, CoLab’s partnership, advice, research and in-kind support have been critical for the following achievements:

- Establishment of a shared vision and innovation pathways for EFL members.
- Development of initial suite of EFL prototypes and strategy to iterate and evolve the EFL’s project portfolio.
- Creation of a forum, tailored to beta-test energy sector initiatives.
- Line-of-sight for government on external transition activity.

Key initiatives enhanced by the Alberta/EFL partnership include the following:

- The 2016 Alberta Energy Sustainability Strategy
- The 2018 Energy Sector Strategy
- The 2018 Sustainable Mobility Lab Project
- The future of Artificial Intelligence in the oil and gas sector
- Opportunity pathways: clean combustion of waste gases
- Opportunity pathways: Biojet

In late 2018, Alberta CoLab contributed to EFL’s launch of its first Accelerator by sharing preliminary results from its work on sustainable mobility. EFL Accelerators aim to bring together a select group of innovators from government, industry, civil society, and academia to work together on unique opportunities. This first 80-person, multi-stakeholder workshop enabled CoLab to foster discussions on innovations in hydrogen, biofuels, smart cities and lithium development, and gain feedback on its work.

Key Insights – Content/Challenge

The EFL platform brings together perspectives from core and emerging sectors connected to energy transition. Through ongoing collaboration and knowledge sharing, they identified the following critical areas for collective action to adapt and advance energy leadership through transition:

- **Future-fit Hydrocarbons:** innovation can secure a global role for Alberta's hydrocarbon resources in a low-carbon future.
- **Community Resilience:** new approaches to economic development, community planning, and mobility can prepare Alberta's communities for success.
- **Leveraging Our Energy Assets:** new value can be found in Alberta's legacy energy assets and infrastructure.
- **Indigenous Leadership:** energy transition presents new opportunities for trust and reconciliation between Indigenous and non-Indigenous peoples in Alberta.
- **People in Transition:** Alberta's workers can thrive in a low carbon economy if we support skill development and transfer.

To be effective, transition efforts must also actively challenge the mindset that 'technology will provide' the silver bullet solutions that will allow us to survive and thrive in a future where trends are driving towards the decarbonization of energy production and use. It is important to acknowledge that barriers and opportunities to change are also social and cultural. Even when a technology is technically viable, it may not realize its potential due to a number of other factors that limit or block its success in the real world. These factors may include policy or regulatory barriers, market acceptance, public sentiment, access to financing, amongst others. Social innovation addresses such factors and, in this way, can be seen as a complement to technological innovation.

In 2018, CoLab (through the Fellowship) supported areas of Clean Combustion of Waste Gases, Decarbonization and Biojet, in addition to its support to help launch EFL's Low-Carbon Mobility Accelerator. Alberta CoLab also presented a government perspective for EFL workshops around Artificial Intelligence and energy systems.

Key Insights – Process/CoLab Perspective

Build Insight-Outside Partnerships: Effective, sustainable social innovation platforms often require the collaboration of forces inside and outside government. Such partnerships allow social labs to benefit from each other's strengths and amplify their reach. Structures are often slow to change; as a lab on the inside of government, opening our doors to the broader lab ecosystem continues to be instrumental to maneuver around some of our toughest obstacles, including accessing and working directly with citizens and stakeholders.

Evolve your Approach: Labs, in many ways, are only as strong as the people supporting the work and the momentum they generate. To continue to make headway and progress on a challenge, you eventually need new perspectives: this requires you to evolve your approach, or hit a plateau of knowledge and insights. It is important to think about a new structure and approach in terms of focus and engagement.

“The CoLab is able to generate an excellent environment to understand the ‘bigger picture’ and integrate perspectives from a social and human point of view.”

– EFL Participant

Advisory Services

CoLab provides technical and strategic advice in our areas of expertise – energy related technological innovation, emissions, and public sector innovation.

These relationships enable CoLab to contribute to leading-edge research, thinking, and policy development, and implementation – and to learn from others at the forefront of their fields.



Oil Sands Emissions Intensity Review

Context

Duration June 2018 – September 2018

Sponsors Deputy Minister, Alberta Energy
Assistant Deputy Minister, Resource Development Policy, Alberta Energy
Executive Director, Market Access, Alberta Energy

Participants Outreach for the project involved engagement with over 15 stakeholders, including internal Department of Energy and other Government of Alberta staff (Executive Council, Environment and Parks, Climate Change Office, and Alberta Innovates).

Method Focus Strategy

Work Stream Mixed Work Streams (Projects, Advisory Services)

Work showcased in this Portfolio is exploratory in nature and is not intended to be predictive of future events.

How might the Department of Energy provide more accurate and up-to-date information about Alberta crude oil emission intensities to key financial stakeholders?

Overview

A fuel's greenhouse gas emissions (GHGs) intensity refers to the amount of emissions emitted per unit output during the production, refining, and use of a defined quantity of that fuel. Assessment of the actual GHG intensity of a crude oil throughout its lifecycle requires high quality data on extraction, handling, and refining methods. Because this type of data is rarely available to the public, GHG intensity of crude oils and fuel products are usually estimated by using a Lifecycle Assessment (LCA) model, based on a public understanding of the nature of the resource rather than an actual measure of emissions released. The assumptions made during LCA modeling can greatly impact the results. CoLab's Emission Review research focused on LCA models, with guidance and oversight by a designated cross-ministry team.

CoLab launched the Oil Sands Emissions Intensity Project ('Emissions Review') to explore and provide technical information on the carbon intensity of Alberta crude oils.

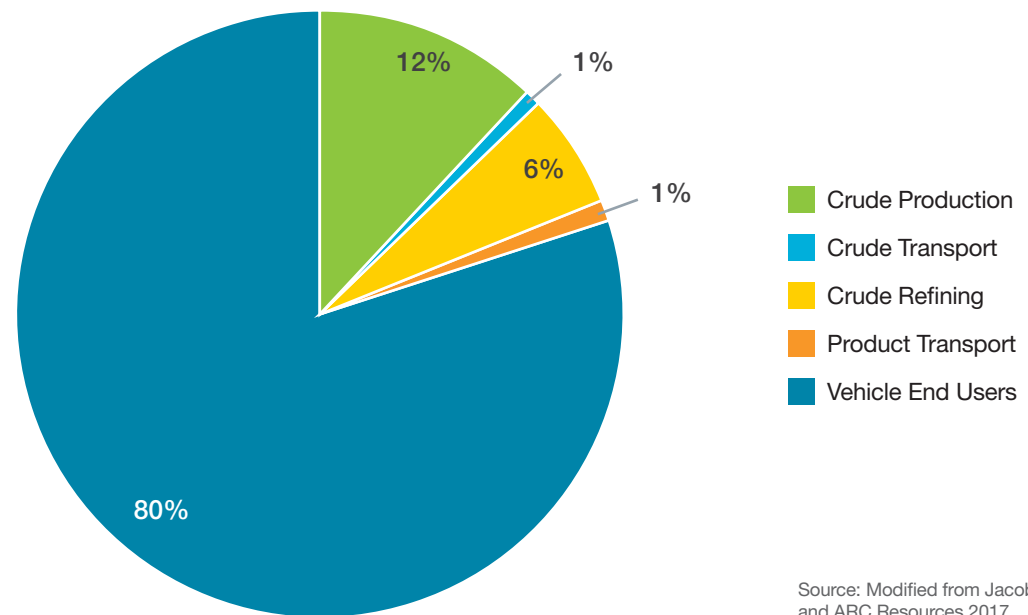
Financial stakeholders continue to look for quantitative data to demonstrate the effectiveness of the Climate Leadership Plan and reliable data around Alberta crude oil emissions intensities. The intent of the Emissions Review was to explore what publically shareable information exists to more accurately compare Alberta's oil sands emissions intensities with other North American crudes.

Key deliverables included a report, fact sheet, and presentations for analyst and executive-level audiences outlining the following:

- a primer on crude oil types and production methods for various Alberta marketable crude oils;
- emissions intensity data for Alberta crude oils, based on publically available information;
- a comparison of Alberta crude oils with other North American crude oil emission intensities, including differences in various lifecycle assessment carbon intensity models;
- impacts of data uncertainty on crude oil emission intensity evaluations; and,
- impact of technology on future emissions intensity of Alberta crude oils.

CoLab continues to provide advisory services in the area of emission intensities to inform strategy and policy development for the Department of Energy. CoLab's work supports the coordinated efforts of other Government of Alberta agencies such as Alberta Innovates and Emissions Reduction Alberta.

GHG's emitted at various stages



Source: Modified from Jacobs 2012 and ARC Resources 2017

Impact

Working Together

The project brought together a diverse group of Government of Alberta staff. While the primary analysis and meta-assessment was conducted by CoLab with support from Department of Energy's Market Access Team, other areas including Environment and Parks, the Alberta Climate Change Office, and Alberta Innovates provided input and helped ensure technical accuracy.

Addressing Current and Emerging Investment Patterns

Over the past several years, both investors and shareholders in major energy companies have started to demand greater transparency on climate change-related financial risk. Whether due to conscientiousness or how potential carbon policies or prices may affect their investments, investors and shareholders are increasingly considering environmental, social, and governance (ESG) performance metrics in quantifying carbon risk as a guiding principle in their decision-making. At the same time, several organizations have released assessment tools to help users and investors determine a given company's environmental performance.

For oil-producing jurisdictions, investor considerations are important. Energy companies face increasing pressure to disclose their risks resulting from global climate change policies. Large oil and gas companies (e.g., Exxon, Shell, and BP) are already disclosing climate change risk. Should the energy industry be required to operate in a more stringent carbon policy environment, jurisdictions with less carbon-intensive crudes will be at an advantage relative to their more carbon-intensive peers as their product may be considered to be more attractive and fetch a premium. Often, the lack of crude production data transparency benefits oil producers, as GHG intensity estimates are often understated due to poor data.

Given such factors, methods used to inform environmental performance evaluation or carbon policy should be as accurate and well-founded as possible.

Meaningful Deliverables

CoLab provided a robust analysis and meta-assessment of current emissions intensity research for consideration in ongoing stakeholder outreach. Leading and credible lifecycle analyses show continuous improvement in GHG intensity for commonly traded Alberta crude oils, which are of similar emissions intensity to other North American crudes.

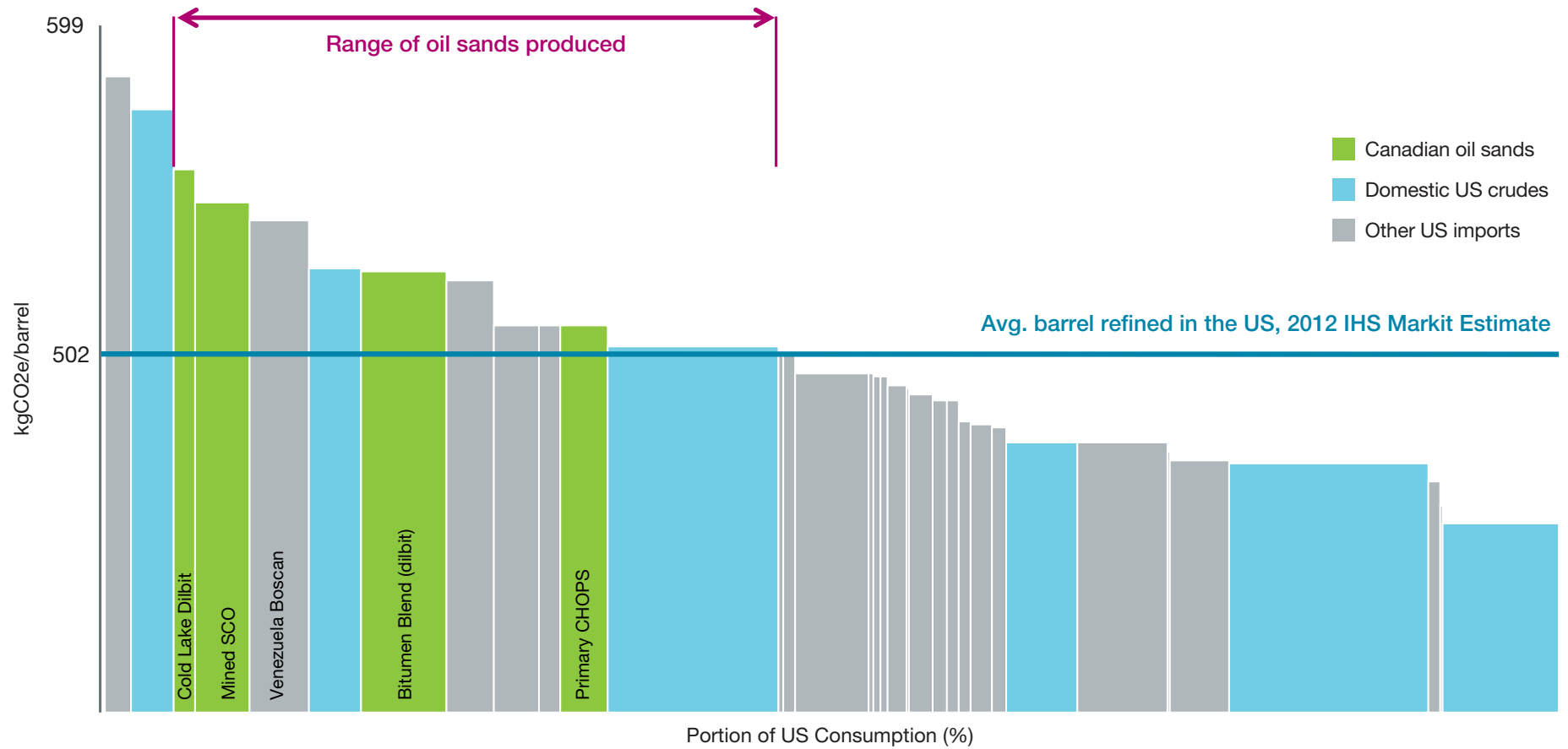
In addition to the Department of Energy, key beneficiaries for the Emissions Review include the Government of Alberta's Treasury Board and Finance, Alberta Climate Change Office, Alberta Environment and Parks, and Economic Development and Trade. Departmental stakeholders and those with whom CoLab has strong working relationships in the energy and environmental sector will benefit by using the life cycle analyses research generated by this work. The Emissions Review will also benefit Government of Alberta staff by providing a more robust understanding of emerging ESG metrics."

“[CoLab’s] efforts were absolutely invaluable...Research and work done by the team to foster better understanding of GHG emission intensities within the department and development of public materials was extremely valuable...The team is flexible to changes in timelines and requests, and a joy to work with!”

– Alberta Energy Staff Member

WTW GHG Emissions: Oil Sands compared with other crude oils

(wide-boundary-kgCO₂e/bbl of refined product)



Source: Modified from IHS Markit 2018

Key Insights – Content/Challenge

Crude Oil Emissions Intensity

- GHG intensities of North American (United States & Canada) crude oils vary within a range based on crude properties and production (extraction) methods. Additionally, some light (i.e., high-flaring) and heavy (thermally recovered) crudes have GHG intensities similar or higher than oil sands crudes.
- GHG emissions intensity of Alberta oil sand crude oils are similar to US crude oils.
- Alberta has demonstrated a continuous improvement in GHG emissions intensity for commonly traded oil sands crudes over the last decade.

Emissions Data and Reporting

- While LCA methodologies continue to be a primary tool used for emission intensity evaluations (and consequently environmental performance for crude stream comparisons), overall findings for crude oil comparisons have remained relatively unchanged over the past five years.
- Data quality and availability are critical in GHG intensity estimations. In particular, data being used in most other jurisdictions is not as comprehensive as Alberta crude data. This leads to high uncertainty when comparing GHG intensities.
- There are no standard GHG models used for ESG purposes; those that do exist vary in quality.
- Careful consideration must be exercised when using such GHG emissions intensity models as policy and/or investment decision-making tools.

An Expanded Set of Metrics

- Moving forward, informed climate change policy must go beyond simply examining the emissions intensity of a given crude oil and it will become increasingly critical to additionally consider ESG metrics when evaluating a crude producing jurisdiction's overall performance.
- Targeted research in areas beyond underlying production data quality and availability will necessitate inclusion of considerations like third-party auditing, corruption levels, the rights of Indigenous peoples, carbon pricing, crude emissions caps, flaring and venting regulations, and the overall rule of law.
- Only a select number of jurisdictions meet the evolving set of criteria that demonstrate strong ESG performance indicators. As one of these jurisdictions, Alberta can lead the way in its practices around data availability, environmental protection, governance, venting and flaring regulations, and climate policy.
- As the world moves to reduce GHG emissions, ESG considerations will help create a more predictable investment environment that will help dampen extreme policy fluctuations and improve overall health, safety, and quality of life.

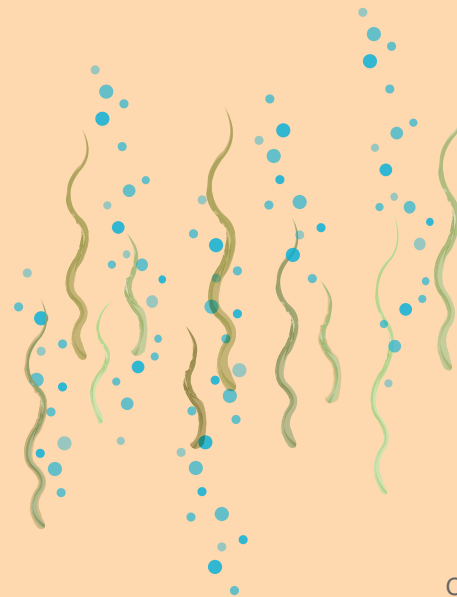




Key Insights – Process/CoLab Perspective

The majority of ESG metrics identified in next steps of the Emissions Review are cross-ministry and cross-government; as such, socialization and developing expertise and competency in emerging ESG metrics are key for advancing ongoing work.

Based on stakeholder discussions throughout the project, CoLab recommended a deep dive into current and emerging ESG metrics currently used by financial institutions to take place as part of future Executive Team planning sessions to develop a coordinated strategy.



Contact Us

The CoLab Team loves to chat all things systemic design, strategic foresight, strategy, energy, innovation – and more! Connect with us.

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