

# Workshop #2

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*Narrative October 18, 2023*



Compiled by

**Maureen Kolla, Terri-Lynn Duque, Keren Perla, Sarah Brooks, Ashley Meller**

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# Energy Futures Lab

*An award-winning, multi-stakeholder and rights and title holders social innovation lab focused on the energy transition*

The Energy Futures Lab is an Alberta-based coalition of innovators and leading organizations from across the energy system. It was created to address a growing sense of polarization in Canada and to tackle the most pressing system-level challenges in the energy transition. Since its inception in 2015, the Energy Futures Lab has brought together stakeholders and Indigenous rights and title holders from across the Canadian energy system to collaboratively accelerate progress towards our vision of a net-zero energy future, drawing on diverse perspectives to create innovative and enduring solutions to complex, system-level challenges.

*Together we must uncover the solutions that will power Alberta's bright future*

A new reality is already upon us, demanding a response from a system out of sync. Applying the Energy Futures Lab's unique social innovation lens, inclusive of recognizing the rights and titles held by Indigenous communities, to the Alberta electricity challenge can help create alignment in direction, build capacity to navigate and overcome barriers, and accelerate the adoption of innovative ideas.

With a net-zero grid being central to many decarbonization efforts, there is an increasing urgency to address this issue. To do this, we are bringing together key stakeholders and Indigenous rights and title holders in Alberta's electricity system to develop a systems-level understanding of its root challenges; a vision for its future; and a coordinated approach to test potential solutions.

*The Natural Step Canada Partnership*

The Energy Futures Lab is a part of a partnership fostering a strong and inclusive economy that thrives within nature's limits.

The Energy Futures Lab operates as an independent initiative of The Natural Step Canada, alongside the Canada Plastics Pact, Circular Economy Leadership Canada, PLACE Centre, and the Canadian Alliance for Net-Zero Agri-food (CANZA).

These multi stakeholder and Indigenous rights and title holders coalitions foster collective action on critical issues informed by evidence and research, including from the Smart Prosperity Institute's research network and national policy think tank.



# About Alberta's Electricity Future

*How might Alberta's electricity system collaboratively orient and organize itself to meet the needs of the net-zero economy of the future?*

Unlocking Canada's progress towards net-zero will require a big evolution of our electricity systems. This evolution is also key to preparing our technologies and industries to compete in emerging growth opportunities and rapidly decarbonizing global markets.

Experts estimate that by 2050 Canada will require an increase in supply between 62 per cent and 210 per cent. Draft federal regulations requiring Canada's electricity grid to have net-zero emissions by 2035 were released in August 2023.

While misgivings exist about the feasibility of the proposed time frame, **there is growing agreement about the importance of preparing the grid to overcome the twin challenges of increasing consumer demand and reducing emissions.**

Given individual provinces' unique context, needs, and readiness to dig into the challenge, **there is no one-size-fits-all solution.** And while there is no shortage of ideas about how to carve a path forward, the reality is that individual system actors cannot make this journey alone. For Alberta's grid to enable future prosperity and support the province as it grows and diversifies its economy, **alignment and coordination are essential.**

Formally launched in March 2023, **Alberta's Electricity Future (AEF) is a three-year initiative** that will collaborate and partner with traditional electricity voices like industry and government while focusing on historically underrepresented groups such as youth, people living in poverty, and Indigenous rights and title holders to align on collective actions that will enable the whole system to progress in a way that ensures reliable, safe, and affordable electricity for Albertans. We have made progress on our engagement with Indigenous communities and are committed to more engagement as we move forward.

Trust and collaboration are central to shaping the future of Alberta's electricity system. **Aligned leaders can be a powerful voice for influencing the future of electricity and driving actions that deliver the most effective outcomes.**



# It Starts with a Vision: Table of Contents

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*Phase I of Alberta's Electricity Future sets out to establish a shared vision for the provincial electricity system - one that puts customers at the center. The following was developed by the AEF Team based on learnings from Building a Vision Workshop #2 of 2. A vision document reflecting the results from the Building a Vision Workshops #1 and 2 will be developed and shared separately.*

***We invite your feedback so we can continue to collectively refine the outcomes of this initiative.***

# Pressure Cooker of Innovation

“No pressure, no diamonds.” - Thomas Carlyle

Where Workshop #1 focused on articulating the electricity system the future will require of us, Workshop #2 explored what should guide and inform how we get there.

Unpacking the gap between where we are today and the electricity future we need requires us to stretch our thinking and embrace uncertainty and the tension between these two poles. To this end, participants shared their views on the biggest questions that will need to be addressed as we reorient the way we think about electricity and place the needs of customers - people, communities and businesses - at its centre.





# A Pressure Cooker Situation

*There are good reasons to reduce emissions from electricity. Alberta has committed to the aspiration of net-zero by 2050, and the current moment has not muted the need - or appetite - for change. But, we need to be clear on the challenges ahead already making Alberta's electricity system an arena of crunchy questions.*

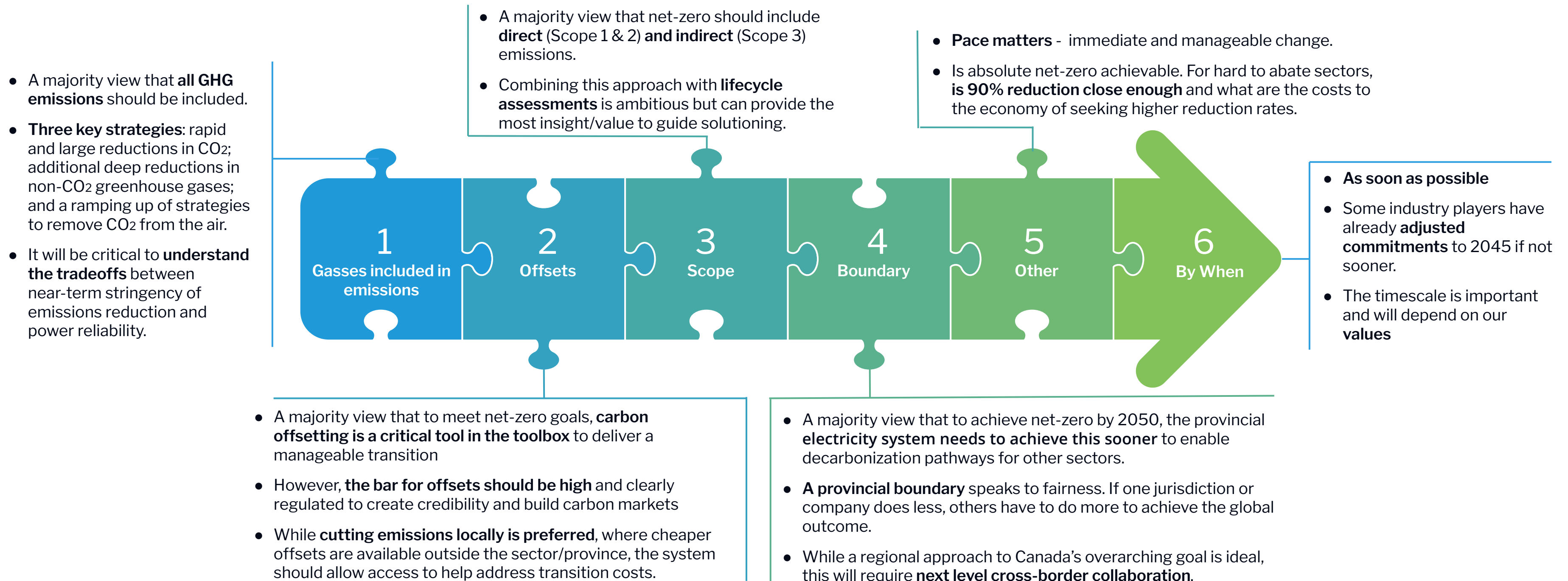
*Think of a 'pressure cooker' that traps steam and builds pressure to accelerate the cooking process without destroying the dish or exploding. Similarly, we can use these challenges to encourage creative thinking and responses to make this a productive moment.*

## SPOTLIGHTED: CRITICAL QUESTIONS PARTICIPANTS SURFACED AS PART OF WORKSHOP #2.

- What is the role of electricity actors in reducing energy poverty and advancing solutions to support the needs of those **experiencing energy poverty** or is that the purview of social programs?
- **Affordable electricity prices** are key for consumers to access the benefits of increased electrification. At the same time we need to understand the true costs (and savings) of decarbonizing the grid. Can the transition to a **net-zero system make things more affordable** for everyone?
- Even as urgency grows to achieve net-zero, **deepened and expanded engagement with communities** will be key - to understand their unique attributes and needs AND confirm support for solutions. **This takes time.** For communities to participate they need to feel they can contribute and have the capacity to shape solutions and difficult choices. How do we walk and chew gum?
- Evolving customer expectations are creating the case for innovation and change for Alberta's electricity system. Yet, prioritizing customers may create unintended consequences for the existing system, land, water, and air. **To what degree should customers be prioritized** above other, broader considerations?
- Policy and markets must be sufficiently flexible to keep pace with external changing factors and remove barriers to innovation. Should enhanced **flexibility come at the expense of longer-term certainty** needed to generate stable pricing and attract investment?
- The introduction of **new technologies and innovations are not without their challenges** for market structures. At a time when reliability and energy security concerns are heightened, is the promise that diversification can enhance these dual aims enough to break from status-quo?
- To support a **manageable transition** to a net-zero electricity system, it is critical to **minimize costs and maximize efficiencies where we can.** Are market structures and regulations set up to ensure the opportunities to optimize are realized?

# Too Important to Overlook: Net-Zero

**How we define the goal of net-zero for Alberta's electricity system matters.** The details behind this label continue to differ enormously in terms of the types of emissions included, the use of offsets, methods for aggregating (scope), the jurisdictional boundary, and timelines. The following summarizes the input from Workshop #2 participants. The results signal an **“all of the above approach” is needed**. There is acknowledgement that the stakes are too high to eliminate options for deep emissions reduction, and that these reductions must be considered across the full value chain of electricity production, management and use.





# Why this Approach?

“If you always do what you did, you’ll always get what you got.” - Jessie Potter

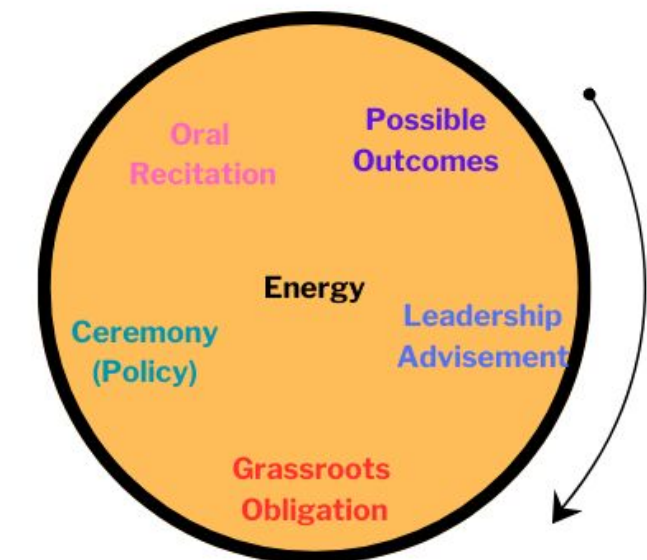
Process design can dramatically improve and intervene in the journey of transformation. To reach somewhere we’ve never been before, we need new practices in how we approach the work.

# New Ways Forward, Enriched by Gifts from our Elders

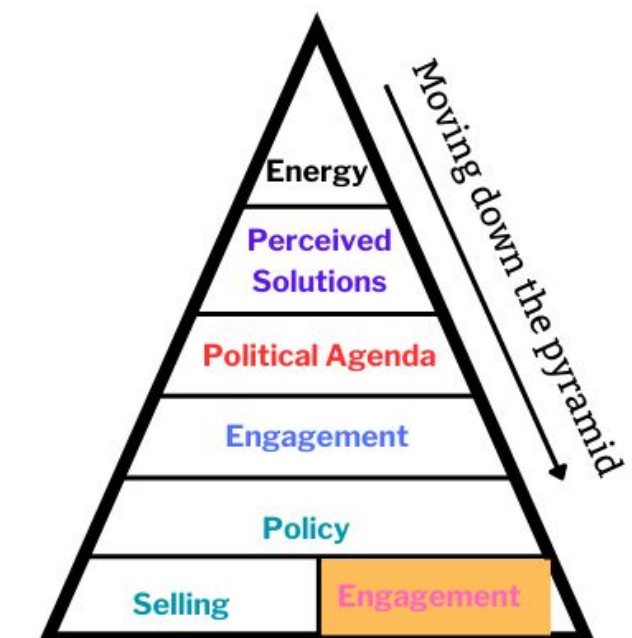
*During his opening remarks, former Xakiji (Chief) Lee Crowchild talked about differences between typical Western approaches, where broad engagement on big questions often occurs after most decision are made, and Indigenous approaches, informed by future generations, that start with engagement of affected parties, and blend ceremony with policy development and story- and meaning-making as part of an ongoing, balanced whole.*

AEF recognizes that the thinking and practices of the system's past will not get us to the future system we need. To this end, we are committed to:

1. **Engage the full voice of the system.** Our story and practice is richer when we engage voices traditionally excluded or marginalized. Our engagement spans traditional electricity voices like industry and government as well as historically underrepresented groups such as youth, people living in poverty, and Indigenous rights and title holders.
2. **Begin with the end in mind,** envisioning and co-creating with system actors a picture of the electricity system of Alberta's future. This acts as a North Star to directionally guide action. We take into account but do not only proceed on the basis of what is feasible today; feasibility affects pace, not our direction. We orient to the future we seek to create.
3. **Advance within common boundaries.** Co-created principles guide our collective journey, informing choices at forks in the road and acting as guardrails. Our principles are general enough to be used in multiple contexts, concrete enough to guide action and decision making and allow different actors to apply them within their unique contexts. They provide boundaries of what good looks like in the transition to a net-zero electricity system in Alberta. They are the outline of our collective story.



Indigenous Approach



Western Approach

# Principles for Alberta's Electricity Future

“Principles are the simplicity on the far side of complexity.” - Stephen R. Covey

Principles are a tool helping us navigate the complex journey to a net-zero electricity system in Alberta. They describe minimum conditions that must be met for our journey to arrive at the desired state. They provide guardrails for collective action while maintaining flexibility for individual actors to apply them in their unique contexts.



# A Principled Shift: A Straw Dog Proposal

*Alberta's electricity system is based on the principles of reliability, safety, and low-cost electricity supply. The **results from Workshop #1 illuminated the need to revisit how we think about the current principles** that guide the system. Presented is a set of **straw-dog principles ('headlines')** developed by the AEF team based on data from Workshop #1 and further discussions with energy poverty and Indigenous groups leading up to Workshop #2.*

***Over 90% of the Workshop #2 participants felt they were directionally correct and a sufficient foundation to generate a next, enhanced version.***

## Diversified

### Essence:

There are a variety of electricity sources and services available to meet consumer needs. This ensures electrical system resiliency and enables a thriving economy.

## Equitable

### Essence:

The system is aligned with the values and needs of future Albertans, leading to affordable and accessible electricity for all.

## Flexible

### Essence:

Policy, regulations, mandates, and roles keep pace with external changing factors, providing clear boundaries & goals without overprescribing solutions.

## Optimized

### Essence:

New and existing technologies and solutions have been optimized to efficiently use existing assets, in addition to growing and replacing parts of the current asset base, to enable affordability.

## Reliable

### Essence:

Albertans will have access to electricity when and where they need it.

## Safe

### Essence:

No physical and mental harm shall be done to the citizens and businesses of Alberta as a result of having guaranteed access to electricity.

# Refined Principles: Our Evolved Strawdog

“Control is for Beginners. Iteration is truly the mother of invention.” - Anonymous

A Workshop #2 goal was to refine and develop principles from diverse perspectives to act as the guideposts for the future system. The following slides were developed by the participants.





## Participants shared this feedback...

- Increase opportunity for consumer generation; widely adopted self-generation
- Diverse supports and services needed as not all consumers are the same
- Balance distributed micro-generation while preserving cost sharing of the grid
- Prices progressively increase enabling affordability for those who need it; energy poverty is eliminated
- Leverage old and new infrastructure to promote reliability and stability (operations and pricing) - no wild swings due to an over-concentration or reliance on a single entity
- Integrate existing infrastructure to decrease costs

... that resulted in ...

# Allowing Diversity

***Essence:** Removing barriers, allowing for a variety of electricity solutions that reduce emissions and meet community and consumer needs to enable electricity system resiliency and a thriving economy.*

- Government's role is to:
  - Remove barriers (e.g. policy, funding accessibility, market entry, etc.) and clear pathways for market diversification to occur naturally.
  - Fill gaps for end-users where inequities occur to reduce energy poverty and inequities.
  - Not dictate winners and losers.
- There is increased opportunities for consumers, generation types, solutions, and pricing models.
- Volatility of price is reduced for residential end-users.
- Solutions are created, tailored and accessible for unique community needs and have been accepted by the greater community. This requires closely working with communities and a move away from “one-size fits all” ideas.

## Participants shared this feedback...

- Should respecting environmental equity be a standalone principle?
- Those in poverty are disadvantaged in the electricity market (e.g., RRO, credit requirement for contracts, etc.)
- More access to energy use data, programs, and services
- First Nations' building costs affects access and affordability
- Aspiration: Albertans living in energy poverty has steadily declined to zero
- All systems have costs and impacts, right now those are 'inequitably' allocated
- Cost causation is a roadblock. If we have a net-zero system does cost causation still apply?

... that resulted in ...

## Equitable

***Essence:** The system is aligned with the values and needs of future Albertans, leading to affordable and accessible electricity for all while respecting Alberta's land, air and water.*

- The cost of achieving net-zero electricity is a societal cost, not just electricity rate-based cost - because there are societal benefits
- Affordable electricity is clearly defined and can be measured across the province with basic needs prioritized while maintaining cost causation principles
- All actors in the electricity system are accountable to Albertans to achieving an equitable distribution of benefits
- Albertans are empowered, engaged and educated to influence the cost of their electricity bill through behavioural & technology changes
- Albertans struggling with energy poverty are automatically enrolled in tax-based assistance programs. Albertans electricity needs are understood and met through transparent, empathetic communications, simplified processes and on-demand access to targeted programs and services
- Alberta's land, water, air and people are protected as we thoughtfully develop our energy system



## Participants shared this feedback...

- Flexibility and adaptation of educational institutions needed to address changes in the market (ex. emerging technologies require specialized fields)
- Energy alone does not create a reliable system, need capacity and other attributes
- Need to go faster
- Should this principle be flexible or adaptable

... that resulted in ...

## Flexible

***Essence:** Policy, regulations, mandates, and roles keep pace with external changing factors, providing clear boundaries and goals without overprescribing solutions while maintaining affordability.*

- Shifts in outcome based policy and regulations have longer term policy certainty, ensuring the stable transition of the sector as changes need to be implemented.
- Electricity policies and regulations are viewed as accelerators for innovation, providing companies space to innovate while enabling and supporting customers.
- Development of policy, regulations, mandates and roles should be based on established non-partisan principles determined by involvement of stakeholders, communities, indigenous groups, and experts (academics).
- Long term policy, regulations and market design connects supply and demand to enable competitive, clean, electricity supply and demand side management supports.





## Participants shared this feedback...

- To optimize requires trade offs, how will principles be prioritized?
- Need to change market pricing to be a total delivered cost model
- Balance reducing consumption with local production and demand response. Then draw on interconnected grid.
- Demand side, distributed and non-wires solutions are fully developed and defer transmission and distribution upgrades
- Diverse and improved technologies to serve remote and rural communities
- 90% of the 2023 transmission system is used at 80% capacity
- Service is equitable

... that resulted in ...

## Optimize System

***Essence:*** New and existing solutions, including technologies, have been optimized to efficiently use existing elements in addition to growing and replacing parts of the current elements to enable the other principles.

- Market mechanisms (not only competitive environments) exist (including regulatory processes, locational signals, etc.) that enable utilities (generators and wires) as well as end-users (including end-user service providers) to invest in conservation and energy efficiency.
- ALL consumers are educated from a trusted and empowered central source and make decisions in response to energy consumption.
- Focus on energy education includes evolving wise practices, codes, etc. and producing energy professionals.
- Establish market mechanisms that incorporate end-users into the electricity system such that price signals inform choice between demand and supply and centralized and distributed resources.
- All buildings are both an electricity producer and consumer due to the integration of demand side management tools and resources that enable strong business cases.



## Participants shared this feedback...

- Transmission system reliability utilizes distribution energy resources and demand response strategies
- Fair access for all regardless of socio-economics. People who cannot afford electricity still have reliable access
- 24x7 guaranteed supply even under uncertain conditions. No black outs.
- Reliability includes behind the fence operations, not just the upstream components on the grid

... that resulted in ...

## Reliable

*Essence: Reliability is the right to a safe, equitable, secure system that meets each consumers' needs [and is] experienced in a consistent manner.*

- All participants have the opportunity and choice to participate and contribute to grid reliability and can be rewarded / compensated for doing so.
- Electricity is managed using a diversity of solutions (including scale, technology and providers) to maintain service across the province.
- All consumers use electricity efficiently, considering 'what demand is necessary'; supply is matched to 'responsible' demand.
- Level of "reliable" is determined by end user.
- Reliability is priced into the market/system to determine level of consumer choice.
- Market structures enable supply and demand solutions to meet supply adequacy and operating of the bulk and distributed systems.
- By rethinking the definition of reliability we can ensure electricity is affordable (this assumes minimum safety is affordable to all).





## Participants shared this feedback...

- Electrical safety matters because electricity is powerful and potentially harmful if managed improperly
- Need to clarify who and what needs to be safe
- Environmental harm needs to be included as the system goes beyond physical and human aspects

... that resulted in ...

## Safe

***Essence:** No reasonably preventable environmental, physical, or mental harm shall be done to the natural ecosystem, and/or people of Alberta through having reliable access to electricity.*

- Electricity supply and delivery is an essential service (\*option - in daily operations and extreme events) and reasonably accessible for all Albertans, regardless of income level.
- Energy poverty is viewed and managed from a lens of support, not punishment, when dealing with the transitions.
- Residents (people, public, households) and businesses safety is not impacted due to electricity access.
- Generation, transmission, and distribution of electricity is safely integrated and operated.



# A Principled Shift: Summary of Upgrades

## Diversified

**Essence:**  
There are a variety of electricity sources and services available to meet consumer needs. This ensures electrical system resiliency and enables a thriving economy.

## Allowing Diversity

**Essence:**  
Removing barriers, allowing for a variety of electricity solutions that reduce emissions and meet community and consumer needs to enable electricity system resiliency and a thriving economy.

## Equitable

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The system is aligned with the values and needs of future Albertans, leading to affordable and accessible electricity for all.

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## Optimize System

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## Safe

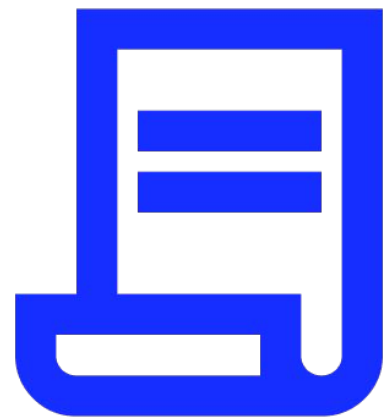
**Essence:**  
No reasonably preventable environmental, physical, or mental harm shall be done to the natural ecosystem, and/or people of Alberta through having reliable access to electricity.

# Signals of Transformation

"No matter what, expect the unexpected. And whenever possible, be the unexpected." - Lynda Barry

How will we know if we are advancing in the right direction?  
Workshop #2 provided a moment for leaders across the electricity system to consider signals or indicators in the broad environment that we might see and point to change increasingly oriented to the future we need.

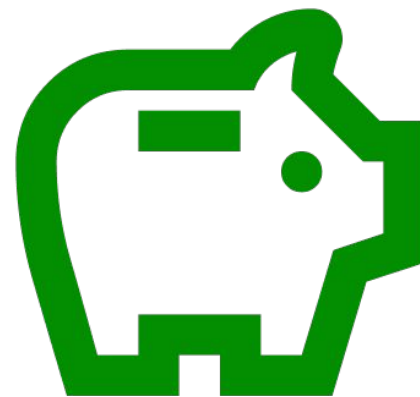
# Signals of Transformation - Legend



**Policy  
Signals**



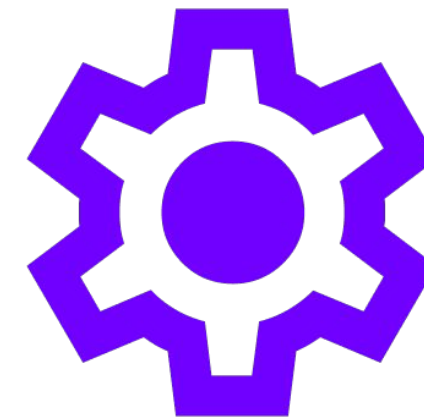
**Social  
Signals**



**Market &  
Financial  
Signals**



**Regulatory  
Signals**



**Technology  
Signals**



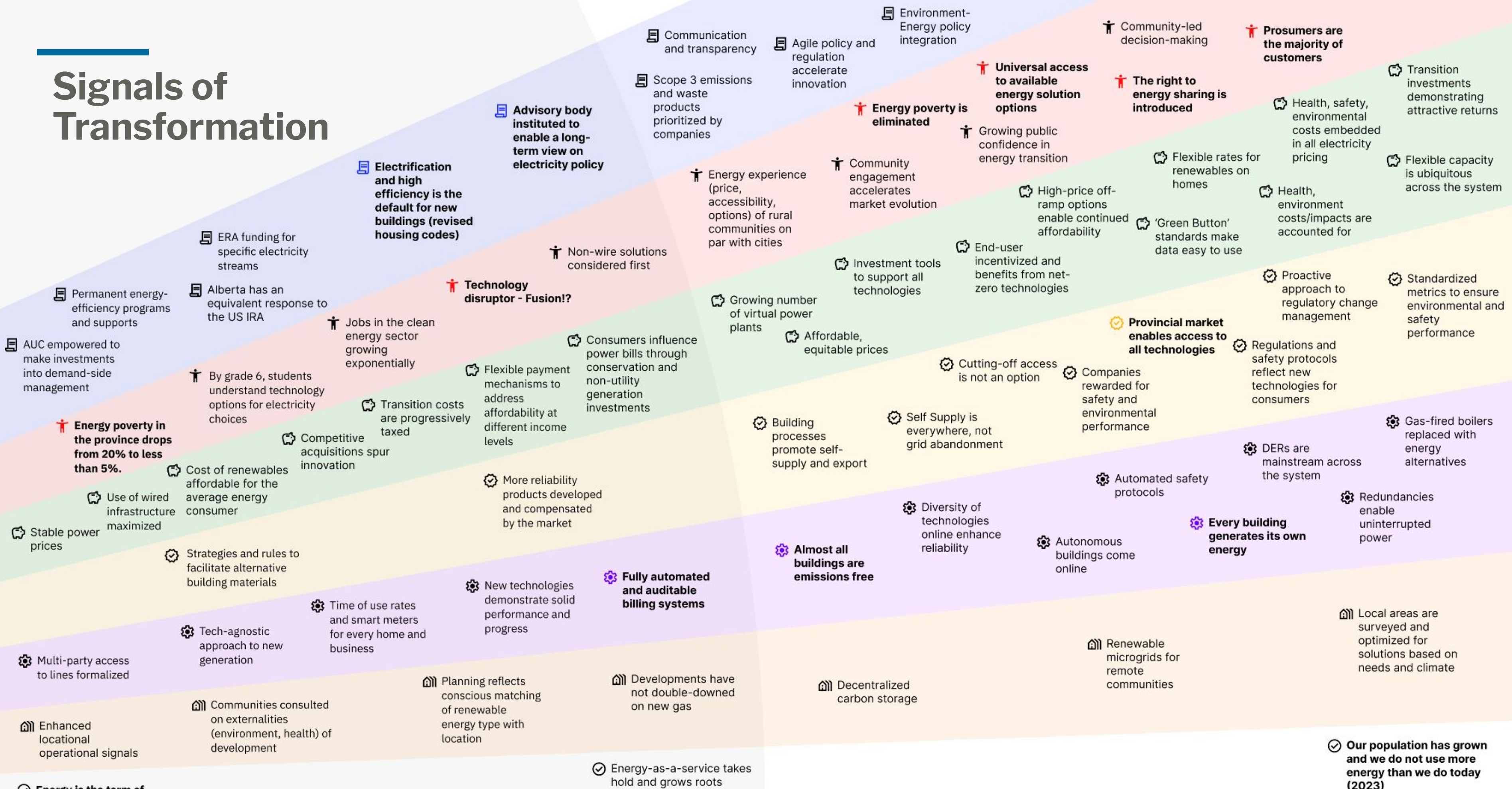
**Place-  
based  
Signals**



**Other  
Signals**



# Signals of Transformation





# The Next Sprint

“Unless someone like you cares a whole awful lot,  
nothing is going to get better. It’s not.” — Dr. Seuss.

# The Next Sprint: Articulating the Vision

*June (W1) and October (W2) engagements have been key goal posts, providing critical connections and fresh perspectives on the degree of change required to ensure the electricity system continues to meet the needs of people, businesses, and communities.*

*Armed with these insights, the AEF team will create a draft vision for which we will seek feedback and endorsement. We will then move to: 1) expand engagement with other voices to validate the vision 2) dig into barriers as promising areas for solutioning.*

## **Crafting the vision. Getting your feedback**

To develop a draft vision, the AEF team will use the following guidance:

- clarify direction, not offer solutions (yet),
- make it action-oriented,
- ensure each principle is distinct and mutually-reinforcing,
- consider affordability as a cross-cutting lens for all principles, and
- look to guide solutioning that optimizes for the full range of human characteristics, abilities, and experiences.

We propose to use the vision as our North Star to build collaborative action. **The vision will accompany this narrative as a separate document for you to review.** Please send us your comments.

In late January, we will bring you all back together virtually to review and discuss the vision as a collective.

## **Building alignment and support**

We will organize 1-on-1 meetings, as needed, to understand what support and endorsement of the vision looks like from you and your organization.

## **Vision validation**

The future belongs to everyone. We want to make sure that broader groups of people, businesses, and communities also align with this vision and will further seek to refine and validate the vision with different groups. This will prioritize elevating Indigenous, low-income, and other marginalized voices. We invite you to participate in these engagements.

## **Challenge and barriers identification**

Once we know where we need to go, the real work begins. Phase 2 will build off of the crunchy questions surfaced in Workshops #1 and 2 and prioritize the most urgent and necessary challenges and barriers to tackle. We will focus on enhancing the work underway, not duplicating.