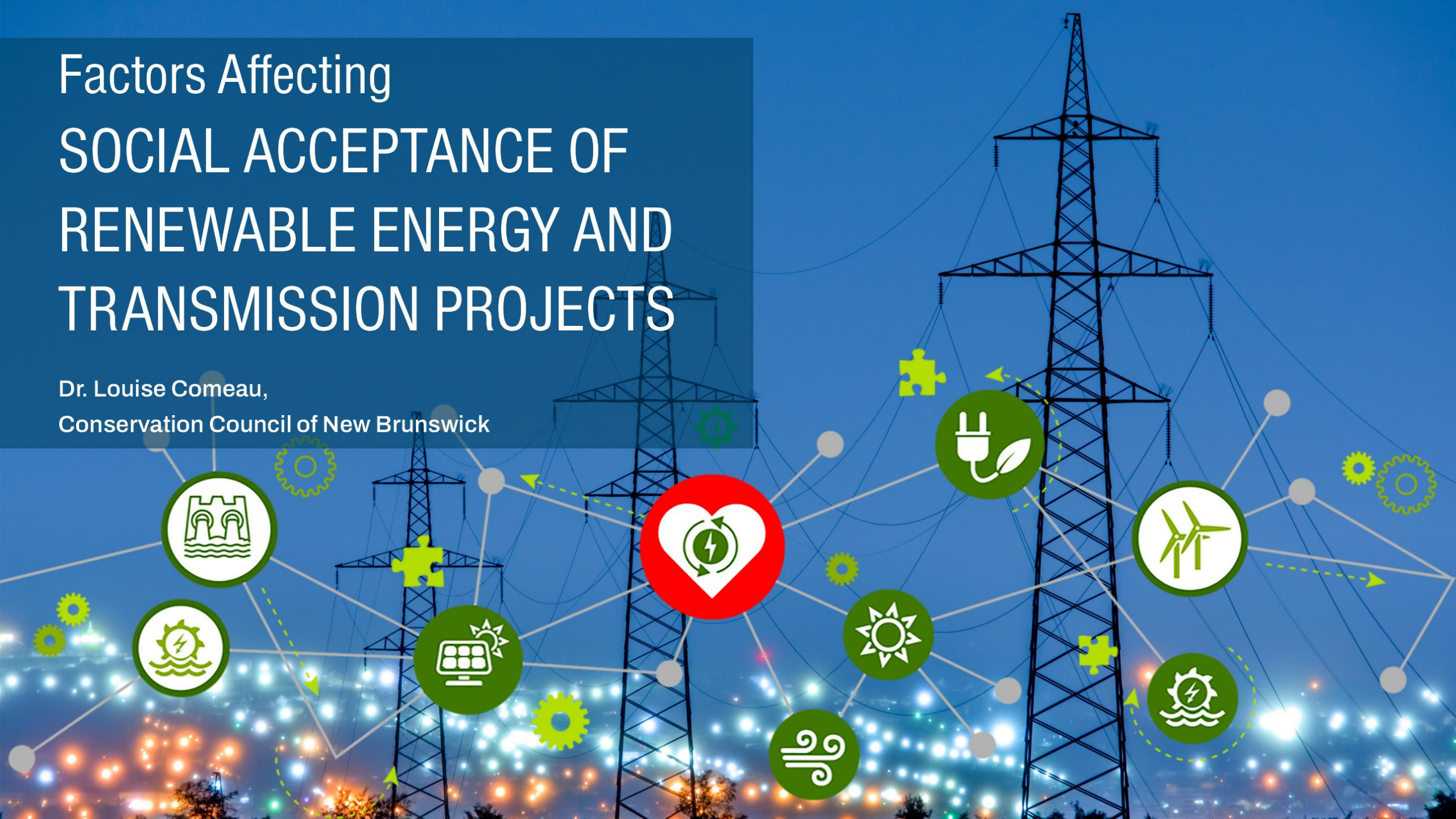


Factors Affecting SOCIAL ACCEPTANCE OF RENEWABLE ENERGY AND TRANSMISSION PROJECTS

Dr. Louise Comeau,
Conservation Council of New Brunswick

Overview

- Research details: focus groups, survey
- Community influence; Community benefits
- Fairness evaluations
- Narratives testing
- Results
- Recommendations

This research project started with a question

- Why do some renewable projects fail?
  - Two 20 MW wind projects failed in Northern New Brunswick (Anse Bleu, Pokeshaw)
  - The social scientist sets out on a quest

Motivation: Limit barriers to renewable energy and transmission projects from pace, proportion, people

Pace	Proportion	People
➢ Climate policies to reach zero emitting electricity systems in Canada in less than 15 years (2035)	➢ Electrification modelling suggesting the electricity system will at least double in size to power transportation, homes and businesses	➢ Canadians' favour renewable energy (wind, sun, water) ➢ Also oppose new renewable energy and transmission developments causing delays or project cancellation

Research mixed method to explore and confirm

FOCUS GROUPS

SURVEY

Community influence, Community benefits

What if we listened to the people? “In contrast to the traditional ‘decide–announce–defend’ strategy of energy development, such work encourages increased consultation, engagement and collaboration,” (Boudet 2019).

Community projects defined as: in, on the edge of or near communities, within regular view

How much influence should communities or citizens have over where projects are located?

- People want:
  - To have access and standing, participate, and for communities to have a choice
  - Some want to vote on a set of options; others want to be consulted and accept others make the final decision
- All have concerns about power imbalance from vested interests, about bias, and believe neutral experts should advise citizens

What benefits, if anything (financial, community investments or any other kind of benefits), should homeowners, communities, indigenous communities expect when renewable projects are proposed?

People want:

- Education and personal and social financial benefits (jobs, economic partnerships, incentives/rebates, tax breaks, community sponsorships), as well as environmental benefits.
  - Concern about community impact without gaining a community benefit. Can include community sponsorships, lower property, sales taxes or power rates, knowing the power generated is power the community relies on
- Community pride

Transmission

One narrative statement focused on transmission

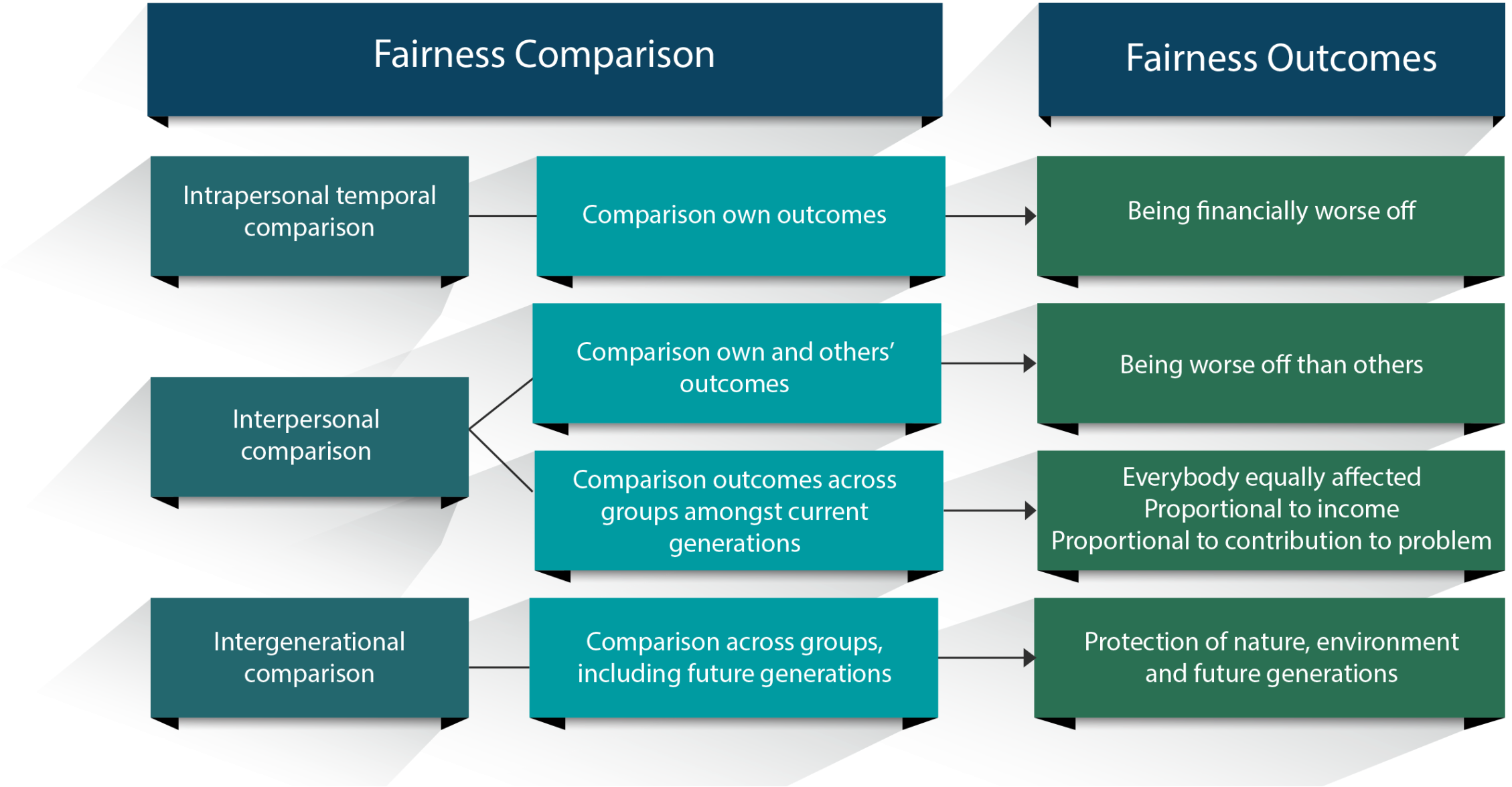
Transmission is necessary within limits

Narrative argument*: Energy experts say we need transmission lines to increase the reliability of renewable energy either to bring in hydro power when the sun is not shining or the wind is not blowing or when other storage technologies are not available.*

- Participants open to sharing ("we do it now for gas"), see transmission as a "necessary evil", have concerns about view and health effects, want alternatives considered and lines buried; some worry lines just for exports or about risk to sovereignty and energy security if a province is too reliant on electricity from out of province.

Fairness framework to guide policy design, communications framing

People think about fairness to evaluate policies or projects like renewable energy and transmission; academics identify at least six fairness outcome evaluations people use



Adapted from Schuitema, G., Steg, L., & Kruining, M. v. (2011). When are transport policies fair and acceptable? *Soc Just Res, 24*, 66-84.

How does CCNB analysis fit with other research?

Very well

Nature Climate Change meta-analysis of 51 academic papers covering 89 studies and over 119k people: Fairness and effectiveness most influence public opinion on climate change solutions like regulations and taxes; institutional trust matters too

Bergquist, M., Nilsson, A., Harring, N. *et al.* Meta-analyses of fifteen determinants of public opinion about climate change taxes and laws. *Nat. Clim. Chang.* **12,** 235–240 (2022). https://doi.org/10.1038/s41558-022-01297-6

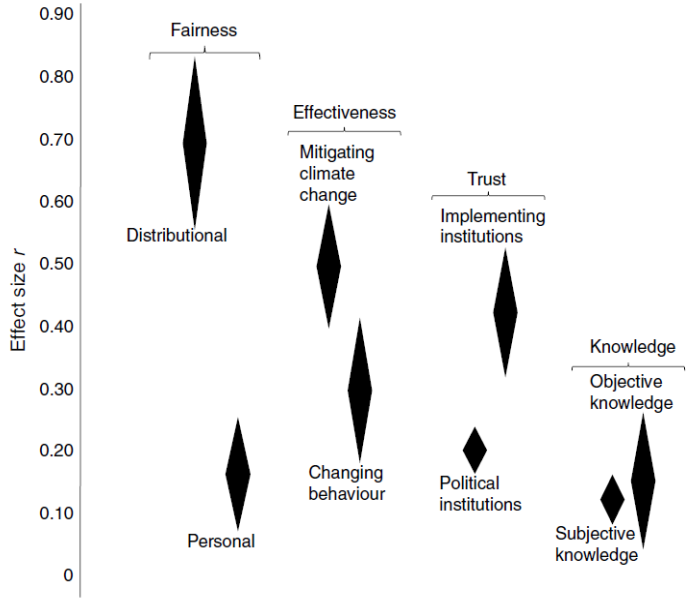


Fig. 2 | Visual summary of the relationship between subtypes of determinants and public opinion about climate change taxes and laws. Geometrical centres of the diamond shapes represent mean values and end-points represent ±95% CI.

Survey results

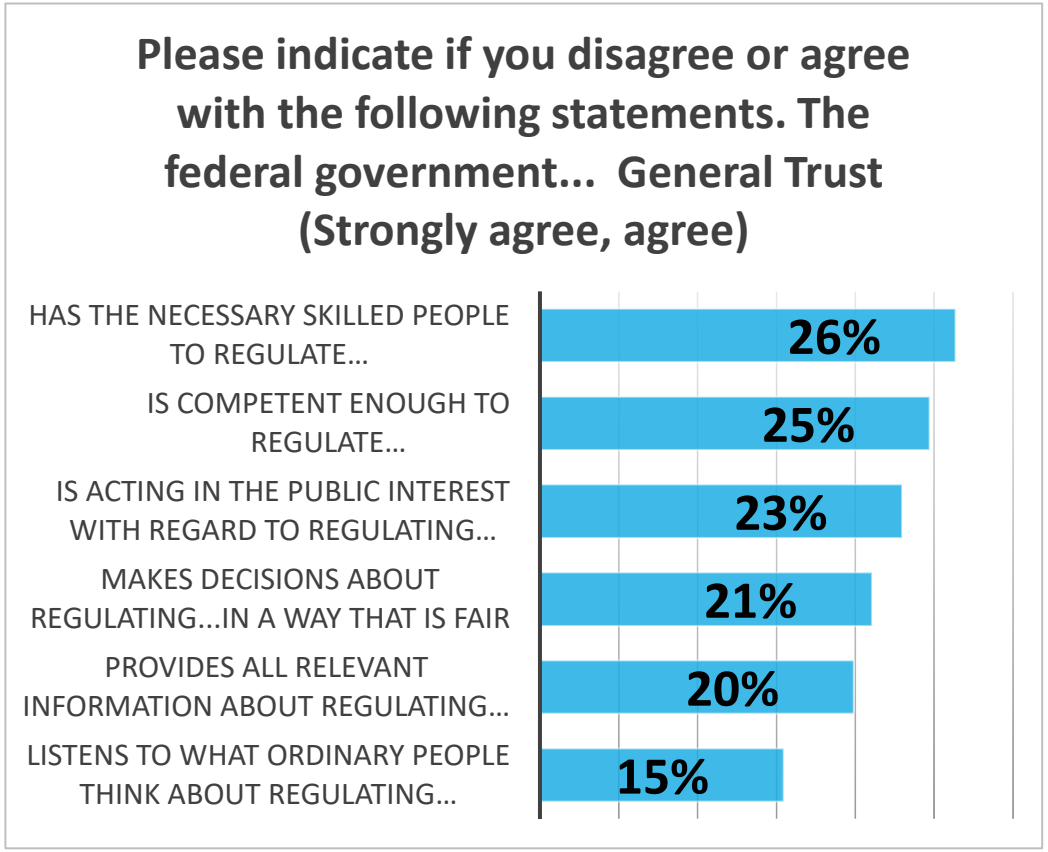
Measure trust in stakeholders, general trust and skepticism of government, and perception of fairness and acceptability of clean electricity standard regulations after no exposure to narratives or exposure to one of the two narratives; demographic highlights for statistically significant

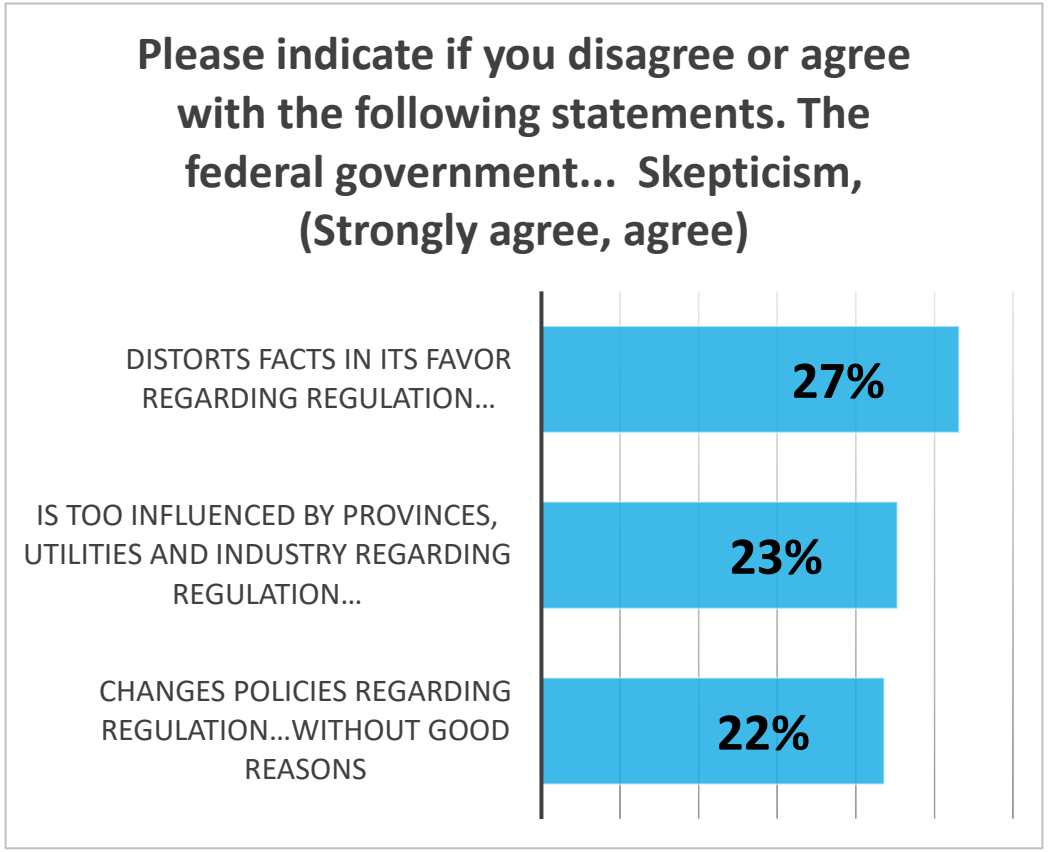
Trust is a multi-dimensional concept

Asking if something is fair or unfair misses important nuance in how people evaluate fairness

Multi-dimensional trust of federal government ability to regulate a non-polluting electricity system

Low levels of general trust/skepticism





Narrative experimental results

Strategic framing experiments are limited in their capacity to generate change in a few seconds. Results are suggestive. The only thing that influences is consistent, long-term messaging

Focus groups informed survey narratives

Finding a pathway to engagement balancing the need for clear, factual, realistic statements without triggering arguments, skepticism, resentments:

https://www.conservationcouncil.ca/wp-content/uploads/2022/03/Electricity-Focus-Group-2022-Report-Final.pdf

Survey: Experimental narratives informed by focus groups

NARRATIVE #1

- Leans self-referencing (intrapersonal effects, e.g., cost of living)
- Climate change matter of fact
- Suggests general momentum for renewable energy
- No absolutes, uses range of #s
- Ends with fairness

NARRATIVE #2

- Leans collective referencing (interpersonal effects, e.g., social and personal benefits)
- Speaks to climate change cause, effects
- Uses absolutes/years, no specific $ references, no numbers
- Ends with fairness

Both narratives increase fairness perceptions, but self-referencing narrative also increases unfairness

SELF REFERENCING

- More unfair (16%)
- More personally unfair (I will be worse off compared to others, 24%)

COLLECTIVE

- Less unfair (9%)
- Less personally unfair (I will be worse off relative to others, 19%)

Both narratives increase acceptability

SELF REFERENCING

- Higher acceptable score (44%)
- Highest unacceptable score (14%)

COLLECTIVE

- Highest acceptable score (46%)
- Lowest unacceptable score (8%)

Six fairness outcomes: Proportional outcomes a core value?

Table 6. Post experiment fairness outcome evaluations		Control	Self-referencing	Collective
Still thinking about the federal government's plan to regulate electricity suppliers so that by 2035 they produce little to no greenhouse gas emissions, how strongly do you disagree or agree with the following statements strongly do you disagree or agree with the following statements.	People with low incomes will be affected more than people with high incomes	43%	45%	44%
	People who consume the most electricity will be affected most strongly	39%	38%	40%
	Nature, the environment, and future generations will be protected	31% ↓	38%	38%
	My financial situation will get worse	29%	31%	28%
	I will be worse off compared to others	19%	24% ↑	19%
	Everybody will be affected to the same extent	19%	22%	22%

Collective narrative: cross-party, cross-cultural Self-referencing less fair, acceptable suburban

SELF REFERENCING

- Fairness:
  - Positive influence:
    - Greens and the NDP
  - Negative influence:
    - Suburban dwellers and visible minorities
- Acceptable:
  - Positive influence:
    - Greens, ON, AB, NLFD, rural dwellers
  - Negative influence:
    - NB, PEI, suburban dwellers

COLLECTIVE

- Fairness:
  - Positive influence:
    - Liberals, Conservatives, Undecided voters, Bloc,
    - City, rural dwellers, BC
    - Francophones, Indigenous
- Acceptable:
  - Positive influence:
    - Liberals and Conservatives (both narratives close), People's Party, and Bloc
    - Francophones, Indigenous, visible minority

To avoid triggering debate, skepticism…

Recommend Language	Avoid absolutes (e.g., one solution, cleaner)
	Minimize debates about #s or years (range, action now)
	Use comparatives (“wind and solar are cheaper than coal, oil, gas and nuclear”)

To avoid triggering debate, skepticism…

Recommend Language	Speak to fairness outcomes
	Practice communicating momentum (don't "sound like a politician")
	Further test Sharing, Security and Sovereignty frames relating to transmission

Collective action problems best served by collection action narratives

Electricity made by burning coal, oil, and gas pollutes the air and makes weather extreme. We see how floods, heatwaves, and forest fires harm the health and safety of Canadians. Scientists tell us the world has to change how we use energy now if we are to keep people and nature safe. One way to solve climate change, is to build non-polluting sources of electricity to power electric vehicles and transit systems, our homes and businesses.

We need billions of dollars of investment to renew Canada's electricity system. Electricity made using wind turbines is cheaper than using coal, oil, gas, and nuclear. When transmission lines connect provinces, non-polluting power reliably reaches Canadians.

To keep power bills affordable though, we must use electricity efficiently. We can pay less to power an electric vehicle, compared to a gasoline vehicle. Securing these energy savings costs money. Canadians need financial incentives so electric vehicles and retrofitting homes are affordable. We need to train workers so we have the expertise to retrofit homes and businesses. We also need to ensure citizens and communities have a say about where renewable energy projects and transmission go, the size of projects, and have a chance to partner and profit from projects.

Stand for fairness to increase acceptability

Recommendations Framing & policy	Define fair especially relative to others, future generations, nature
	Protect low-income households; Progressive effects (proportional to contribution to problem; income)
	Defend, demand communities/citizens rights to access, influence, education and expertise

Build trust

Recommendations Framing & policy	
	Build trust in implementing institutions?
	Demand transparency, public input, open access to information, enforcement to raise government trust
	Challenge industry/utility players (proportional to contribution to the problem and to income)

Build trust

Recommendations Framing & policy	Studies, including ours, show a strong increase in trust in friends and family above institutions, nearing par with scientists. What are the implications?
	Just or fair transition: Fair transition preferred: Atlantic Canadians, Conservatives (but close), Greens, Bloc); Just transition preferred: ON, SK/MN, NDP and Liberals (close) Environics for EcoAnalytics (2022)
	Address all six fairness evaluations (distributive justice), as well as recognition and procedural justice in policy and program design

Federal implementation of a clean electricity standard for net zero grid 2035

Recommendations Framing & policy	Tie federal $ to fairness outcomes, including minimizing rate impacts, increasing access to retrofits for households, low-to-moderate income families
	Strengthen transparency and effectiveness of equivalency agreements; require provincial legislative and policy reform (electricity and utility board acts, energy policy updates, electrification strategies
	Require community benefits agreements, including potential for financial partnership, and community/citizen access to information, standing and participation in consultations

Next steps

In-field this summer	Case studies of two failed wind projects in Northern NB; contrasted with successful FN projects and Saint John Energy
	Two full-time interviewers in field in Belledune, Anse Bleu and Pokeshaw NB
	Goal is to cross-check fairness results and to prepare at least two case studies on how, and how not, to propose, build renewable and transmission projects

Discussion: How do we apply these messaging insights to electricity policy and campaigns to sustain public support?

Appendix

RECORDING: HTTPS://WWW.CONSERVATIONCOUNCIL.CA/RECORDED-WEBINAR-FACTORS-AFFECTING-SOCIAL-ACCEPTANCE-OF-RENEWABLE-ENERGY-AND-TRANSMISSION-PROJECTS/

FOCUS GROUP REPORT: HTTPS://WWW.CONSERVATIONCOUNCIL.CA/CLIMATE-PUBLICATIONS/

Self referencing narrative

One solution to climate change is to use non-polluting electricity to power vehicles, homes and businesses. Electricity made using wind and solar is cheaper than using coal, oil, gas, and nuclear. To deliver cleaner electricity across Canada, we must renew Canada's electricity system. Renewing Canada's electricity system will be hard work, but we are already building wind and solar projects today, creating jobs for workers and economic benefits.

In addition to building out local and regional renewable energy supply, we need to use electricity efficiently to keep the cost of living down. We have the expertise to retrofit homes and businesses so they use 30 to 50 per cent less energy than today. Shifting to an energy-efficient or electric vehicle can save drivers even more, compared to the average gasoline vehicle. It does cost money up front, however, to secure these energy savings. To help Canadians, we need financial incentives so electric vehicles and retrofitting homes are affordable.

To build the social support needed to modernize Canada's electricity system, we must ensure citizens and communities can contribute to decisions about renewable energy and transmission project location, the size of projects, and have a chance to partner and profit from renewing our electricity system.

Collective referencing narrative

Electricity made by burning coal, oil, and gas pollutes the air and makes weather extreme. We see how floods, heatwaves, and forest fires harm the health and safety of Canadians. Scientists tell us the world has less than 10 years to change how we use energy if we are to keep people and nature safe. To solve climate change, we need non-polluting sources of electricity to power electric vehicles and transit systems, our homes and businesses.

We need billions of dollars of investment to renew Canada's electricity system. Electricity made using wind turbines is cheaper than using coal, oil, gas, and nuclear. When transmission lines connect provinces, non-polluting power reliably reaches Canadians.

To keep power bills affordable though, we must use electricity efficiently. We can pay less to power an electric vehicle, compared to a gasoline vehicle. Securing these energy savings costs money. Canadians need financial incentives so electric vehicles and retrofitting homes are affordable. We need to train workers so we have the expertise to retrofit homes and businesses. We also need to ensure citizens and communities have a say about where renewable energy projects and transmission go, the size of projects, and have a chance to partner and profit from projects.

Uni-dimensional trust results not as dire as first appear?

Soft score high (slightly trust, neutral, slightly distrust) and trust is greater than distrust

	Trust/distrust	Soft score
•Friends and family	17 X trust	41%
•Academics and universities	7 X trust	51%
•Energy industry associations	3 X trust	56%
•Electrical utilities and electricity providers	2.9 X trust	53%
•Retailers of electronics, lighting, appliances	2.8 X trust	66%
•Environmental groups	2.5 X trust	48%
•Energy regulators	2.3 X trust	60%
•Government departments	2 X trust	54%

Multi-dimensional trust: General trust/skepticism

Soft scores high (slightly agree, neutral, slightly disagree); general trust greater than distrust except for listening and providing information; people twice as likely to be skeptical than not

	Agree/Disagree	Soft score
Provides all relevant information about regulating…	3.3 X disagree	57%
Distorts facts in its favor regarding regulation…	2.3 X agree	55%
Changes policies...without good reasons	2.2 X agree	59%
Is too influenced by provinces, utilities and industry…	2.1 X agree	59%
Has the necessary skilled people to regulate…	2 X agree	54%
Listens to what ordinary people think…	1.6 X disagree	55%
Is competent enough to regulate…	1.6 X agree	55%
Makes decisions about regulating…in a way that is fair	1.4 agree	58%
Is acting in the public interest with regard to regulating…	1.4 agree	56%

Indigenous consultation processes a model

“So for me, the community pretty much should always have the say, right? So St Mary's First Nation? Yeah. So in my community, we kind of reach out to the whole community in various ways. So we have the newsletter that we'll send out to the whole community in hopes that everybody can see the news that we're putting out. Or we'll have elder sessions where we'll meet with community elders to see what their thoughts on it like, see if there's anything that we might be doing to change traditions or anything like that, We'll also have youth meetings to see what the youth think… We'll have community engagement sessions where anybody can show up and then we'll tell you and talk to you about what we have planned going on. So that way it's a more informed process, right? Recently, they started to take into account the women's perspective on that as well, because the women are very important in my culture.”

Why focus groups?
To hear the voice of someone living with wind

I live in Pincher Creek. I don't know if any of you know anything about Pincher Creek, but it is windy about 99% of the time. It is honestly that windy and we've got the windmills to prove it. So when it comes down to whether or not I support or oppose the development of renewable energy in our community, I'm answering as a question of what does it do to our community? What does it do to the environment around us? What effect does them building those windmills have on the community? And as much as we love to say, yeah, it's positive. We don't use that energy. The energy coming from the windmills has nothing to do with Pincher Creek. They're just here. They're in our view to look at them every day. Truth be told, when you get a big wind farm next to the highway, it causes drifting on the highway. It does have an effect on the local community, right? The land gets destroyed. Farmers, yeah, they make deals with these big companies. They get paid to have the windmills on their property, but they can never use that pasture the same way they used to be able to. There are now roads through it. These wind-farming companies or wind-farming employees have to be able to come on site to maintain the windmills. It just really changes the way we do things around here, and it does have a positive effect. Don't get me wrong, but it also does have a lot of other unexpected effects on the community as a whole.

If I were to take you out on my back deck, I actually happen to live where you can see them all and in any direction. You look out my house, you can see windmills. They're everywhere. Yeah, they're everywhere. Yeah, it's million dollar views littered with giant windmills that blink red all night long. For every single one of them. All night long. So you got to get used to them. They take a little getting used to and they are actually noisy.

Focus groups explored social acceptance: Defining terms using academic justice lens

Social acceptance:

"a favourable or positive response, including intention, behaviour and – where appropriate – use) relating to a proposed or in-situ technology or socio-technical system, by members of a given social unit (country or region, community or town and household, organization."

Recognition justice:

- individuals fairly represented and the right to participate in decision-making processes free from harm

Procedural justice:

- individuals have equitable access to decision-making processes

Distributional justice:

- costs and benefits shared

"In contrast to the traditional 'decide–announce–defend' strategy of energy development, such work encourages increased consultation, engagement and collaboration," (Boudet 2019).

Focus group discussions of narratives suggested…

- Avoiding absolutes
- A sweet spot for details
- Confusion about climate change references
- Using comparisons
- Mixed messages on time references
- Challenges with demonstrating momentum
- Avoiding national averages to describe electricity system

- "one solution" versus "the solution"; "cleaner" versus clean
- specifics but not too many; range for numbers
- 'We know all this" for some with cause of climate change lede (esp. Western males but not females). Refer to climate change or solutions lede?
- "wind and solar are cheaper than coal and oil"
- "less than 10 years"; renew the electricity system in 10 to 15 years," or "we need to do X now"?
- High-level statements challenged ("sound like a politician"), but hard to be specific with national narrative
- local/regional differences to localize challenges and opportunities (NS participants shocked at level of coal use to power electricity in their province)

Self-referencing narrative = highest unfair; Collective narrative = lowest unfair

- Control group: Less likely to think the policy is very fair; fairness perception 2.3 X unfairness
- Self-referencing narrative: Lower neutral score; more unfair; fairness perception 2.4 X unfairness
- Collective referencing narrative: Fairness perception 4.2 X unfairness; unfair score 7% lower than for Exp #1
- Soft scores (Control, 48%, Exp #1, 42%, Exp #2, 50%)

Table 4. Post experimental fairness		Control	Self-referencing	Collective
As part of its climate action plan, the federal government plans to regulate electricity suppliers so that by 2035 they produce little to no greenhouse gas emissions. The policy will also increase the size of the overall electricity system in Canada to supply the power needed for electric vehicles, trucks and transit systems. Investments could increase power rates, but household power bills will not increase if homes have energy efficiency upgrades, and vehicles shift from gasoline to electricity. ***How fair is this policy measure to you?***	Very fair	9% ↓	12%	14%
	Fair	25%	26%	24%
	Slightly fair	18%	17%	19%
	Neutral	21%	16% ↓	22%
	Slightly unfair	9%	9%	9%
	Unfair	7%	7%	4% ↓
	Very unfair	8%	9%	4% ↓
	Not sure	3%	4%	4%
	NET: % FAIR (6,7)	34%	39%	38%
	NET: % UNFAIR (1,2)	15%	16% ↑	9% ↓
	MEAN	4.5 ↓	4.6	4.8 ↑

Collective narrative = highest acceptability

- Control group: Lowest acceptable score. Acceptability 3.3 X unacceptability
- Self-referencing narrative: Highest unacceptable score. Acceptability 3.1 X unacceptability
- Collective narrative: Lowest unacceptable; acceptability 5.8 X unacceptability
- Soft scores (Control, 45%, Exp #1, 40%, Exp #2, 43%)

Table 5. Post experiment acceptability		Control	Self-referencing	Collective
Still thinking about the federal government's plan to regulate electricity suppliers so that by 2035 they produce little to no greenhouse gas emissions, how acceptable is this policy measure to you?	Very acceptable	14%	15%	16%
	Acceptable	25%	29%	30%
	Slightly acceptable	20%	18%	18%
	Neutral	16%	16%	17%
	Slightly unacceptable	9%	6%	7%
	Unacceptable	4%	7% ↑	5%
	Very unacceptable	8% ↑	6%	3% ↓
	Not sure	3%	2%	3%
	NET: % ACCEPTABLE (6,7)	39% ↓	44%	46%
	NET: % UNACCEPTABLE (1,2)	12%	14%	8% ↓
	MEAN	4.7 ↓	4.8	5.0 ↑

People unsure about clean electricity standard fairness

	Agree/Disagree			Softscore		
	Control	Exp #1	Exp #2	Control	Exp #1	Exp #2
People with low incomes will be affected more than people with high incomes	6.1 X	6.4 X	7.3 X	43%	43%	44%
People who consume the most electricity will be affected most strongly	4.9 X	9.5 X	6.7 X	48%	50%	49%
Nature, the environment, and future generations will be protected	3.1 X	4.8 X	4.8 X	55%	49%	50%
My financial situation will get worse	2.9 X	3 X	2.5 X	54%	52%	55%
I will be worse off compared to others	1.5 X	1.6 X	1.4 X	59%	56%	60%
Everybody will be affected to the same extent	-1.2 X	1.2 X	1.2 X	54%	53%	54%

Focus group guiding questions

How strongly do you support or oppose the development of renewable energy in your community? Rate from 1 – 10 where 10 is completely support and 1 is no support at all.

What factors would encourage and discourage people in your community to consider a project that was generating renewable energy?

Do you feel differently about wind or solar? Wind can be on land or offshore. Is it easier to support offshore wind than onshore?

How much influence should communities or citizens have over where projects are located?

What benefits, if anything (financial, community investments or any other kind of benefits), should homeowners, communities, indigenous communities expect when renewable projects are proposed?

If we increase the amount of renewable energy that we produce in the province, do you think the overall cost of electricity will increase, decrease or stay much the same?

Are there ways to renew the electricity system while keeping power bills affordable?

If you had access to incentives to help you cut energy use in your home and get into an electric vehicle do you believe it is possible to have lower power bills even if our rates went up?

Are there any other suggestions you have that could help you to have lower power bills even if the actual rate increased?

How comfortable are you with building transmission lines to connect your provinces and trade hydro and other renewable electricity to phase out more polluting sources of electricity?

What are your concerns about transmission lines? Which are the key ones? What would help you deal with those concerns?

There are four (or three) possible arguments described on this page. POLL – Which one does the best job to increase your willingness to see renewable energy or transmission in your area?

Survey

1800 Canadians, in field April 1st to 8th, 2022, online panel, Narrative Research

Region	Sample size	Regions
NL and PE	75	300
NB	110	
NS	115	
Ontario	600	600
Quebec	300	300
Manitoba/Saskatchewan	200	200
British Columbia	200	400
Alberta	200	
Total	***1800***	***1800***

Tested two narratives using experimental design (control, 2 experimental groups), effects on perceptions of fairness, acceptance of clean electricity standard 2035

Measured trust in electricity stakeholders, general trust and skepticism in federal government ability to "regulate a non-polluting electricity system"

Demographics: gender, province, political ideology, vote preference, age, income, education, community type, Francophone, Indigenous, visible minority