

Framing the transition to renewable energy

PANORAMIC SURVEY 2018:
ANALYTICAL BRIEFING

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Executive Summary

The spring 2018 EcoAnalytics Panoramic Survey of 3,000 Canadians included an experiment to assess the influence of six frames on support for the energy transition. We find that baseline support for the energy transition is strong, but that baseline willingness to engage in behaviours supportive of this transition is relatively low, particularly when it comes to paying more for the expanded production of renewable energy. Experimental results indicate that all but one frame positively influences belief that transitioning to renewable sources of energy is a good idea, and that people exposed to the “Health” frame exhibit the greatest support, compared to a control group. However, the frames tested in this experiment are much less effective in terms of altering participants’ willingness to engage in behaviours supportive of the energy transition.

One frame influences belief that renewable sources of energy are a good idea: “Health”

Factors that positively influence support for the energy transition include having an egalitarian worldview, higher levels of trust in institutions and environmental groups, identifying with the environmental movement, believing that fossil fuel development should either be phased out or be consistent with climate change commitments, and feeling guilty when using a car. Negative influences include holding a market-individualistic worldview, not feeling obligated to change one’s lifestyle for the sake of the environment, and believing it makes little sense to leave Canadian energy resources in the ground.

Compared to other Canadians, British Columbians are most receptive to the “Crisis” and “Hard Work” frames, while “Can-Do” significantly increases support for the energy transition in the Prairie provinces. The Crisis frame backfires among supporters of the Green Party of Canada, while the “Freedom” frame attenuates negative attitudes toward energy transition associated with anti-Green Canadians. Overall, we suggest talking to Canadians about the energy transition in a way that ties together issues of health, Canadian know-how, and economic opportunity. We also recommend doing more research on the best language to use when referring to the energy “transition.”

Introduction

The EcoAnalytics 2018 Panoramic Survey of 3,000 Canadians included an experiment that tested six narrative frames for communicating about the transition from fossil fuels to renewable forms of energy. This assessed whether exposure to any one of the six frames influences belief about the merits of this transition and/or willingness to alter one’s behaviour in support of the transition. The choice of frames was informed by earlier studies by the Frameworks Institute and McAllister Research for the David Suzuki Foundation (2007), EcoAnalytics research (2015–2018), recent polling by firms such as Abacus Data and Nanos, and discussions among EcoAnalytics’ partners.

Issue framing is a strategy used by communicators to persuade an audience to support a particular agenda¹. It involves selecting some aspects of a perceived reality to make them more salient, in such a way as to promote a particular problem, definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described². Other scholars describe a “frame” as a metaphor, or cognitive pattern³—a mental construct by which we understand complex issues.

Framing effects are thought to occur through one or more psychological processes that include “increasing the accessibility of a belief in evaluating a policy (priming effect); creating a new connection between a belief and policy support; and/or increasing the strength of an existing link (applicability effects)”⁴. Niederdeppe and others (2014) argue that, especially in competitive environments where an issue is framed by multiple, competing interests, framing can change beliefs (have a “persuasion effect”). Communicating about climate change or its solutions, such as carbon pricing and transitioning to renewable energy, inevitably takes place in a competitive framing environment.

People with weak opinions are affected most by framing

Our experiment was not designed to analyse the psychological pathways associated with framing effects. It is helpful to know, however, that there are multiple pathways through which frames can have an influence, and that in a competitive communications environment people with weak or strong opinions, or no opinion, react in different ways. Scholars⁵ find, for example, that people with weak opinions are affected most by framing. With energy development issues increasingly contested in Canada, opinions may be forming rapidly.

In studies conducted in 2015 and 2016, researchers found Canadians ranked energy issues low on their list of priorities and felt they were not knowledgeable about them⁶. In 2018, however, a Nanos poll for the Positive Energy Project at the University of Ottawa suggests Canadians are generally interested in energy issues and feel somewhat knowledgeable about them⁷. This is important context as people with more sophisticated knowledge and strong opinions might be less susceptible to framing effects, relative to those with weaker (or non-existent) opinions.⁸

Experiment

Our sample of 3,000 Canadians was divided into six experimental groups and a control group. Each included approximately 400 people on an unweighted basis (not weighted according to Canadian census proportions). All 3,000 survey participants were asked the same set of questions. One question asked whether a respondent believes the energy transition is a good or bad idea; another measured the respondent's willingness to adopt a range of behaviours consistent with the energy transition; a third set of questions examined whether exposure to a frame (e.g. Health) in fact increased agreement with the idea being manipulated in the narrative (e.g. renewable energy is good for health). People in the control group were also asked these questions but were not exposed to the experimental frames. As a result, these "manipulation checks" can help ascertain the extent to which people in experimental groups "took" the treatment, as well as to establish a baseline to explore which frames resonate most with "untreated" respondents in the control. All of this allows for more careful interpretation of results.

The frames and their associated narratives were designed to open with a meta-narrative, followed by an explanatory narrative, and then to close with a sub-narrative. The meta-frame (opening), sub-frame (closing), and connecting narratives were as follows:

Can-Do:

- Opening Meta-Frame: Canadians know energy. We have the can-do attitude and skills needed to build the renewable energy system almost all Canadians want.

- Narrative: Transforming Canada’s energy system from one that relies on coal, oil and natural gas to one that relies mostly on solar, wind and other renewable energy sources depends on installing modern technologies to generate, store and use electricity.
- Closing Sub-Frame: Canadians have the skills and know-how to build and operate this new energy system if given the chance through training and planning.

Freedom:

- Opening Meta-Frame: Renewable energy gives Canadians freedom and choice.
- Narrative: Who doesn’t want to pay less to their utility, or to know that the lights will stay on during a power outage? Shifting Canada’s energy system from one that relies on coal, oil and natural gas to one that relies mostly on solar, wind and other renewable energy means we can choose to produce power to meet our own needs or choose to stay connected to the electricity grid.
- Closing Sub-Frame: Either way, renewable energy gives us more freedom, independence and choice.

Crisis:

- Opening Meta-Frame: We are facing an environmental crisis.
- Narrative: Burning coal, oil and natural gas is rapidly warming the planet leading to more intense wildfires and storms causing flooding. If we don’t take urgent action soon, the planet will become less safe for people, plants and animals. By working with nature, not against it, we can harness clean, natural sources of renewable energy.
- Closing Sub-Frame: Making this transition away from fossil fuels like coal, oil and natural gas is a moral responsibility we owe to our children and grandchildren so that the planet they inherit is healthy and safe.

Hard Work:

- Opening Meta-Frame: We all know change is hard work.

- Narrative: Whether we are changing our personal lives or society, it takes commitment and determination to see change through. Making the transition to a clean energy system will involve some costs in the short-term.
- Closing Sub-frame: But that’s the kind of investment we need to see Canada through the transition from a polluting energy system dependent on coal, oil and natural gas to one efficiently powered by clean renewable energy.

Health:

- Meta-Frame: Burning oil, coal and gas is not good for our health.
- Narrative: These energy sources pollute the air we breathe, contaminate the water we drink, and unbalance the climate we depend on. Renewable energy using solar, wind, hydro or other technologies is a clean way to deliver the power we need.
- Closing Sub-Frame: Renewing our energy system lowers air pollution, protects water, and helps slow climate change. Renewable energy protects our health.

Economic Opportunity:

- Meta-Frame: The most competitive economies are now heavily investing in developing their clean energy sectors.
- Narrative: Shifting to more energy-efficient and clean forms of renewable energy to power our economy is the surest way to maintain Canadian jobs and create new economic opportunities for Canadians. Canada can accelerate the renewal of its energy system by developing its abundant renewable energy sources.
- Closing Sub-Frame: And in doing so, we join the growing group of countries creating opportunities for workers, businesses and communities.

We attempted to maintain similar narrative length. The word-count for each of the frames was as follows: Can-Do, 77; Freedom, 69; Crisis, 74, Hard Work, 94, Health, 87; and Economic Opportunity.

Results

We begin by analyzing results within the control group. Since this group was not exposed to any of the above-mentioned narratives, it provides an assessment of baseline (i.e. untreated) attitudes. Next, we look for framing effects across the experimental groups, and assess the efficacy of these frames in shifting opinion on whether the energy transition is a good idea, and willingness to change behaviour in support of the energy transition.

Baseline support

Baseline support was determined by looking at control group responses to the question, “Overall, do you think a transition away from the production, transportation, and use of fuels like coal, oil, gasoline, and natural gas is generally a good idea for Canada, or a bad one?” Response options for this question range from 1 (“extremely bad idea”) to 7 (“extremely good idea”). We find that responses to this question in the control group (in which respondents were not exposed to a frame) tend to be more supportive than unsupportive (Mean = 4.60; Standard Deviation = 1.79). In fact, over a third of these untreated respondents indicate this is either an “extremely good” (18%) or “very good” (16%) idea. Conversely, control group respondents are about half as likely to report believing the energy transition is either an “extremely bad” (9%) or “very bad” (5%) idea for Canada. Those with strong opinions are thus more supportive than unsupportive of the energy transition. Moreover, respondents who support the idea of the energy transition

Respondents who support renewable energy outnumber opponents three to one

outnumber opponents to this idea by a ratio of three to one. This relatively high level of support for the idea of the energy transition in the control group is important to keep in mind, as it may act as a ceiling when looking for the ability of frames to increase public support for the transition.

Next, we examine scores on the willingness to adopt behaviours supportive of the energy transition. All items listed in Table 1 range from a minimum of 1 (“extremely unwilling”) to 7 (“extremely willing”). A mean of below 4 (“neither willing nor unwilling”) thus shows a tendency to be unwilling, while a mean of above 4 indicates a tendency to be more willing. The standard deviation of the mean is a measure of the variability of responses, with lower values indicating that responses

tend to cluster around the mean, and larger values indicating more dispersion. The standard deviation may thus be interpreted as a measure of the representativeness of the mean, with lower values indicative of relatively similar opinions, and higher standard deviations indicative of more variability.

Table 1: Baseline willingness to adopt behaviours in support of the energy transition (control group only)

	<i>n</i>	Mean	Standard deviation	Min-Max
Do things for the environment, even if I'm not thanked or rewarded for my efforts.	418	5.46	1.54	1-7
Change my way of living and habits to help reduce the use of fuels like oil and natural gas.	413	4.91	1.60	1-7
Do what I think is best to limit climate change, even when it is inconvenient for me.	419	4.85	1.52	1-7
Take on responsibilities that will help the transition to clean energy like limiting my car use.	414	4.78	1.69	1-7
Give things up I like doing to reduce my oil and gas consumption.	415	4.43	1.67	1-7
Pay 20% more each month on my utility bill to expand production of renewable energy (e.g. wind and solar).	411	3.03	2.01	1-7

As shown in Table 1, respondents in the control are much more willing to do general “things for the environment” even if they are not thanked, or “change [their] way of living and habits” to reduce use of fuels like oil and gas, then they are to support paying more for the expanded production of renewable energy. In fact, with a mean of 3.03, willingness to pay more for renewable energy is the only item to garner general opposition, though a relatively large standard deviation indicates greater variability in responses to this question.

The survey experiment also included a question designed to measure how people respond to the idea highlighted by each experimental frame (i.e., to test whether reaction to the Health frame was linked to health ideas we asked people to say whether they strongly disagreed to strongly agreed that: “Our reliance on fuels like oil and natural gas is a great threat to the health of Canadians”). If people exposed

to the Health frame more strongly agreed with the idea that health is affected by burning fossil fuels, compared to survey respondents not exposed to the Health frame (i.e., those in the control or those exposed to other frames), then we have greater confidence that this attitudinal difference is in fact driven by exposure to the Health narrative.

The control group responses to the “manipulation” questions help us understand to what extent framing ideas resonate with respondents. To the extent that survey participants have already heard something about the energy transition framed in a certain way, they might be said to have been “treated” before taking the survey. Comparing attitudes toward these questions within the control group thus gives a sense of which frames are most amenable to “priming,” and which cognitive links need further strengthening. Though scholars continue to debate whether such “pre-treatment” ought to dampen (in line with a “ceiling effect”) or amplify (in line with a “priming effect”) the efficacy of framing, this information is important to have at hand, as it facilitates the interpretation of experimental results.

Table 2: Baseline (pre-treatment) attitudes toward experimental frames, control group only

Item	n	Mean	Standard deviation	Min-Max
Change is hard work but the payoffs for transitioning to a less polluting energy system are enormous.	409	5.49	1.43	1-7
Renewable energy technologies like wind and solar give Canadians the freedom and choice they want to produce their own electricity and be more self-reliant.	398	5.21	1.53	1-7
The Canadian workforce has the knowledge, skills and know-how needed to develop and export innovative clean technologies.	390	5.11	1.42	1-7
If we don't act urgently, climate change will make the planet uninhabitable for our children and grandchildren	403	5.10	1.78	1-7
Transitioning toward a cleaner energy system presents Canada with great potential to create new jobs, increase exports and grow the economy.	396	5.09	1.57	1-7
Our reliance on fuels like oil and natural gas is a great threat to the health of Canadians.	400	4.60	1.73	1-7

As shown in Table 2, respondents in the untreated control group are most likely to agree with the idea that the transition is hard work, followed by the idea that the energy transition gives Canadians freedom. The Can-Do, Crisis, and Opportunity questions have similar means, but we note that of the three, responses are more variable for the idea that we are facing a crisis. The Health frame receives the lowest level of support, suggesting that of all the ideas manipulated in the experiment, linking the energy transition to health is the least well-developed.

Framing perceptions of the energy transition

To examine whether and, if so, to what extent Canadian attitudes toward the energy transition are susceptible to framing effects, we first performed an analysis of variance (ANOVA) on our survey experiment. This revealed that the experiment had a significant effect on attitudes toward the energy transition). We then ran pair-wise comparisons and found that five of the six frames significantly increase belief that an energy transformation is a good idea, with Health and Can-Do having the most influence, compared to the control group, followed by Freedom, Economic Opportunity, Crisis, and Hard Work (see also Table 3, Appendix).

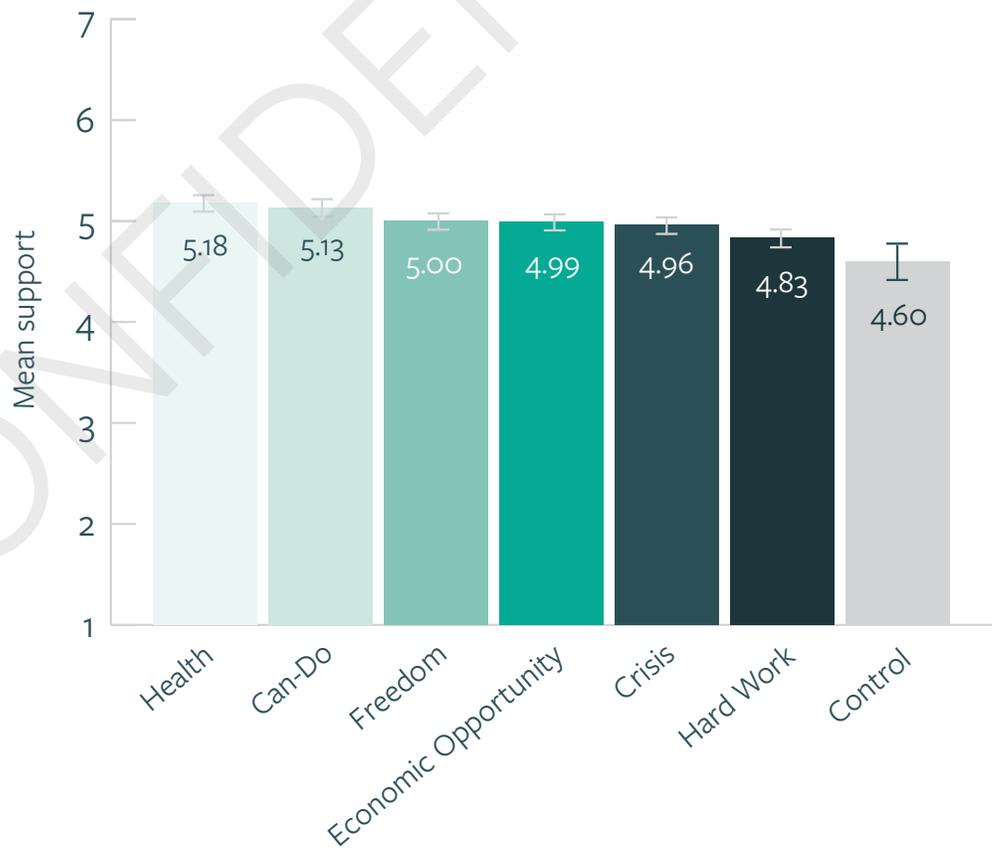
Interestingly, the frame with the largest influence on Canadian attitudes, Health, is also the weakest in terms of cognitive accessibility (Table 2). This suggests that, while linking health benefits to the energy transition is relatively unfamiliar, Canadians generally respond positively to this association when made. The pairwise comparisons done after the experiment further reveal that the Health frame is the only one to obtain a significantly greater score than some of the less successful narratives, such as Hard Work.

Can-do framing can counter the tendency of Saskatchewan and Manitoba residents not to support renewable energy as much as those in other provinces.

We looked at whether some frames resonate more with different sub-groups of the population. Most of this work found no differences in effects across groups. This implies that the Health and Can-Do frames have a positive effect on support for the energy transition across large swaths of the Canadian public.⁹ However, we did find evidence to suggest that these framing effects are moderated, somewhat, by region. Specifically, we find that the Can-Do framing can reverse the negative effect of living in the Prairies (Saskatchewan and Manitoba) relative to other provinces, in terms of believing that the energy transition is a good idea for Canada. When speaking to people in

these provinces, emphasizing that Canadians possess the skills to make this transition happen would seem important. In contrast to the Prairies, we find that British Columbians have more positive attitudes toward the energy transition (compared to all others living outside this province), and that this positive effect of living in British Columbia is amplified when exposed to the Crisis and Hard Work frames. This result suggests that people in BC tend to think differently about the challenge of climate change, and that they are more likely to respond favourably to messages around the transition being hard work that is nevertheless necessary for the sake of protecting the environment, the planet, and future generations. For residents of all other provinces (i.e. Atlantic, Quebec, Ontario, and Alberta) the Health and Can-Do frames consistently outperform the others.

Figure 1: Mean support for energy transition across experimental groups

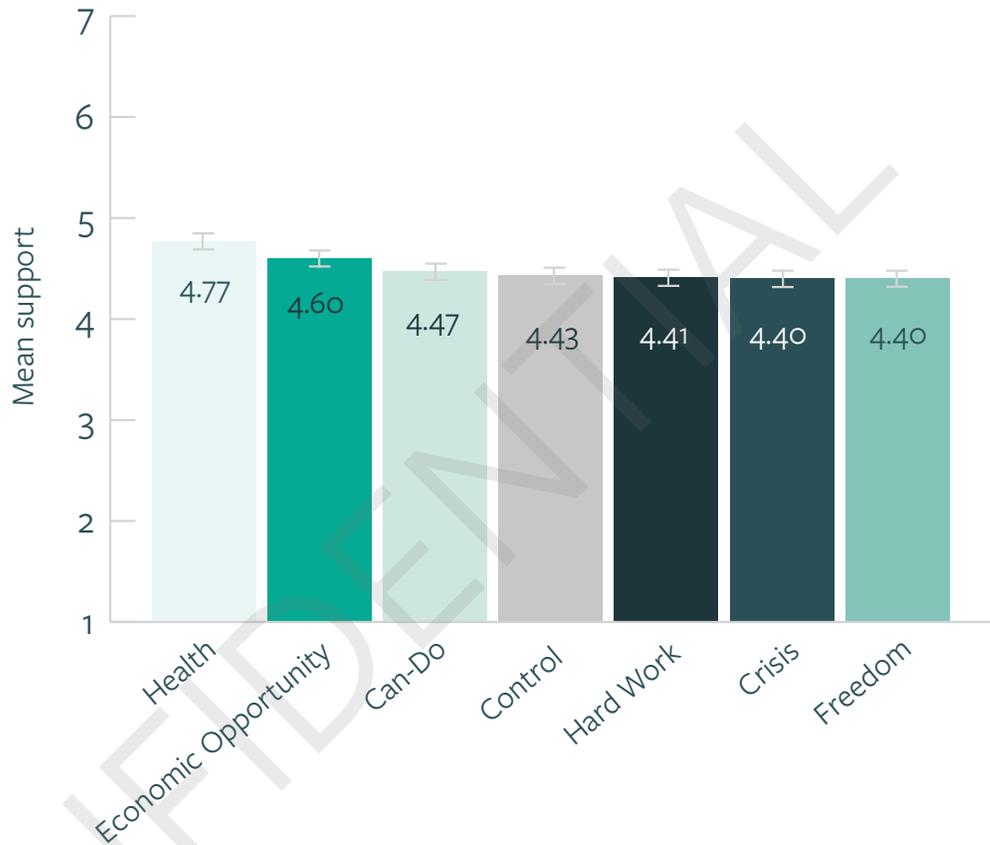


We also estimated a series of regression models to identify the correlates of support for the energy transition, controlling for treatment group assignment and a host of other variables. We find that attitudes toward energy and environmental issues (e.g. support for phasing out fossil fuel production within next decade), strength of pro-environmental norms (e.g. guilt when using car), and who someone trusts (e.g. trust in ENGOs) have more influence on support for the energy transition than demographic factors like age and income. These factors are strongly related to egalitarian values, which is also strongly predictive of support for the idea of the energy transition. Conversely, market-individualistic values, weaker pro-environmental norms (e.g. “I don’t feel obligated to change my lifestyle for the sake of the environment,”) and beliefs about Canadian resources (e.g. “rising demand for oil and gas, it makes little sense for Canada to keep its resources in the ground”) are negatively associated with believing energy transition is a good idea.

Framing behavioural intentions

The experiment was less successful in moving people’s behavioural intentions. Generally, people were neutral or somewhat willing to change behaviours (i.e., scoring 4 or 5, on the 7-point behavioural intention scale). Exposure to Health and Economic Opportunity increases willingness to “give things up [respondents] like doing to reduce [their] oil and gas consumption” and to “pay 20% more each month on [their] utility bill to expand production of renewable energy (e.g. wind and solar),” but these means are not significantly different from the control. The trends, however, do add support to the conclusion that, overall, the Health frame has the greatest potential to increase support for transforming the energy system.

Figure 2: Mean support for willingness to “give up things I like doing” across experimental groups



As shown in Figure 2, the Health frame appears to increase people’s willingness to give up things they like doing. The difference in means between the Health and control groups is, however, not statistically significant.

Figure 3: Mean support for willingness to pay more for renewable energy across experimental groups

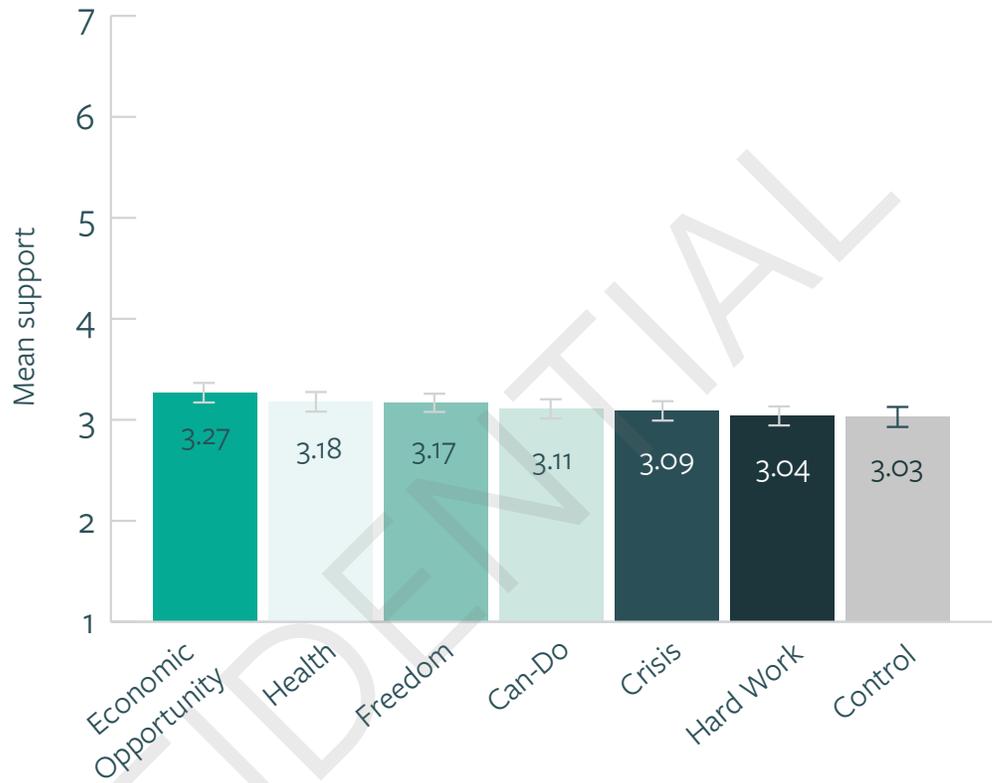


Figure 3 shows that people’s willingness to pay more for the expansion of renewable energy is especially difficult to change. Average experimental and control group scores all fall at or around a mean of 3 (unwilling). Moreover, the proportion of respondents reporting they are extremely unwilling to pay more for renewable energy changes little between the control group (38%) and the most persuasive Economic Opportunity frame (32%).

We performed the same analyses across each behavioural intention question discretely, as well as combined into an additive index, and found no significant differences across experimental groups and the control. These results underscore the challenge of changing people’s behaviours. We also ran a series of regression models to get a better handle on the correlates of people’s willingness to change behaviour. Results from these more elaborate models (using the additive behavioural index) indicate that, when controlling for other variables, the Health

frame is associated with significantly greater willingness to engage in behaviours supportive of the energy transition. Other influences on willingness to engage in these behaviours include egalitarian values, trust in government and environmental groups, identification with the environmental movement, voting for the Green Party of Canada, a sense of obligation to do what is right for the environment, and support for phasing out the production of fossil fuels and respecting Canada’s climate change commitments.

Discussion

We set out in this experiment to explore which, if any, frames influence opinion about the energy transition and willingness to behave in ways supportive of that transition. To summarize our results:

- We find that five out of six frames increase positive evaluations of energy transition. Overall, the Health, Can-Do and Economic Opportunity frames are most effective at stimulating positive evaluations of energy transition.
- The experiment is less effective at influencing willingness to alter behaviour, but the trend is positive for willingness to give up oil and gas consumption and to pay more for renewable energy after exposure to the Health, Economic Opportunity, and Can-Do frames.
- Some regional differences deserve consideration: British Columbians were most influenced by the Crisis frame and opposition in the Prairies was partially weakened by the Can-Do frame.
- The role of egalitarian values—and associated characteristics around trust and climate change attitudes—suggests that supporters of the energy transition should pay attention to maintaining perceptions that the energy transition is fair for all Canadians.

Future research might explore more thoroughly the psychological pathways associated with framing results to learn more about why people rejected or accepted a frame. In the meantime, these results and extensive previous research and evidence, indicate that people motivated by environmental values in their life choices (i.e., holding environmental values and who have activated pro-environmental norms) are more supportive of environmental policies¹⁰. Taking the long view requires nurturing environmental values through education, programming and communications that connect people to nature, nurture environmental values, and activate pro-environmental norms, while removing barriers to environmentally supportive behaviours.

From a more immediate communications perspective, we know that one-time priming does not generally have long-lasting effects¹¹. To influence public opinion in support of the energy transition and related behaviours we will need repeated, consistent and persistent framing by trusted messengers. The highly competitive context in which communicators on the topics of climate change and the energy transition operate demands nothing less. Communicators might also wish to employ egalitarian themes, as a way of activating support from segments with these values.

We therefore have three helpful frames to work with and they can be combined into a meta-narrative. Our results suggest that Health motivates support for renewing the energy system. To create a sense of social agency, emphasize Can-Do, and close the meta-narrative with Economic Opportunity. The integrated meta-narrative, with connective sentences, could read as follows:

Burning oil, coal and gas is not good for our health. These energy sources pollute the air we breathe, contaminate the water we drink, and unbalance the climate we depend on. Renewable energy using solar, wind, hydro or other technologies is a clean way to deliver the power we need. Renewing our energy system lowers air pollution, protects water, and helps slow climate change. Renewable energy protects our health. The good news is that we have what it takes to renew our energy system.

Canadians know energy. We have the can-do attitude and skills needed to build the renewable energy system almost all Canadians want. Transforming Canada's energy system from one that relies on coal, oil and natural gas to one that relies mostly on solar, wind and other renewable energy sources depends on installing modern technologies to generate, store and use electricity. We can mobilize the skills and know-how to build and operate this new energy system—with adequate planning and training.

This is where the good jobs are headed. The most competitive economies are heavily investing in their clean energy sectors. Shifting to more energy-efficient and clean forms of renewable energy to power our economy is the surest way to maintain Canadian jobs and create new economic opportunities for Canadians. Canada can accelerate the renewal of its energy system by developing its abundant renewable energy sources. And in doing so, we join the growing group of countries creating opportunities for workers, businesses and communities.

One last note: the three most effective frames in our experiment do not use the words “energy transition”. Instead, they use words like: “renewing”, “renew”, “transforming”, “shifting”, and “accelerate renewal”. These words suggest a building on, or building up, from our existing strengths and foundations in ways that the word “transition” does not. Transition implies leaving behind, suggesting change that can be perceived as unfair, or otherwise make people uncomfortable. This is important, especially as egalitarian values seem to underpin energy transition support.

The three most effective frames in our experiment do not use the words “energy transition”

The three most effective experimental frames identified here are designed to activate pride and confidence and are consistent with a growing body of research by Climate Outreach¹² and others showing that people are sensitive to loss frames¹³. By contrast, the Crisis and Hard Work frames reference the energy transition, and have the weakest (aggregate) effects. Without further testing it is hard to know whether use of “transition” was a factor in the weak performance of these two frames. The term “transition” was also employed in some of the specific questions and may have influenced results. This will be tested in future work so that frames can be refined with the most persuasive language.

Appendix 1

Table 3. Mean differences for control and experimental groups (unweighted; Tukey HSD)

	Mean	Mean Difference					
	Control	Can-Do	Freedom	Crisis	Hard Work	Health	Economic Opportunity
Overall, do you think a transition away from the production, transportation, and use of fuels like coal etc. is a [good/bad] idea for Canada?	4.60	.529***	.398*	.364*	.228	.583***	.393*
How [willing/unwilling] are you to do the following:							
Give up things that I like doing to reduce my oil and gas consumption	4.43	0.039	-.029	-.031	-.019	.338	.174
Take on responsibilities that will help the transition to clean energy like limiting my car use.	4.77	-.076	-.053	-.196	-.112	.038	-.007
Do things for the environment, even if I'm not thanked or rewarded for my efforts.	5.46	-.034	-.121	-.151	-.108	-.038	-.094
Do what I think is best to limit climate change, even when it is inconvenient for me.	4.85	-.061	-.036	-.156	-.108	.057	.032

	Mean	Mean Difference					
	Control	Can-Do	Freedom	Crisis	Hard Work	Health	Economic Opportunity
Change my way of living and habits to help reduce the use of fuels like oil and natural gas.	4.92	-.103	-.087	-.123	-.116	.044	-.009
Pay 20% more each month on my utility bill to expand production of renewable energy.	3.30	.081	.143	.057	.011	.155	.241
<i>Willingness-Behaviour Index</i>	4.59	-.043	-.051	-.110	-.103	.089	-.10

Significance: *p < .1; **p < .05, *** p < .01

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Notes

- 1 Bolsen, T., & Shapiro, M. A. (2018). *The US news media, polarization on climate change, and pathways to effective communication*. *Environmental Communication*, 12(2), 149–163.
- 2 Entman, R. M. (1993). *Framing: Toward clarification of a fractured paradigm*. *Journal of Communication*, 43(4), 51–58, page 52.
- 3 Lakoff, G., & Johnson, M. (2003). *Metaphors we live by*. Chicago: The University of Chicago Press.
- 4 Chong, D., & Druckman, J. N. (2007). *A theory of framing and opinion formation in competitive elite environments*. *Journal of Communication*, 57(1), 99–118. Nelson, T. E., Oxley, Z. M., & Clawson, R. A. (1997). *Toward a psychology of framing effects*. *Political Behavior*, 19(3), 221–246. Niederdeppe, J., Gollust, S. E., & Barry, C. L. (2014). *Inoculation in competitive framing: Examining message effects on policy preferences*, p. 636. *Public Opinion Quarterly*, 78(3), 634–655. Scheufele, D. A., & Tewksbury, D. (2007). *Framing, agenda setting, and priming: The evolution of three media effects models*. *Journal of Communication*, 57(1), 9–20.
- 5 Chong, D., & Druckman, J. N. (2007). *A theory of framing and opinion formation in competitive elite environments*. *Journal of Communication*, 57(1), 99–118.
- 6 Eisler, D. (2016). *Energy literacy in Canada: A Summary*. Retrieved from The School of Public Policy: <https://www.policyschool.ca/wp-content/uploads/2016/03/energy-literacy-canada-eisler.pdf>; Parkins, J., Comeau, L., Stedman, R., & Beckley, T. (2015). *Citizen perspectives on energy issues: National survey 2015*.
- 7 Nanos. (2018). *Positive Energy*. Ottawa.
- 8 Kahan, D. M. (2016). *The politically motivated reasoning paradigm*. *Emerging Trends in Social & Behavioral Sciences*, Preprint, 24.
- 9 We found little evidence of frames resonating more with other specific sub-groups. In other words, the Health and Can-Do frames perform equally well across gender, the ideological spectrum, as well as across the different Shades of Green segments, revealed in analysis of the 2017 Panoramic Survey. The only exceptions include supporters of the Green Party of Canada (who react negatively to the Crisis frame) and Anti-Greens (who react positively to the Freedom frame).
- 10 Steg, L. (2016). *Values, Norms, and Intrinsic Motivation to Act Proenvironmentally*. *Annual Review of Environment and Resources*, 41, 277–292.
- 11 Lakoff, G., & Johnson, M. (2003). *Metaphors we live by*. Chicago: The University of Chicago Press.
- 12 Corner, A., & Clarke, J. (2017). *Talking Climate: From Research to Practice in Public Engagement*. Cham, Switzerland: Palgrave MacMillan.
- 13 Kahneman, D. (2011). *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux.