BEHAVIOURAL SCIENCE AT ECCC:

Program of Applied Research on Climate Action (PARCA)

Behavioural Science and Climate and Environmental Action

The choices of individual Canadians, households and businesses must be part of how we move faster to meet our commitments:

- ✓ reduce greenhouse gas emissions by 40-45% by 2030 and reach net-zero emissions by 2050

- ✓ conserve 25% of land and 25% of oceans in Canada by 2025, working toward 30% by 2030

- ✓ take steps to reduce plastic pollution and waste and build a more circular economy

Behavioural Science can support and advance our plans to get there:

- ✓ Emissions Reduction Plan

- ✓ National Adaptation Strategy

- ✓ Budget commitments

Canada

Expected Impacts of Climate and Environmental Action At Individual/Household Level

In a report published this month, the UK House of Lords Environment and Climate Change Committee estimates that choices by individuals and households are needed for **32%** of emissions reductions up to 2035:

- adopting low carbon technologies
- choosing low-carbon products and services
- Reducing carbon-intensive consumption

In our hands: behaviour change for climate and environmental goals

Statistics Canada found that household consumption and use of goods accounted for **40.9%** of Canadian greenhouse gas emissions in 2018.

A recent report by the UN's Intergovernmental Panel on Climate Change (IPCC) found that the potential of individual choices and actions to reduce greenhouse gas emissions across all sectors is **40 to 70%** by 2050**.**

What is Behavioural Science?

Behavioural science (BeSci) combines insights and methods from psychology, neuroscience and other social sciences **to understand human behaviour and support positive choices**.

It offers an evidenced-based, data-driven approach to understanding **what drives choices and behaviours** and **what barriers stand in the way** of greater climate and environmental action.

It helps us design and implement better interventions by **factoring in actual behavior that has been tested in real situations.**

There are many interconnections with Communications – it often takes the form of how a choice is framed or presented, including messaging and messengers.

Behavioural Science and
the Program of Applied Research on Climate Action (PARCA)

In September 2021, ECCC, NRCan and PCO's Impact and Innovation Unit launched PARCA to bring the Government of Canada's experience using behavioural science for COVID-19 public health measures to environment and climate action.

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PARCA is
- **researching** how Canadians think, feel, and act in response to climate change and the risks it poses.
- **testing** specific solutions through online and real-world experimentation
- **segmenting the Canadian population** into behaviour-based or attitude-based groups to generate evidence about what actually works and **tailoring solutions** to maximize their impact.

Evidence from BeSci research can be **translated into practical insights and recommendations on using ECCC levers** including:
- communication strategies
- policy development
- program design and delivery
- regulations
- Enforcement

Behavioural Science and COVID-19 Public Health Measures

In March 2020, PCO's Impact and Innovation Unit (PCO-IIU) pivoted to focus on the Government's COVID-19 response.

Behavioural science research informed ways of promoting the recommended public health behaviours like handwashing, wearing a mask and staying home.

HEALTH | POLICY-MAKING

A pandemic and a real estate bubble: the flaws in our judgment

The decision-makers who prepare us to face crises are human, which means they can fall prey to all kinds of cognitive biases.

Why harsher penalties might not encourage people to follow public health rules

1 month ago | Radio | 9:45

Despite stricter rules in place and the threat of being named and shamed, large parties still happened in Kingston's University District over the weekend. Behavioural scientist Laura Scrimgeour talks to us about why fines and penalties have not been enough to scare those partygoers from breaking public health rules.

POLITICS OPINION

'The nudge unit': Ottawa's behavioural-science team investigates how Canadians feel about vaccines, public health and who to trust

Behavioural Science and the Environment Examples

The Nordic Council used BeSci to find ways of decreasing electronic waste by "nudging" **sustainable options for replacing cell phones**, including repairing old phones, buying second-hand or leasing. Results revealed a willingness among young people, but a scarcity of options in the mobile phone market.

The European Commission Consumers, Health, Agriculture and Food Executive Agency looked at **how to increase consumer acceptance of imperfect foods**. They tested the effects of messaging on consumer choices as a way of informing future policy on food sustainability.

The BC Behavioural Insights Group used behaviourally informed postcards that used social norms, messenger effect and loss-aversion framing **to encourage farmland owners to participate in a land-matching program.**

The US EPA used behavioural science insights to redesign fuel economy labels for vehicles. Information about fuel costs over time and comparison with similar models **promotes the purchase of more fuel-efficient vehicles**.
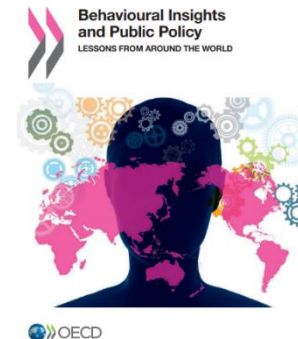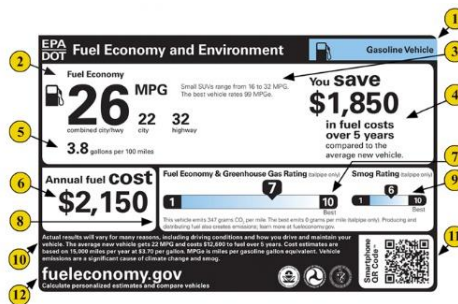
Program of Applied Research on Climate Action (PARCA)

In September 2021, the PCO-IIU, ECCC and NRCan launched the Program of Applied Research on Climate Action (PARCA).

- PARCA is researching **how Canadians think, feel, and act** in response to climate change and the risks it poses.
- Informed by what we learn, researchers will **identify, design and test** specific solutions through online and real-world experimentation.
- **The Canadian population will be segmented into behaviour-based or attitude-based groups** to generate evidence about what actually works and tailor solutions to these groups to maximize their impact.

The PARCA program is managed by **Public Affairs and Communications Branch** in partnership with **Strategic Policy Branch**.

Four BeSci Fellows have been seconded into ECCC to undertake 'deep dive' BeSci research projects on specific topics of relevance to CCB, EPB, CWS, and PACB.

Science and Technology Branch is being engaged since behavioural science is part of *Climate Science 2050: Advancing Science and Knowledge on Climate Change*

The PARCA Academic Advisory Committee is made up of **12 leading Canadian academics and practitioners** in the fields of climate change, environmental sustainability and behavioural science to guide the research program to help ensure its relevance, rigour and impact (see Annex).

PARCA and Results

PARCA will find ways to **use departmental levers** where changes in human behaviour can **help achieve ECCC objectives**.

It will translate evidence into a series of recommendations to scale effective approaches and solutions in promoting climate action. **Supports could take the form of**:

- communications recommendations to inform the language, design and messages of climate action communications
- public education materials
- briefs on data trends, implications, recommendations
- custom segmentation and analysis to support decision-making

PARCA supports:

- reporting on results against the **Departmental Results Framework** and the **Policy on Results** by providing the data for evidence-based decision-making
- the **Experimentation Direction to Deputy Heads**

The Experimentation Direction to Deputy Heads, published in December 2016, reinforced the Government's commitment to devote a fixed percentage of program funds to experimenting with new approaches and measuring impact to instill a culture of experimentation in the Public Service.

Canada

Three Phases of PARCA

	Phase 1 – Longitudinal Study Public opinion research is gathering data on perceptions and behaviours of Canadians over 15 months. The sixth wave is in the field now.	December 2021 – March 2023
	Phase 2 – "Deep Dive" Rapid Online Studies Behavioural science Fellows embedded in branches across ECCC and NRCan are doing online studies that explore drivers and barriers to behaviour change. These studies will also test potential solutions that could be implemented in a digital, online environment or through light-touch interventions.	February 2022 and ongoing
	Phase 3 – In-field Tests and Experiments Fellows will test the insights gathered from the online studies to develop in the field to ensure that solutions that influence intentions also influence action in the real world.	Later 2022 and ongoing

Phase 1
Longitudinal Study

Perceptions of climate change

Mitigation behaviours

Adaptation behaviours

Intention to take climate action and follow-though

Barriers to climate action

Sources of information and trust

Support for climate and environmental policies

Trade-offs of policy priorities

Climate literacy and misinformation
- Level of concern
- Ability to discern between true and false statements

- A majority strongly agree that **climate change is real** (74%), that it will bring about **serious negative consequences** (60%) and that it is primarily **caused by human activity** (55%).

- 79% believe that the **Government of Canada should be doing more** (60% think *a lot* more) to limit climate change. At the same time, only a third *completely* (4%) or *somewhat* (31%) **trust it on this issue**.

- **Nearly half believe individuals do not have primary responsibility** to mitigate climate change (as compared with government or industry), although **most express a willingness to act and change their behaviours** to limit climate change, with 75% willing to make substantial changes and 63% having already made changes. At the same time, few engage in high-impact behaviours.

- There **is higher support for a range of nature-based/conservation and adaptation policies**, compared to support for mitigation measures.

- The **primary factors driving willingness to act** to mitigate climate change are **not demographic,** but based on beliefs, emotions and values.

- Of the common structural barriers to pro-climate action – including, affordability, accessibility, availability, ease of use, and awareness – **perceived cost is the biggest barrier**.

There is a general trend towards less attention paid to climate change, with most indicators decreasing slightly. The proportion of Canadians **willing to act has slipped by 6% in four months.**

Adaptation behaviours have decreased along with the number of extreme weather events, which suggests that they **vary seasonally**, unlike many mitigation behaviours.

There **is strong support** for policies that make **electric vehicles** more affordable and convenient and **lower support** for policies related to **carbon pricing** and the **oil and gas industry**. Support for both global and national carbon pricing has decreased.

Scientists and family and friends remain the most **trusted groups** on climate change, but there has been a small decrease in the level of trust in family and friends. Trust in the Government of Canada remains steady and relatively low.

Climate action literacy is lacking. Canadians both underestimate the benefits of high-impact actions (switching to a vegan diet), and overestimate the benefits of low-impact actions (like littering or buying only local food).

Respondents could distinguish between accurate and inaccurate sample statements. Being able to discern **misinformation and disinformation** (MIDI) is associated with many variables, including trusted actors, sources of information, belief in climate change, and support for mitigation policies. Not all social media platforms are associated with belief in MIDI; in fact, some are associated with more accuracy.

Deep Dive Studies
ECCC

Helping Canadian industries and jurisdictions on their path to a net-zero future

- How to better support applicants to the Low Carbon Economy Fund (LCEF) in generating deeper GHG emissions reductions, including:
  - what types of targeted incentives – and ways of communicating them – might encourage LCEF applicants to take on more ambitious projects that look beyond the short term and set them up for deeper GHG emissions reductions
  - how to push the transition away from home heating oil and towards renewable alternatives

- The work includes interviews, surveys and experiments.

- The results will be used to inform implementation for future versions of the LCEF.

Empowering Canadian consumers to make informed purchasing decisions that are safer for themselves and the environment

- How to encourage consumers to purchase products that are safer for themselves and the environment, for example, through labeling.

- The work will include experiments to find out which attributes are important in making decisions about what to buy and willingness to pay for environmentally friendly products.

Empowering communities to take climate action

- How different levers of communication be used to increase Canadians' intentions to take pro-climate action.

- The work plan includes a social media advertising campaign to test how evoking different emotions (such as hope or guilt) prompt different levels of engagement with digital advertising and online content, leading to an experiment on how different versions of emotionally-charged messages impact thoughts, feelings and intentions.

Investing in nature and natural climate solutions

- How to make progress towards Canada's conservation mandates by increasing the amount of land recognized as Other effective area-based conservation measures (OECMs) and donated through the Ecological Gifts Program (EGP).

- The work plan will explore what factors motivate (or demotivate) private landowners and land managers through first-hand research on the drivers of and barriers to land recognition and donations, and by improving communication and trust.

Energy efficiency through greener homes

- How to raise awareness of and interest in heat pump adoption.

- How to design EnerGuide labelling for homes.

- The work will find ways to increase program registration and uptake, energy efficient purchasing choices, and EnerGuide home energy evaluations.

Zero Emissions Vehicles

- How to encouraging consumers to make their next vehicle lease or purchase a ZEV.

- The work will improve understanding of decision making around adoption and purchase of ZEV passenger, medium and heavy vehicles.

Canadian Forestry Service

- Research with the Pacific Forestry Centre will explore wildfire risk perception and test ways to promote individual- and community-level risk prevention behaviours, with a focus on the FireSmart Canada program and tools.

Next Steps

Continue sharing results and analysis from the waves of the longitudinal study.

Use insights and results to inform policy, program, communication and regulatory initiatives.

Fellows will implement **deep-dive studies**, rapid online experiments and other research with lead branches, and will share results.

Connect this work to other initiatives including Climate Science 2050, Emissions Reduction Plan, Budget 2022 announcements and National Adaptation Strategy.

Promote PARCA and the value of behavioural science, **report on achievements** and explore **additional topics of research and funding needs**