2019 Federal Election: Science Policy Questionnaire

We invite leadership candidates to respond to the following questions to demonstrate to Canadians how they will advance science and the use of evidence in government decision-making.

Question 1: Evidence-informed decision-making

a) What do you see as the value of scientific evidence in informing decision-making at the federal level in Canada?
b) If you are elected, how will you ensure government decisions are based on the best available evidence?

Question 2: Capacity for Federal Science

a) Do you believe that current levels of federal support for public science are sufficient to meet the federal government's responsibilities?
b) If not, what will you do to increase public science capacity at the federal level?

Question 3: Encouraging investment in scientific research and development

a) Do you believe that investment by Canada's private sector in scientific research and development is sufficient?
b) If not, what would you do to increase it?
c) Do you think there is sufficient federal support for scientific trainees in Canada (e.g. Master's, Doctoral and Postdoctoral trainees?)
d) If not, how do you plan to support scientific trainees?

Question 4: Openness and transparency in federal processes

a) Federal Scientific Integrity Policies have been recently implemented to ensure federal scientists can talk freely about their work to the public. What, if any, are your plans to implement and monitor adherence to these policies?
b) Are you in support of increased transparency around sharing of evidence used to inform policy decisions?
c) If so, how will you increase openness and transparency?
d) What are your perspectives on open data and open science?

Question 5: Government science advice

a) Canada currently has a Chief Science Advisor and a number of Departmental Science Advisors. Do you commit to continuing the role of Chief Science Advisor (CSA)?
b) If so, what role do you foresee science advisors and science advisory structures playing in your government?

Question 6: National Science and Technology (S&T) Policy

a) What do you believe is the most important science and technology issue facing Canada at this time?
b) Do you believe that Canada needs a new or updated national S&T policy?
c) If so, how will you go about developing and implementing one?

Question 7: Our Changing Climate

a) Do you consider climate change an emergency?
b) Canada's climate is changing at a higher rate than the rest of the world. What are your plans to respond to Canada's changing climate?
c) Canada no longer has a dedicated funding stream for climate and atmospheric science. What is your plan to ensure we have the climate science necessary to make informed policy decisions?

*The Questionnaire has been distributed by Evidence for Democracy as a part of the **Vote Science** campaign.*
Responses can be sent to Kimberly Girling, Research and Policy Director at Evidence for Democracy:
Kimberly@evidencefordemocracy.ca
Please provide input by October 9th 2019

Questionnaire Supporters

Vote Science   **Toronto Science Policy Network**   **Science & Policy Exchange**   **Canadian Society for Molecular Biosciences**

Canadian Association for Neuroscience   **Raw Talk Podcast**   **Optogenetics Working Group**

Science & Technology Awareness Network   **Centre for Commercialization of Regenerative Medicine**   **Dal Green Chemistry Initiative**

Evidence for Democracy
Attn: Kimberly Girling, PhD
Research and Policy Director
123 Slater St., 6th floor
Ottawa ON K1P 5G4

9 October 2019

Dear Kimberly,

Thank you for writing, for providing us with the opportunity to speak to issues of science policy. We're glad to be able to share our passion for evidence-based policymaking, and we appreciate your tireless advocacy for science in government.

Please find our responses below.

Best regards,

Green Party of Canada

Question 1: Evidence-informed decision-making

a) What do you see as the value of scientific evidence in informing decision-making at the federal level in Canada?

We believe in evidence based policy and that scientific evidence should be the basis of all political decision-making.

b) If you are elected, how will you ensure government decisions are based on the best available evidence?

Greens will work closely with the Chief Science Officer, reinvest in scientific research, and make science more accessible to all Canadians. We will also work across party lines, reform procedural rules and consult widely in order to combat partisan bias.

Question 2: Capacity for Federal Science

a) Do you believe that current levels of federal support for public science are sufficient to meet the federal government's responsibilities?

No. We can, and must, do better. The Harper government muzzled scientists and cut funding for key research, including funding for clean water and northern science on climate change. The current Liberal government has talked about funding science and climate change research but has fallen well short of what is needed. Scientific research is the foundation of innovation, and enabling a green future requires switching to an innovation economy. A Green government will make Canada a leader in this space.

b) If not, what will you do to increase public science capacity at the federal level?

We will significantly increase investment in science (described below).

Question 3: Encouraging investment in scientific research and development

a) Do you believe that investment by Canada's private sector in scientific research and development is sufficient?

No.

b) If not, what would you do to increase it?

Greens will invest in scientific research and implement the full funding recommendations from Canada's Fundamental Science Review. We will also enhance funding for the granting councils, including the Natural Sciences and Engineering Research Council (NSERC), the Social Sciences and Humanities Research Council of Canada and the Canadian Institutes for Health Research.

c) Do you think there is sufficient federal support for scientific trainees in Canada (e.g. Master's, Doctoral and Postdoctoral trainees?)

Scientific trainees often face unacceptable labour standards, with too little pay and too much job instability, in particular given the value they provide to Canada's research and innovation sector.

While the federal government provides grants to trainees, many still struggle to make ends meet. If we want stronger science, we need to support them properly.

d) If not, how do you plan to support scientific trainees?

Firstly, Greens will make tuition free and forgive federal student debt, which will ease major burdens for current and future master's, doctoral, and postdoctoral trainees. Those looking to pursue a career in science or academia won't have to accrue massive student debt.

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We will also implement a Guaranteed Liveable Income, which will ensure a safety net for everyone, especially if they must spend years in academic training to earn their credentials.

Finally, we will build on NSERC's Framework on Equity, Diversity and Inclusion in scientific research to strengthen Canadian scientific and engineering communities to include the full participation of equity-seeking groups, including women, visible minorities, Indigenous peoples, people with diverse gender identities, and people with disabilities.

Question 4: Openness and transparency in federal processes

a) Federal Scientific Integrity Policies have been recently implemented to ensure federal scientists can talk freely about their work to the public. What, if any, are your plans to implement and monitor adherence to these policies?

A Green government will fully implement scientific integrity policies for all government departments. In consultation with existing civil service leadership, we will develop a process to monitor that these policies are being followed.

b) Are you in support of increased transparency around sharing of evidence used to inform policy decisions?

Yes. It's important to our democracy for Canadians to understand the process of decisions being made.

c) If so, how will you increase openness and transparency?

We will establish a portal where all government science, including the evidence the government uses to make decisions, is available to Canadians in a comprehensible form. We will adopt policies similar to Europe's "Plan S" to ensure that scientific publications based on publicly-funded research are available in open access journals or on the portal.

d) What are your perspectives on open data and open science?

For all public data where there are no privacy, security, or other legal concerns preventing the data from being shared, data should be reviewed by the Privacy Commissioner of Canada via the Personal Information Protection and Electronic Document Act (PIPEDA) and made publicly available under the following conditions:

- With the highest level of granularity and detail possible which still maintains the privacy of individual citizens;
- In a timely fashion so that the value of the data is preserved;
- Accessible to the widest range of users for the widest range of purposes in a non-proprietary format;
- Machine processable and structured to allow automated processing, without having to mechanically harvest the data before using it;

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- Non-discriminatory and available to everyone without having to register or self-identify as being interested in the data;
- With a license that does not encumber the user, and ideally without a license at all.

We believe making data more accessible is an important step in democratizing science.

Question 5: Government science advice

a) Canada currently has a Chief Science Advisor and a number of Departmental Science Advisors. Do you commit to continuing the role of Chief Science Advisor (CSA)?

Absolutely!

b) If so, what role do you foresee science advisors and science advisory structures playing in your government?

Science advisors and their offices can play an important role in ensuring that governments base their decisions firmly in sound evidence. We would support the Chief Science Advisor in helping with decision-making and advising departments and Members of Parliament on the best outcomes.

The Green Party also sees room for expansion of the CSA's mandate to communicate science to the public. The value of evidence is often misunderstood, and all Canadians could benefit from scientific research being made more accessible.

Question 6: National Science and Technology (S&T) Policy

a) What do you believe is the most important science and technology issue facing Canada at this time?

Climate change mitigation provides the biggest challenge and opportunity for our science and technology sector. In order to move towards a greener economy, we need greater innovation.

b) Do you believe that Canada needs a new or updated national S&T policy?

There is value in updating a national science and technology strategy to best reflect the quickly changing landscape of these sectors.

c) If so, how will you go about developing and implementing one?

We will undertake extensive consultations with a broad range of stakeholders in science and technology across the country to build a strategy that truly lifts up our sector and moves Canada's innovation forward.

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Question 7: Our Changing Climate

a) Do you consider climate change an emergency?

Yes! The Intergovernmental Panel on Climate Change has been clear that we need climate action immediately.

b) Canada's climate is changing at a higher rate than the rest of the world. What are your plans to respond to Canada's changing climate?

Climate change is at the centre of our entire mission. The Green Party is committed to setting stringent new targets for emissions reductions to ensure we meet the Paris Agreement target of no more than 1.5 degrees Celsius of global average temperature increase. The Green Party is the only party that has a comprehensive climate action plan, Mission: Possible, that will help us avoid climate catastrophe.

This plan places Canada on something equivalent to a war footing to ensure the security of our economy, our children and their children. We have no other option. Their future is at stake.

A Green government will:

- Set stringent new targets on GHG reductions: 60 per cent GHG reductions against 2005 levels by 2030 and net zero emissions by 2050;

- Establish an inner cabinet of all parties, the Climate Emergency Cabinet, to have parties work together to ensure that climate is no longer treated like a political football;

- Maintain revenue-neutral fee and dividend carbon pricing;

- Ban fracking;

- Green and modernize the grid by removing all fossil fuel generation from our national east-west electricity grid while improving its capacity to transmit renewable energy from one province to another.

In the meantime, because the climate emergency is already upon us, we must take action to deal with the existing effects. Greens will invest in climate-proofing critical infrastructure, restoring carbon sinks, and increasing preparedness and support for natural disaster relief at home and abroad.

We recognize that climate security cannot be achieved in the absence of equity. Our climate plans will incorporate economic justice, a just transition for workers, and the guarantee of meaningful work, while also respecting UNDRIP.

c) Canada no longer has a dedicated funding stream for climate and atmospheric science. What is your plan to ensure we have the climate science necessary to make informed policy decisions?

Robust climate science is critical to our overall environmental policies. Greens will restore and augment Climate Change and Atmospheric Research (CCAR) funding to NSERC and ensure ongoing funding for the Polar Environment Atmospheric Research Laboratory in order to keep our national research strong.

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NDP Response: Evidence for Democracy (E4D)

Question 1: Evidence-informed decision-making

a) What do you see as the value of scientific evidence in informing decision-making at the federal level in Canada?

Evidence-based decision making should be at the heart of our policy process. Especially in an era of climate crisis, we need more than ever to respect the science and make decisions accordingly.

b) If you are elected, how will you ensure government decisions are based on the best available evidence?

We will increase funding for government science, have more capacity for free, frank and independent advice from both government scientists and independent advisors both in terms of funding and latitude to speak freely, and act as a government to take seriously the advice given to ministers by scientists. We will give parliamentarians a resource to assess scientific evidence in the form of a Parliamentary Science Officer.

Question 2: Capacity for Federal Science

a) Do you believe that current levels of federal support for public science are sufficient to meet the federal government's responsibilities?

No. The Conservative cuts from the Harper era were never fully restored by the Liberals, and Canada's government more than ever needs its own capacity for top-notch scientific advice and facts.

b) If not, what will you do to increase public science capacity at the federal level?

We would review the state of science funding across government and ensure that it is appropriately funded within a reasonable timeframe.

Question 3: Encouraging investment in scientific research and development

a) Do you believe that investment by Canada's private sector in scientific research and development is sufficient?

No.

NDP♥NPD
Jagmeet Singh

b) If not, what would you do to increase it?

We know that science and innovation are critical to the long-term success of our economy. We want to work with industries and labour groups to identify research needs and invest in research and innovation on a sector-by-sector basis.

c) Do you think there is sufficient federal support for scientific trainees in Canada (e.g. Master's, Doctoral and Postdoctoral trainees?)

No. New Democrats believe that the recommendations of the Fundamental Science Review should be respected and fully implemented.

d) If not, how do you plan to support scientific trainees?

We would fully implement the recommendations of the Naylor Report.

Question 4: Openness and transparency in federal processes

a) Federal Scientific Integrity Policies have been recently implemented to ensure federal scientists can talk freely about their work to the public. What, if any, are your plans to implement and monitor adherence to these policies?

Scientific integrity policies are critical to transparent, high-quality public science. We would build on currently existing policies, identify gaps and strengthen implementation. Federal scientists should be free to discuss their work.

b) Are you in support of increased transparency around sharing of evidence used to inform policy decisions?

An open evidence model of government decision making must balance the right of the public to know and the freedom of public servants to give frank advice to decision-makers. New Democrats would conduct a study of best practices abroad and implement an open evidence model based on its recommendations.

c) If so, how will you increase openness and transparency?

See above.

d) What are your perspectives on open data and open science?

Open data and open science are worthwhile principles and New Democrats would look at expanding and strengthening their implementation.

NDP♦NPD
Jagmeet
Singh

Question 5: Government science advice

a) **Canada currently has a Chief Science Advisor and a number of Departmental Science Advisors. Do you commit to continuing the role of Chief Science Advisor (CSA)?**

Yes, as well as a Parliamentary Science Officer.

b) **If so, what role do you foresee science advisors and science advisory structures playing in your government?**

Science advisors can play a valuable role in making sense of evidence and advising policymakers. We would expand their current roles to better monitor federal science capacity, as well as create the position of Parliamentary Science Officer to inform parliamentarians about scientific evidence.

Question 6: National Science and Technology (S&T) Policy

a) **What do you believe is the most important science and technology issue facing Canada at this time?**

Digital platforms and their impact on privacy rights, the political process, the economy, and their use of AI technology; Canada's difficulty in promoting innovation.

b) **Do you believe that Canada needs a new or updated national S&T policy?**

Science, technology and innovation are critical parts of the Canadian economy – we need a new national science and technology policy focused on investment, science culture and innovation.

c) **If so, how will you go about developing and implementing one?**

We would consult with scientists and science policy experts, provinces, universities and the private sector to create a comprehensive policy that would advance agreed-upon strategic aims.

Question 7: Our Changing Climate

a) **Do you consider climate change an emergency?**

Yes.

NDP♦NPD
Jagmeet
Singh

b) Canada's climate is changing at a higher rate than the rest of the world. What are your plans to respond to Canada's changing climate?

Our plan to respond to climate change is the only one that puts science, people and communities at its heart. We would invest in emissions reductions like transit, retrofits and green industries to make sure that no communities are left behind and set targets consistent with the scientific consensus that places the limits of least-disruptive warming at 1.5 degrees Celsius, as well as regularly audit our progress on our goals.

c) Canada no longer has a dedicated funding stream for climate and atmospheric science. What is your plan to ensure we have the climate science necessary to make informed policy decisions?

We would increase federal science spending and ensure that there is once again a dedicated stream of climate science funding.

2019 Federal Election: Science Policy Questionnaire
Response from Liberal Party of Canada

Question 1: Evidence-informed decision-making
a) What do you see as the value of scientific evidence in informing decision-making at the federal level in Canada?
b) If you are elected, how will you ensure government decisions are based on the best available evidence?

The Liberal Party has always been and will remain committed to supporting federal science through adequate funding, as well as protecting the integrity of science policies throughout government.

Our Liberal government believes in evidence-based policy and in science and in the Canadians behind the next big ideas. After a decade of setbacks and cuts to science, our government is rebuilding Canadian research and supporting our country's greatest minds.

One of the first actions we took after forming government was to reintroduce the mandatory long-form census in time for the 2016 census. We have also invested significant new resources in supporting Statistics Canada to undertake work that is critically important to emerging policy issues such as housing affordability, gender and diversity, and care.

Within government we unmuzzled government scientists, and re-instated the position of the Chief Science Advisor.

We are supportive of the Chief Science Advisor's work to:

- implement Canada's first government-wide Scientific Integrity Policy, to ensure all federal scientists can openly conduct and speak about their research to Canadians; and
- create a network of Department Science Advisors across federal departments to reinforce evidence-based decision making throughout the Government.

We also launched the first fundamental science review in 40 years in response to the Conservative cuts and mismanagement of research. As a result we invested over $10 billion in science and research through Budget 2018. This includes the single largest investment in fundamental research in Canadian history.

Budget 2018 allocated $2.8 billion to renew federal laboratories where federal scientists can collaborate with their colleagues within the federal network as well as extramural scientists from universities or SMEs.

We will always stand up for scientists - in academia, in the public service, in innovative sectors of our economy - and will absolutely protect scientific integrity policies as well as funding in the federal government.

Question 2: Capacity for Federal Science
a) Do you believe that current levels of federal support for public science are sufficient to meet the federal government's responsibilities?
b) If not, what will you do to increase public science capacity at the federal level?

We know we always need to be improving and updating our science, and change our public policy based on existing and emerging scientific advice. While we have made great progress in reversing the damage done by the Conservative government, this is a field that will always be evolving and we need to continue to evolve federal support along with it.

We have made the largest investment in history in Science – more than $10 billion to support Canadian scientists and researchers! We invested $763 million to the Canada Foundation for Innovation over the next five years and $462 million per year starting in 2023--24 for sustainable long term funding, to ensure that Canadian researchers have access to the tools, labs, and equipment they need to make breakthrough discoveries.

We have invested $2.8 billion to Public Services and
Procurement Canada to renew federal laboratories and interdisciplinary federal government researchers,
allowing them to better work in partnership with Canadian researchers outside of government.

In just five years under the previous Conservative government, nearly 500 DFO scientists were dismissed and 7 of 11 regional DFO libraries were closed. Harper slashed the DFO operating budget by $100 million. Since 2016, we have hired almost 300 new science staff and invested over $197 million in Budget 2016 to Fisheries and Oceans Canada's science program--the largest investment in aquatic science in over a generation. Our modernized Fisheries Act will also increase enforcement capacity by increasing the number of front-line fishery officers and boots on the ground.

From coast to coast to coast, we have been reinvesting and strengthening Canada's on-water presence and better protecting our coasts, and waterways. In June 2019, we were proud to accept the first Offshore Fisheries Science Vessel built and delivered under the National Shipbuilding Strategy. The CCGS Sir John Franklin is a major addition to the Coast Guard fleet. It means that our DFO scientists, and that the women and men of the Coast Guard have the right tools and technology they need to continue delivering on their essential, collaborative work on the West Coast. The Sir John Franklin, built in B.C., is leading the way for many more Canadian built ships to join our Coast Guard fleet, and help keep our oceans safer, cleaner and healthier. A re-elected Liberal government will continue to make crucial investments to improve our federal science capacity.

Question 3: Encouraging investment in scientific research and development
a) Do you believe that investment by Canada's private sector in scientific research and development is sufficient?
b) If not, what would you do to increase it?
c) Do you think there is sufficient federal support for scientific trainees in Canada (e.g. Master's, Doctoral and Postdoctoral trainees?)
d) If not, how do you plan to support scientific trainees?

Since 2015 we have expanded parental leave for graduate students and researchers from six to 12 months to help them better balance their work and family responsibilities. We've invested $80 million to help establish 8 new Canada Excellence Research Chairs to further Canada's reputation as a global centre of excellence in science, research and innovation.

Through Budget 2018, we invested $114 million, to support 500 more master's level scholarships annually and 167 more three--year doctoral scholarships, creating more opportunities for our early

career researchers. We are supporting the next generation of Canadian research and researchers to explore high risk, cutting edge projects that propel industries and create jobs by investing more than $1.7 billion in new funding to Canada's granting councils and research institutes.

This Liberal government made the single largest investment in science in the history of Canada by investing $4 billion in science in Budget 2018. This new money will support the work of some 21,000 researchers across Canada, including early career researchers, undergraduates, masters and doctoral students, research assistants, and technicians.

During our first mandate, this liberal government has created 25 Canada 150 Research Chairs at universities around the world for over the next eight years, allowing Canadian universities the ability to recruit top international researchers from all disciplines. We've awarded funding for over 3,300 research projects with more than $265 million in scholarships, fellowships, and grants from the Social Sciences and Humanities Research Council (SSHRC) in support of research in areas such as education, immigration, and technology. We invested $2.8 billion to Public Services and Procurement Canada to renew federal laboratories and interdisciplinary federal government researchers. Allowing them to better work in partnership with Canadian researchers outside of government. We know also invested $231.3 million to increase the Research Support Fund, providing universities with resources to cover the indirect costs of research.

A re-elected Liberal government will continue these programs and funding and ensure Canadian talent and innovation is well supported to continue informing our policies across government.

Question 4: Openness and transparency in federal processes
   a) Federal Scientific Integrity Policies have been recently implemented to ensure federal scientists can talk freely about their work to the public. What, if any, are your plans to implement and monitor adherence to these policies?
   b) Are you in support of increased transparency around sharing of evidence used to inform policy decisions?
   c) If so, how will you increase openness and transparency?
   d) What are your perspectives on open data and open science?

The Liberal Party believes in science, research and evidence-based decision-making. That's why we re-instated the long-form census, unmuzzled our scientists, brought back the position of the Chief Science Advisor and invested over $10 billion.

We are fully in support of increasing transparency around sharing of evidence used to inform policy decisions. We have published scientific reports from our arms-length science organisation - the Canadian Science Advisory Secretariat, and made science meetings open to observers as well. We will continue to move forward to increase transparency and make decisions based on sound science.

Question 5: Government science advice
   a) Canada currently has a Chief Science Advisor and a number of Departmental Science Advisors. Do you commit to continuing the role of Chief Science Advisor (CSA)?
   b) If so, what role do you foresee science advisors and science advisory structures playing in your government?

The Liberal party believes in evidence-based policy and in science and in Canadians - which we clearly demonstrated in our first mandate since 2015. After a decade of setbacks and cuts to science, our government is rebuilding Canadian research and supporting our country's greatest minds.

We reversed the Harper Conservatives' attack on science by naming Dr. Mona Nemer as Canada's new Chief Science Advisor, ensuring that science and its real benefits for Canadians are promoted, government science fully available and accessible to the public, and government scientists are free to speak to Canadians about their work.

A re-elected Liberal government will defend and protect this important role, and build upon it by investing further in the scientific capacity of government, particularly as it relates to oceans management and climate change. To help guide our new commitment to legally binding climate targets, including net-zero emissions by 2050, we will appoint a group of scientists, economists, and experts to recommend the best path to get to net-zero.

To foster scientific excellence and science-based decision-making, ECCC will establish a new Departmental Science Advisor (DSA) position to lead and support high-quality scientific research across the Department and help make ECCC science available to Canadians. The role will strengthen the linkage between science and policy decisions, improve collaboration across sectors and partners, and reinforce the commitment to base decisions on the best scientific advice available. We will also appoint a science advisor at the Department of Fisheries and Oceans to inform our decisions on aquaculture and the sustainability of this important sector.

Question 6: National Science and Technology (S&T) Policy
    a) What do you believe is the most important science and technology issue facing Canada at this time?
    b) Do you believe that Canada needs a new or updated national S&T policy?
    c) If so, how will you go about developing and implementing one?

We believe the biggest challenge this and future generations will face is climate change. This means we must find innovative ways to fight this by putting into place the appropriate green infrastructure that is needed to transition our economy into the economy of the future - one that is more sustainable and more prosperous.

In this effort, we have invested $ $572.5 into a Digital Research Infrastructure Strategy makes sure that Canadian researchers have the digital tools they need to support scientific excellence. We've announced the New Frontiers in Research Fund, representing a fundamental shift in how we invest in research. It will accelerate the pace of discovery in Canada and make a difference to our health, environment, communities and economy.

Our Liberal government has invested in the Innovation Superclusters Initiative that will accelerate innovation and incent collaboration on ambitious market-driven proposals. This unprecedented collaboration across sectors will create 50,000 new middle -class jobs across the country and grow our economy by $50 billion over ten years

More than 450 businesses, 60 post-secondary institutions and 180 other participants will match our targeted investments of $950 million dollar-for-dollar. We have allocated $1.3 billion in new

funding to Canada's six Regional Development Agencies (RDAs) to build a strong foundation for sustained and inclusive regional growth. The regional growth strategies—three of which have been announced to date—play to the strengths of the RDAs as conveners in regional economic ecosystems. Since we took office, the RDAs have supported over 4,800 projects and 2,000 communities; leveraging over $5.7 billion in investment.

Launched Innovation Canada, a one -stop shop to connect Canadian innovators with the tools to turn ideas into new technologies and their skills into good jobs. This digital platform saves companies time and money and matches them to programs and services geared to their individual needs and circumstances. Since its launch in January 2018, the Innovation Canada window has received 420,000+ visits by Canadians. The Clean Growth Hub supports clean technology companies and projects. It has met with 776 clients since its launch in January 2018. To date, over 450 high -potential firms have enrolled in Innovation Canada's Accelerated Growth Service and accessed more than $350 million in funding from the Business Development Bank of Canada (BDC), Export Development Canada (EDC), the Trade Commissioner Service (TCS), the National Research Council (NRC); and the RDAs.

By region, as part of the Innovation Superclusters Initiative, we have launched four Superclusters:

In Atlantic Canada, we are creating more than 3,000 jobs and grow our economy by more than $14 billion over the next ten years through the Ocean Supercluster by supporting innovation in marine renewable energy, fisheries, aquaculture, oil & gas, defence, shipbuilding, and transportation. We announced more than $164 million in incremental new funding for ACOA since Budget 2016. We have invested $153,694,888 in the Atlantic Canada's post- secondary infrastructure through the PSI-SIF which in turn will help train students in STEM related fields. In Atlantic Canada, we also launched the Atlantic Growth Strategy in partnership with the four Atlantic provinces to create well-paying jobs, strengthen local communities and grow innovative companies in the region.

In Quebec, through the SCALE.AI Supercluster, we are leveraging Canada's AI resources to develop a next-generation intelligent supply chain. This supercluster will create more than 16,000 jobs and grow the Quebec and Canadian economy by $16.5 billion over 10 years. We are supporting 1,700 steel workers in Contrecoeur, Quebec through the Strategic Innovation Fund. A re elected Liberal government will always support clean innovation to help Canada transition into the economy of tomorrow and we've already started this by contributing $60 million in funding for the Elysis project: the development and commercialization of the world's first carbon free aluminum smelting process in the Saguenay—Lac-Saint-Jean region. This will create and maintain over 11,500 jobs. We launched the Federal Strategy for Innovation and Growth for the Quebec Regions in November 2018. We announced more than $139 million in incremental new funding for CED-Q since Budget 2016. We have invested more than $385 million in Quebec's post-secondary infrastructure through the PSI-SIF to help train new students.

In Ontario we are building the manufacturing capabilities like advanced robotics and 3D printing through the Advanced Manufacturing Supercluster, creating 13,500 jobs and growing our economy by $13.5 billion. We have announced $205.4 million in incremental new funding for FedDev since Budget 2016. We announced the Prosperity and Growth Strategy for Northern Ontario (PGSNO) to deliver the Innovation and Skills Plan in a way that makes sense to local communities, businesses, and people. We have invested more than $784 million in Ontario's

post-secondary infrastructure through the PSI-SIF. We are also creating and maintaining over 40,000 jobs through the Strategic Innovation Fund. We are investing in a growth and innovation network along the Waterloo–Toronto–Ottawa corridor by bringing together three top innovation hubs: Communitech, MaRS Discovery District, and Invest Ottawa. Together, they will implement the Scale-Up Platform to help innovative companies grow more quickly and create 18,000 high- quality, skilled jobs. Through the Platform—the first of its kind in Canada—the three organizations will pool their resources to help 30 Ontario companies scale up and achieve revenues of $100 million or more by 2024, as well as to provide services to thousands of others.

In Western Canada, we are unlocking the potential of Canada's digital industries through the Digital Technology Supercluster that will create 13,500 jobs and grow our economy by $5 billion. We have been developing a Western Canada Growth Strategy to reflect input from business, academia, all levels of Government and Indigenous communities.

Question 7: Our Changing Climate
 a) Do you consider climate change an emergency?
 b) Canada's climate is changing at a higher rate than the rest of the world. What are your plans to respond to Canada's changing climate?
 c) Canada no longer has a dedicated funding stream for climate and atmospheric science. What is your plan to ensure we have the climate science necessary to make informed policy decisions?

The Liberal Party of Canada recognizes this is a climate emergency and an existential threat that we are facing. It is an urgent challenge not just for Canada but for the world. That is why our government has put a price on carbon, which we believe to be the most efficient way to reduce greenhouse gas emissions across industries and across the country.

To help green our economy and keep it globally competitive, a re-elected Liberal government would follow-through on our existing plan to take climate action by:

- Investing in renewables to get to 90% clean electricity by 2030;
- Supporting over 1,000 public transit projects across the country;
- Making zero-emission vehicles more affordable and accessible; and
- Phasing out coal;

We are also working with workers, communities, unions, innovators and Canadians across the country that we can make a just transition to a clean economy. Budget 2019 announced a new investment of $150 million to invest in infrastructure to support priority projects and diversify coal economies.

In this campaign, we have also announced the following new initiatives we would implement, if re-elected:

- Set legally-binding climate targets to exceed our 2030 commitments and achieve net zero emissions by 2050. To guide this work, we will appoint a group of scientists, economists, and experts to recommend the best path to get to net-zero;
- Plant 2 billion trees and unleashing the power of nature to help tackle change through investments in land conservation, wetland management, and more;

- Invest more in marine science to help rebuild ecosystems and establish a Canada Water Agency;
- Slash corporate taxes in half for companies that develop technologies or manufacture products that have zero emissions, making Canada a world leader in clean and sustainable technologies like zero-emission vehicles;
- Help Canadians play a role in climate action by making it easier and more affordable to retrofit and flood proof their home;
- Continue to lead by example and ensure all federal buildings run on clean electricity by 2022; and
- Leverage the purchasing power of the federal government to further drive clean technology adoption.