Achieving Net-Zero in Construction:
A Workable Roadmap for Technology Implementation

Government-Industry Roundtable Discussion Overview

May 8th, 2023

BACKGROUND

Over the past several years, the federal government has taken significant steps in order to accelerate their long-term commitment to achieving net-zero emissions by 2050. These actions have focused heavily on addressing the carbon emissions of new builds and retrofits, which has required our industry to be at the forefront of the low-carbon transition.

The transition to a net-zero economy requires a level of integrated collaboration across federal departments, across levels of government, and between industry and government. This transition is being worked on from multiple angles and by multiple parties, and will face significant difficulties in terms of regulatory harmonization and technology implementation. Additionally, the sector is facing a significant labour shortage, with significant additional difficulties expected in the coming months and years due to forecasted retirements and growth in worker demand.

The federal government has created several supports aimed at providing resources to industry and organizations working within the sector, including the Deep Retrofit Accelerator Initiative, the Codes Acceleration Fund, additional funding within the Canada Infrastructure Bank's Green Priority area, the Canada Green Buildings Strategy, and the Sectoral Workforce Solutions Program.

These actions show that there is a priority being placed on achieving net-zero goals. We believe that the funding committed indicates a willingness to work collaboratively to get the job done. This roundtable is another pillar of the partnership between industry and government to address the practical and logistical hurdles that we need to overcome as a country to achieve net-zero in the built environment.

ROUNDTABLE PROCESS

Since early 2020, CIPH and MCAC have held roundtables with civil servants from a range of departments and agencies, alongside stakeholder representatives from a variety of businesses, to ensure awareness of industry priorities and create opportunities for interdepartmental and public collaboration.

On May 8th, CIPH and MCAC hosted a roundtable that engaged four federal departments and agencies alongside members of MCAC and CIPH that represent key businesses in the plumbing, heating, and construction industries. The event included presentations from the National Research Council, the Treasury Board Secretariat, and Natural Resources Canada. The presenters then joined four roundtables, where discussions focused on the creation of pathways to implement key technologies to meet Canada's net-zero goals.

The discussions provided a unique opportunity for federal departments to communicate with each other on an issue that is typically worked on across government but within silos, and for key stakeholders to provide recommendations on ways to ensure that the expertise of industry is sought out when developing and implementing regulations.

A comprehensive, sustainable path forward is only possible when industry and all levels of government work together to develop a practical, cost-effective and innovative roadmap to solutions for all Canadians

The information that follows presents the informed perspectives and recommendations from roundtable participants and highlights the key concerns facing the skilled trades and the plumbing and heating value chain as we transition to net-zero.

ROUNDTABLE PARTICIPANTS

Government Participants

1. National Research Council (NRC)
2. Natural Resources Canada (NRCan)
3. Standards Council of Canada (SCC)
4. Treasury Board Secretariat (TBS)

DISCUSSION TOPICS

1. The NRC's "*Policy Considerations for Developing and Implementing Greenhouse Gas Emissions Provisions in the National Model Codes*".
2. Lessons learned in dealing with net-zero requirements to achieve a workable national technology implementation roadmap.
3. New data on the low-rise residential mechanical/electrical workforce and ideas for upskilling and increasing the workforce.
4. The industry's priorities for the Canada Green Buildings Strategy.

OVERVIEW OF PRESENTATIONS

Prior to the roundtable discussions, representatives from various government departments provided presentations on their respective files relevant to our industry.

National Research Council Canada - *Policy Considerations for Developing and Implementing Greenhouse Gas Emissions Provisions in the National Model Codes*

A representative from NRC presented a Draft Version for Stakeholder Consultations of the *Policy Considerations for Developing and Implementing Greenhouse Gas Emissions Provisions in the National Model Codes.* This document presented draft policy positions reviewed by the Canadian Board for Harmonized Codes (CBHCC), which will serve to inform the improvement of the National Model Codes, with the goal of reducing GHG emissions of new builds to help mitigate climate change and support achieving federal / provincial / territorial (FPT) climate goals. The National Model Codes do not currently address the type or quality of energy source used by buildings and houses, nor do they address embodied GHG emissions.

This draft policy is currently in its second round of consultations, and is focused on the following:

- "The need to accommodate the breadth of PT fuel policies, plans and individual PT targets, and coordinate with elements that extend beyond the boundary of the code";
- "Regional differences (e.g., ability to fuel switch, availability of low embodied carbon materials in Northern and remote areas)";
- The "development and availability of data (e.g., better granularity of emission factors for operational carbon …"; and
- "Adoption and implementation considerations including market readiness, training, capacity-building (monitoring, reviewing and enforcement), and developing tools to enable PTs to harmonize."

The Draft also included the most recent recommendation:

- "Given the foundational nature of the National Model Codes in building design and construction, they are appropriate instruments to reduce operational and embodied GHG emissions of buildings and houses and complement other policy instruments, such as energy policies and emissions policies, to support FPT climate goals.
    - Operational GHG emissions technical requirements be introduced in the 2025 version of the Codes;
    - Embodied GHG emissions technical requirements be introduced in the 2030 version of the Codes; and
    - This work will inform the application to alterations to existing buildings, which will follow."

To give comments on this draft policy, you can provide feedback directly to the CBHCC Secretary at CBHCCSecretary-SecretaireCCHCC@nrc-cnrc.gc.ca by June 15, 2023.

Treasury Board Secretariat – *Advancing Regulatory Modernization*

A representative from the Regulatory Affairs branch of TBS presented an update on the role of TBS in regulatory modernization, and the steps that are being taken. This included the following initiatives:

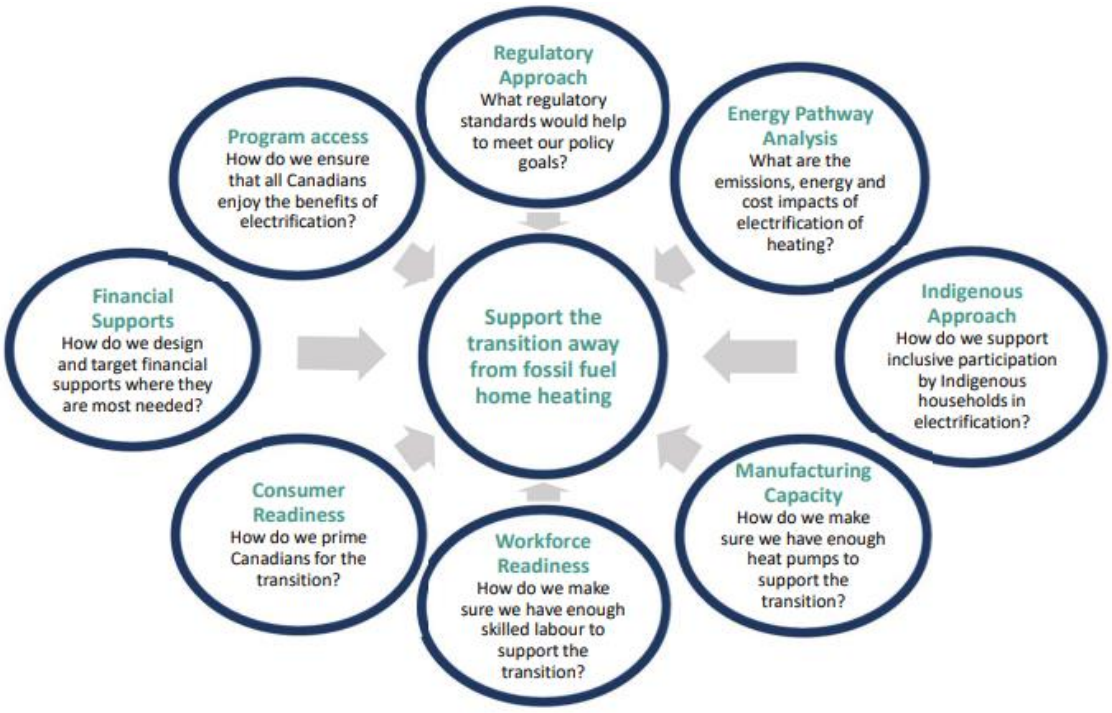
- The Online Regulatory Consultation System
    - Allows stakeholders to comment online, and regulators to publish all stakeholder comments on regulations that are pre-published on Canada Gazette (Part I);
- The Let's Talk Federal Regulations website
    - Gathers feedback from interested stakeholders on TBS initiatives seeking to improve the regulatory system;
- Regulatory cooperation
    - International cooperation to adopt standards, harmonize/ align regulations, share information and experiences, reduce unnecessary regulatory differences, eliminate duplicative requirements and processes;
- Regulatory Reviews
    - The next round of reviews will include a Supply Chain Regulatory Review, to be coordinated by TBS in collaboration with other federal departments.
        - The Supply Chain Review will explore opportunities to support stronger and more resilient supply chains through the federal regulatory framework, finding areas where improvements to regulation or regulatory practices can support the movement of goods, services and people in Canada. Supply chains as they relate to cross-border movement, as well as to securing supply in key areas, will also be explored.
        - A series of public consultations via Let's Talk Federal Regulations are being planned to seek stakeholder input to inform the review.
- The Annual Regulatory Modernization Bill (ARMB)
    - Serves as a regular legislative mechanism that enables common-sense legislative changes to improve how the regulatory system keeps pace with rapid innovation and evolving regulatory environments while maintaining protections for Canadians' health, safety, security and for the environment.
        - Individual proposals within an ARMB package are intended to be non-contentious and cost neutral.
        - The next ARMB is expected to focus on supporting COVID recovery.
- The Centre for Regulatory Innovation
    - Develops tools and guidance and provides advisory and funding support to help regulators explore novel approaches.
        - The Centre administers the Regulatory Experimentation Expense Fund (approx. $1.4M per year ongoing) to help regulatory departments/agencies run experiments, including regulatory sandboxes.
        - The Centre also administers the Regulators' Capacity Fund ($16.2M over fiscal years 2019-25) to support projects enabling regulators to design and administer more competitive regulatory regimes.
            - Intake is ongoing to identify new projects starting in fiscal year 2023-24.
- The External Advisory Committee on Regulatory Competitiveness (EARC);
    - Made up of business, academic, consumer advocacy, and civil society stakeholders brought together to provide recommendations to the Treasury Board on how to promote and advance regulatory excellence and support the modernization of Canada's regulatory system.
        - The next set of recommendations is expected in Summer 2023 and will focus on authorities related to sandboxes and incorporation by reference (IBR), building on Covid-19 lessons learned, and how to better engage under-represented groups.

Natural Resources Canada – *Decarbonization of Low-Rise Residential Space and Water Heating*

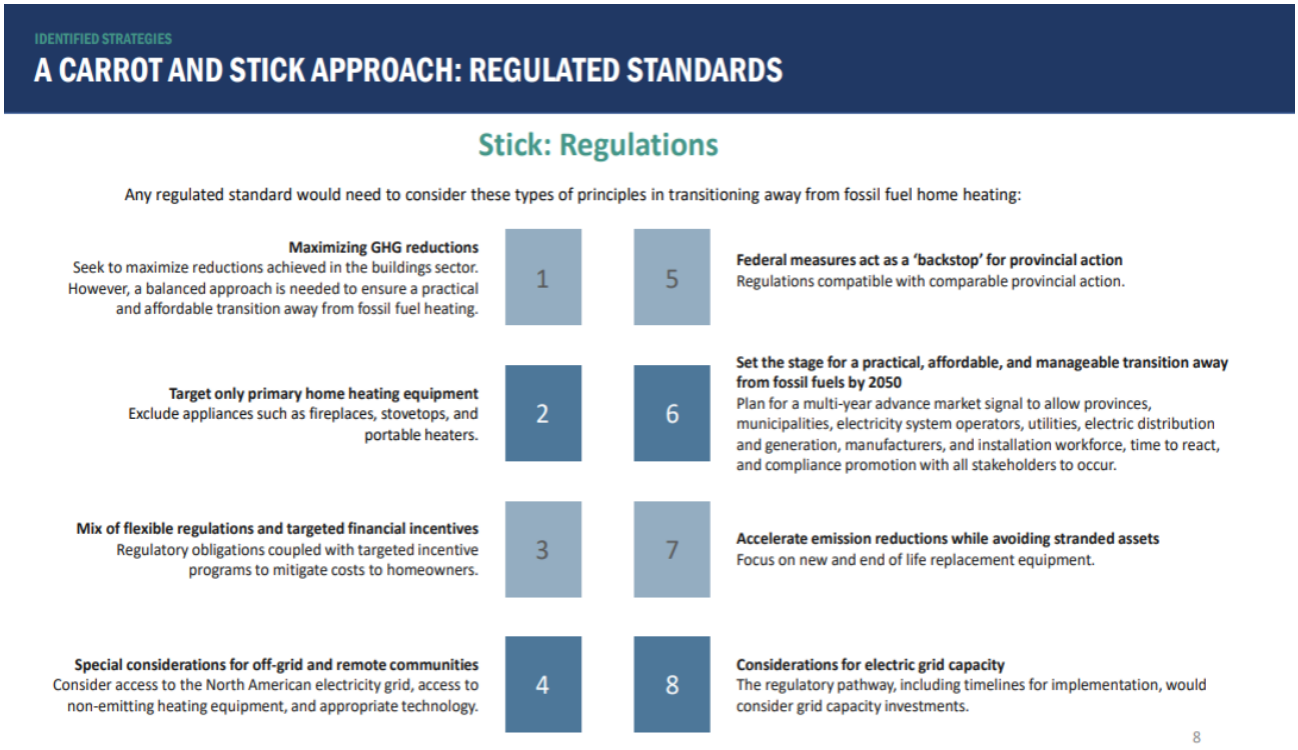
Representatives from the Low Carbon Homes Task Force of NRCan presented an update on low-rise residential policy considerations and regulatory framework; and consumer research, workforce needs, and heat pump supply chain.

The mandate of the Low Carbon Homes Task Force is to develop regulatory standards and an incentive framework to support the transition off fossil fuels for heating systems in buildings. They focus primarily on space and water heating in the low-rise residential sector, as they make up 99% of a home's GHG emissions. In order to support the transition of these systems from fossil fuels, the Task Force indicates that regulations can provide clear milestones and should be supplemented with program supports where needed.

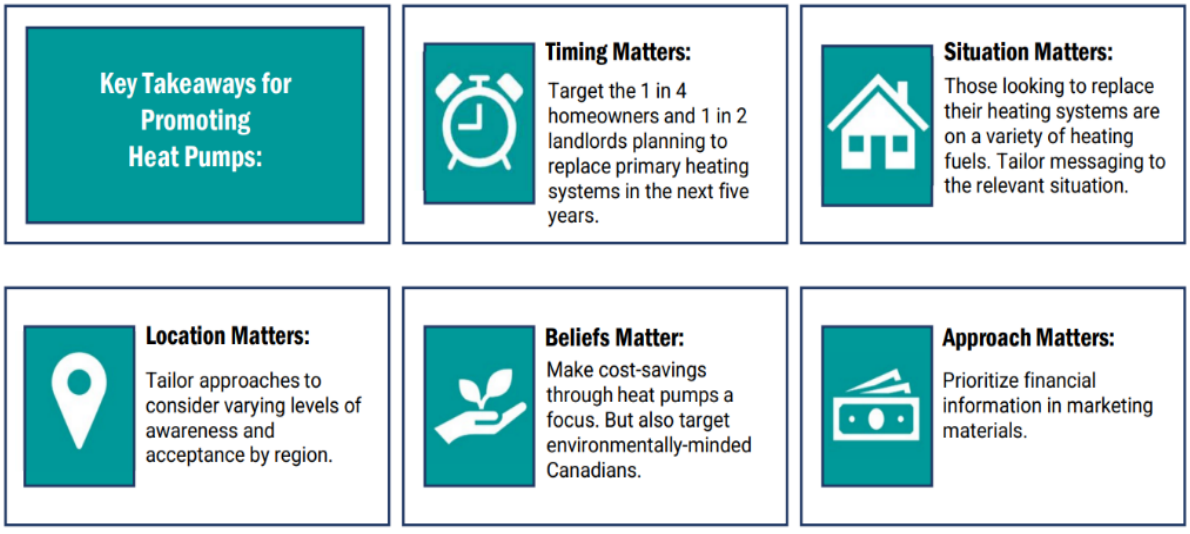
The Task Force identified the following eight areas of focus to support the transition away from fossil fuel home heating:



Additionally, they identified the following considerations required for regulations targeting this area:



The Task Force undertook homeowner and property landlord behavioural research initiatives, and found the following key take-aways on the marketing and promotion of heat pumps:



The industry has a direct impact in the uptake of heat pumps amongst Canadian homeowners. All areas of the industry play critical roles in promoting, installing, and maintaining the energy efficient heating equipment that will help us to achieve our net-zero goals. Industry has the important role of providing influence, trust, and confidence to Canadians to educate them on the need for a transition to low-carbon heating sources.

OVERVIEW OF DISCUSSION

During the Roundtable, attendees were given the opportunity to discuss their impressions on the path to net-zero and other challenges facing the industry. Each discussion followed a guiding theme:

1. The NRC's "Policy Considerations for Developing and Implementing Greenhouse Gas Emissions Provisions in the National Model Codes."
2. Lessons learned in dealing with net-zero requirements to achieve a workable national technology implementation roadmap.
3. New data on the low-rise residential mechanical/electrical workforce and ideas for upskilling and increasing the workforce.
4. The industry's priorities for the Canada Green Buildings Strategy.

Each guiding theme allowed for each table to have a range of discussion that highlighted the various themes of the ways that CIPH and ACEC would like to move forward. At each table, there was a variety of topics that were explored but each table did manage to touch on various overarching themes, which ranged from code implementation and consideration, discussions on innovative technologies, and the future of training for the industry.

The discussion around code implementation and policy changes highlighted various concerns. One of which was ideas around both harmonization and how policy changes can lead various companies to go down a specific path. As the industry moves forward, the discussion also discussed the pros and cons of harmonization in the industry. While the discussion acknowledged that harmonization is an especially important part of moving forward, it must be applied situationally. Blanket harmonization will not completely solve the issues, but do not always overlap with in obvious ways with other regulatory methods.

Recent technology was another large part of the discussion at the various tables. New directions in the industry are led by the creation of technology and the tables discussed the importance of the consumer being just as informed as professionals within the industry. To keep the industry sustainable and adapt to more long-lasting components and structures. The changes must be kept to date with the industry's shift to more environmentally friendly methods. New regulations should create incentives however, and not be punitive. The priorities of the industry should be road mapped so that consumers can also lead the direction. One of the biggest parts of the discussion centered around the training of new members of the industry, as well as these professions more attractive to newcomers. Upskilling as well as making it easier to get tools and start within the industry creates better opportunities for new members of the impression. To work together government and industry can ensure that practitioners are better trained and up to date with the times. Creating interest at the end of high school in the trades was discussed as something considered by the industry.

Overall, the discussion focused on what could be done to ensure that the industry is sustainable and that it is moving towards its goal of net-zero emissions. These discussions agree that focusing on the future is the best strategy for the industry and that cooperation with the government and educational opportunities are the best options.

CONCLUSION

Government and industry benefit when working together. In order to achieve the government's net-zero commitments, we need a pathway for the implementation of technologies that will ease the transition to net-zero and not only address climate change, but improve the lives of all Canadians. We can create this pathway by:

- Highlighting the importance of our industry in the net-zero transition;
    - Highlighting the skilled trades as legitimate, respectable career choice;
    - Bringing trades education into grade schools;
    - Building out existing trades to ensure that all are net-zero-ready;
- Bringing all stakeholders to the table to share their experiences and expertise;
    - Ensuring that we are creating a long-term, sustainable solution;
    - Leveraging international best practices;
    - Using R&D to enable the transition;
- Providing incentives and deterrents to encourage the consumer shift to low-carbon;
    - Presenting the information accessibly, and early;
    - Addressing the realities of cost;
    - Changing the culture; and
    - Outlining realistic timelines and the required technologies to increase the likelihood of a successful transition.

To move forward in our transition to net-zero, we will need to develop three distinct but integrated pathways: **training, technology,** and **consumer.** These pathways will allow us to address the three major issue areas slowing the transition, and will ensure that all levels of government and industry are operating with the same goals and the same tools.

ABOUT US

The Mechanical Contractors Association of Canada (MCAC) is a national, non-profit federation of autonomous provincial associations working for the betterment and advancement of the trade and mechanical contracting industry in Canada. Established in 1895, MCAC is a vibrant and diverse national association serving the needs of mechanical contractors of all sizes engaged in such disciplines as plumbing, heating, ventilation, air conditioning, controls systems, medical gases, welding, and fire suppression primarily within the industrial, commercial and institutional sectors. With offices in each province and 15 regional offices in Ontario, the MCAC is Canada's largest trade contractor Association.

Founded in Montreal in 1933, the CIPH is a not-for-profit trade association that is committed to providing members with the tools for success in today's competitive environment. More than 283 companies are members of this influential Canadian industry association. They are the manufacturers, wholesaler distributors, master distributors, manufacturers' agents, and allied companies that manufacture and distribute plumbing, heating, hydronic, industrial PVF, waterworks, and other mechanical products. CIPH wholesalers operate more than 800 warehouses and showrooms across Canada. Total industry sales exceed $9 billion annually and CIPH members have more than 20,000 employees from coast to coast.

MARKET TRANSFORMATION STATEMENT

CIPH and MCAC support market transformation towards a sustainable and effective lower carbon economy that allows consumers comfort and affordable choices while safeguarding health and safety. Our members' and industry's ability to provide practical and innovative solutions for present and future generations will assist Canadian governmental bodies in achieving climate change objectives, the conservation of our natural resources, the preservation and the protection of our existing built environment. Government and industry benefit when working together. Industry works best when:

- Consulted early in developing policies, pilot and incentive programs, data gathering, standardization and regulation.
- Our collective strength is harnessed to create a collaborative and coordinated approach.
- Given clear, manageable timelines, with appropriate commitment and advance notice.
- A necessary regulatory framework balances costs and measurable benefits; using validated data to support initiatives.
- We consider the whole building as a system.
- We understand the full business/supply chain infrastructure.
- Effective approaches are included for new and retrofit/replacement.