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Development of a

National Standards Strategy



**DRAFT FOR DISCUSSION:**

National Standards Strategy

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# Letter from the Chair

# Context

## The National Standards Strategy

### Time to Renew

This National Standards Strategy (NSS) has been developed to ensure that Canada’s National Standards System is well positioned to support Canadians’ values, aspirations, interests and emerging needs. It identifies the priorities and sectors the Canadian standard system should focus on over the next decade.

It is important to emphasize that this is a strategy for the *system*. The standardization system encompasses a vast network of partners, stakeholders and experts that contribute to standards, conformity assessments and accreditations. While SCC has worked with its standardization partners and stakeholders to develop it, and SCC will play an important role in supporting it, it is a strategy for the system as a whole.

Figure 1: Who's Who in Canada's Standardization System



### Past Strategies

The development of the NSS is not the first national level standards strategy. In 2000, the Canadian Standards Strategy was released. It was subsequently updated for 2005-2008 and then again for 2009-2012. This Strategy contained four goals and 13 objectives that contained outcomes necessary to achieving the overall goals. Key themes that were carried over to the 2009 strategy included:

* Promoting trade/access to markets for Canadian goods and services
* Enhancing the understanding of standardization and the standards system
* Applying standards solutions in support of national priorities and policies

For this NSS, we have attempted to broaden the tent of the system, those we engage, and the ambition of the strategy itself to be more inclusive, move forward with greater agility, and demonstrate the value of standards to Canadians.

## Canada’s Standards System in Context

### Standards and the Standard Setting Process

Standards are used ubiquitous in our society and they can be found almost everywhere, across products, services, activities, and sectors – from making a product, to managing a process, to delivering a service or supplying materials. We find them at work in our light sockets, our children’s toys, the energy we consume, and in myriad other ways as we go about our daily lives.

#### What are Standards?

A standard is a document developed by a committee or group of stakeholders and approved by a recognized body that provides rules, guidelines, characteristics or requirements for products, processes, or services. Standards can be voluntary or mandatory, and national or international. Types of standards include performance standards, prescriptive standards, design standards, management system standards and service standards. They are different from Acts, regulations and codes, although standards are often referenced in those legal instruments.

The development and use of both national and international standards promotes a country’s competitiveness and well-being, by advancing the national economy, supporting sustainable development, benefiting the health, safety, and welfare of workers and the public, assisting and protecting consumers, and facilitating trade and international cooperation.[[1]](#footnote-2)

#### Benefits of Standards

Standards benefit various groups of society including consumers, civil society groups, businesses, and governments at all levels. For consumers and civil society groups, standards help provide safer products and services, enhanced purchasing power, simplicity and compatibility of components purchased, and improved social and economic well-being. While standards keep the consumers safe, increase their purchasing confidence and improve quality of life, standards also benefit businesses and the economy, by helping to foster innovation and provide companies with a competitive advantage. When they are different, they can be a barrier to trade. When they are aligned, they can help facilitate trade. They can also save time and money, and help manage business risk. Standards also help governments oversee a regulatory environment that encourages competitiveness of businesses while ensuring the safety of consumers. Regulators contribute to a reliable and credible standards development process and help satisfy trade requirements by referencing standards in their regulations. By referencing standards in regulation and compliance, governments can save time and costs in drafting regulations and codes. Built-in review cycles ensure that standards remain relevant and adapt to the constantly changing world and environment.

All these dynamics help make standards an engine for attracting investment, driving innovation, and economic growth.

Increasingly, standards are also developed to address broader societal priorities, including priorities such as diversity, equity, and inclusion; environment (e.g., waste management, climate change; flooding), consumer health and safety (e.g., secondhand goods; fire incidents), education, and public health.

#### The Standard Setting Process

Standards are developed through a process of consensus and review by stakeholders from industry, governments, academia, and the public. Such processes begin by identifying needs for a given sector that are then planned for by the relevant organization and committees. For purposes of illustration, the figure below shows the standard development process for a National Standard of Canada.

Figure 2: Standard Setting Process for a National Standard of Canada



This is just one example. Over the past many years, the system has developed a series of flexible and agile processes for standards activities.

### How Canada’s National Standards System is Organized

#### The National Standards System

The National Standards System encompasses a vast network of partners, stakeholders and experts that contribute to standards, conformity assessments and accreditations. Through the collaborative effort of the system’s members, standards help advance the social and economic well-being of the country and safeguard the health and safety of Canadians.

In practice, the boundaries of the system are unclear and hard to define. Organizations beyond those described above develop, implement, and monitor voluntary standards all the time. For instance, the financial sector has standards. Industry consortia also sometimes pool their resources to develop standards independently of the National Standards System to solve business or industrial scale problems.

This creates a challenge – if there is to be a single standard or a single set of standards in a domain, how do we know who is developing it and which standards should be accepted? When two or more bodies are involved in standards setting, there is no longer a single standard. Different standards get set, and different standards setting bodies can be like ships passing in the night. Standards setting requires coordination.

Historically, Canada’s National Standards System has been focused on industrial and technical standards. However, over the past many decades, its focus – as well as those of other organizations that develop, implement, and monitor standards – has broadened to include many other types of standards in the environmental, health and social sectors, among others. This broadened focus has also meant ensuring easier access to standards, more flexibility, and new standards-based documents for users, to ensure that the system is delivering for them.

Recognizing that growth, reaching out to the many organizations involved, and including them in the system is an important motivation and focus for the NSS going forward.

#### SCC and Its Mandate

As noted above, SCC has worked with its standardization partners and stakeholders to develop this NSS, and will play an important role in supporting it. This is in keeping with SCC’s mandate defined in the *Standards Council of Canada Act* as follows:

**4** **(1)** The mandate of the Council is to promote efficient and effective voluntary standardization in Canada, where standardization is not expressly provided for by law and, in particular, to

**(a)** promote the participation of Canadians in voluntary standards activities,

**(b)** promote public-private sector cooperation in relation to voluntary standardization in Canada,

**(c)** coordinate and oversee the efforts of the persons and organizations involved in the National Standards System,

**(d)** foster quality, performance and technological innovation in Canadian goods and services through standards-related activities, and

**(e)** develop standards-related strategies and long-term objectives,

in order to advance the national economy, support sustainable development, benefit the health, safety and welfare of workers and the public, assist and protect consumers, facilitate domestic and international trade and further international cooperation in relation to standardization.[[2]](#footnote-3)

#### SCC’s International Role

SCC is responsible not only for leading Canada’s delivery on domestic standardization priorities, but also internationally. Through the *Act*, SCC is also responsible for:

1. Representing Canada and ensuring effective participation as the Canadian member of the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC), and any other similar international organization;
2. Promoting arrangements with organizations similarly engaged in standards development and conformity assessment in other countries for exchange of information and for cooperation in these activities; and
3. Providing advice and assistance to the Government of Canada in the negotiation of standards-related aspects of international trade agreements.

To fulfil its obligations under the *Standards Council of Canada Act*, SCC has historically linked its work to:

* the priorities of the government of Canada to ensure targeted capacity development activities in regions of focus,
* Canada’s trade objectives, and/or
* industry’s needs, through historical links with the CANC/IEC and industry representatives on mirror committees.

In delivering on this mandate, Canada currently participates and holds leadership roles on 204 ISO and IEC technical committees, including serving as the International Chair, Secretary and Convenor.[[3]](#footnote-4) Additionally, SCC works with over twelve other regional and international standardization organizations and holds cooperation agreements with Bolivia, Brazil, China, Costa Rica, Europe, Mexico, Peru, South Korea, Ukraine, the United Kingdom, and the United States.

## Global and National Trends in Standard Setting

To inform the NSS, SCC sought opinions of key informants and identified a series of key global and Canadian trends that are relevant to Canada’s standards system. These represent both long-standing as well as new trends arising from global developments.

### Global Trends

Key global trends identified are summarized below.

Table 1: Global Standards System Trends

| Global Trend | Key Features |
| --- | --- |
| The rise of the United Nations Sustainable Development Goals (SDGs) in driving the agenda for standard setting | * The UN SDGs are a major driver of standard setting agendas around the world. They consist of 17 goals for 2030 that cover numerous areas, stretching from many areas traditional to standard setting to others that are less well explored.
* The importance of the SDGs, and the role standards can play in supporting their achievement has been recognized by ISO. ISO has identified between 154 to over 12,000 relevant standards for 16 of the 17 SDGs. These can be used to support governments, industry, and consumers contribute to the achievement of each.[[4]](#footnote-5) Canadian SDOs have also undertaken similar research demonstrating the contribution their standards bring to the SDGs.
 |
| The urgency of responding to climate change | * As the most recent Intergovernmental Panel on Climate Change report describes, “Climate change is a threat to human well-being and planetary health. Any further delay in concerted anticipatory global action on adaptation and mitigation will miss a brief and rapidly closing window of opportunity to secure a liveable and sustainable future for all.”[[5]](#footnote-6)
 |
| The impact of the COVID-19 pandemic and the need to sustain recovery from it | * The pandemic has reinforced the need for agility and speed in developing standards
* According to the WTO, two-thirds of notifications by its members in response to COVID-19 are related to standards and regulations affecting trade in PPE, food, live animals and medical equipment.[[6]](#footnote-7)
* At the same time, the pandemic has placed an emphasis on ensuring whole supply chains function effectively and efficiently, which requires thinking about large sets of standards, rather than individual ones in isolation
* The pandemic has changed the process by which standards are developed, in particular by forcing standard development processes to occur remotely – this has had positive impacts (reducing travel and expense burdens for participants) and negative impacts (making it more difficult to forge consensus in meetings, as the benefits of informal in-person discussions are lost)
 |
| The proliferation of different solutions outside the traditional standards system addressing emerging issues, including Environmental, Social and Governance (ESG) issues | * Given the wide-ranging nature of ESG issues, new standards are being developed by a range of domestic and international organizations
 |
| The need for standards in the health and social sectors | * While certain aspects of the health and social sector standard setting (e.g., hospitals and health data standards) are well developed, many others are relatively underdeveloped (e.g., community and long-term care) and require increasing focus
 |
| Ongoing work associated with trade agreements | * Standardization-related obligations embedded in multilateral trade organizations and agreements continue to drive substantial standardization work
* This is the “business as usual” work of standards setting systems and existing international forums
 |
| Supporting key enabling technologies and innovation | * Emerging key enabling technologies such as telecommunications standards (e.g., 5G, 6G), artificial intelligence, cybersecurity, quantum computing, the Internet of Things (IoT), biotechnology, and advanced manufacturing, and smart cities are impacting citizens, industries, and governments of all kinds
 |
| Increasing international security dimensions to standards activities | * With the rise of the digital economy, cybersecurity, privacy, and other forms of security are under threat from a variety of international actors, and security concerns are an increasingly prominent in standards activities
 |
| Concerns about the capacity of the international standards setting system | * Many of the people heavily engaged in standard setting are aging and the associated expertise they carry is at risk of disappearing with them
* There is a need to both transfer the knowledge that many of the experts in these fields have and encourage new participants.
 |
| Limited awareness of the value of standards | * There continues to be limited awareness about the value of standards, their existence, and the need for participation in the system from a range of consumer, industry, and government stakeholders
* This lack of awareness is a barrier to engaging Small and Medium-Sized Enterprises (SMEs) in domestic and international standards system
 |

### National Trends

Canada is affected by all the global trends outlined above. In addition to those, the following table summarizes the trends in our National Standards System.

Table 2: Canadian Standards System Trends

| Canadian Trend | Key Features |
| --- | --- |
| The race to net-zero, emissions reduction, climate change mitigation, and the need for resilient northern infrastructure | * In keeping with the UN SDGs and Paris Agreement, much of Canada’s domestic attention from a standard setting perspective will need to be devoted to developing standards for climate change mitigation and resiliency
* Canada is also committed to achieving net-zero emissions by 2050 through the *Canadian Net-Zero Emissions Accountability Act*.[[7]](#footnote-8)
* The clock is ticking, and Canada has just introduced the 2030 Emissions Reduction Plan, which provides a roadmap for achieving 40-45% emissions reductions below 2005 levels by 2030 – just 8 years from now.[[8]](#footnote-9)
* The need to develop standards that support northern infrastructure in the face of climate change as well as northern, First Nations, Inuit and Métis populations is critical and growing; existing national standards are not always suited to northern circumstances.
 |
| Diversity, Equity, and Inclusion (DEI) | * DEI priorities have been a major focus of the Canadian government and also a focus of recent standards activities (e.g., related to 50 - 30 Challenge)
 |
| Indigenous reconciliation | * Indigenous peoples have specific areas of concern with respect to standards – e.g., climate change, infrastructure, water, and mental health – as well as the need to be engaged in a manner that respects their needs and status as rightsholders
 |
| Cannabis | * Canada is the first OECD country to legalize cannabis, and has emerging standardized needs arising from its regulatory framework
* Canada can also provide expertise to the rest of the world where other jurisdictions take similar steps
 |
| Accessibility of standards | * While most standards can be viewed for free, industry and government continue to have to pay to purchase many standards they might be required to comply with, or they might wish to reference in regulation, which is a barrier to standards use
 |
| Funding for standards Development | * New financial governance mechanisms will be required to support a robust system that can build awareness and spread the use of standards
 |
| Concerns about the capacity of the National Standards System | * Canada has strong technical credibility, market influence through its producers, and is seen as a relatively neutral player on the world stage
* However, Canada is a relatively small jurisdiction with a small population, and its federated model tends to disperse technical expertise, which is affected by the broader global trend of “greying of expertise”
 |

### Implications for the National Standards Strategy

Given the above, in the NSS that follows we attempt to build on our strengths, address weaknesses in the national and international systems, and leverage opportunities where standards can create value, particularly for our broadest economic and social goals.

# Canada’s National Standards Strategy

## The National Standards Strategy on a Page

Given the foregoing, we are pleased to present a summary of the NSS below in .

Figure 5: The National Standards Strategy



Below we explain each of its elements in more detail.

## Our Vision, Mission, and Values

### Vision

***To unlock standards’ full potential to support public policy***

***and deliver benefits for all Canadians.***

Our Vision statement expresses the aspiration that standards will be in much greater use ten years from now and speaks implicitly to individual citizens, consumers, workers, companies, not-for-profit organizations, agencies, boards, commissions, departments, and ministries at all levels of government throughout Canada.

While there is work to do, we have also come along way. In 2000, when the first Canadian Standards Strategy was developed, the system had 4 accredited SDOs with an agenda that focused mostly on product standards, and a relative lack of options in the system to deliver the best possible solution. Today, Canadian stakeholders have a wider range of solution providers, with 13 SDOs accredited by SCC covering a wide range of product and service areas, including emerging technologies.

As outlined above, our focus has evolved over the last two decades, but it needs to grow further. But awareness of the system and recognition of how its standards can be used across Canada is still lacking. We need to build that awareness by reaching out and bringing new stakeholders, organizations, and individuals into the tent.

### Mission

***To support sustainable development, prosperity, health and safety, competitiveness, trade, and effective public policy for all Canadians.***

***In doing so, the system anticipates the diverse needs of Canadian society, and effectively promotes Canadian interests at the international level.***

Our mission reflects what the standards system exists to do, and reflects the main elements of SCC’s system mandate, including sustainable development.[[9]](#footnote-10) While identifying needs is typically the first step in any standards development process, stakeholder consultations told us that, given the changes occurring in society, the economy, and public policy, it is critical for the system to *anticipate* standardization needs, rather than react to them.

The system must also deliver on the standards themselves, along with the accompanying mechanisms – e.g., monitoring, conformity assessment, and others – that make standards stick.

It is also important that, given the widespread nature of standards and their users, that the system builds awareness so that standards and their benefits are known and embraced throughout our society, economy, and public policy. People need to know about standards’ importance, where to find them, and how to use them wherever possible.

### Values

|  |  |
| --- | --- |
| ***Transparency*** | ***Coordination*** |
| ***Openness*** | ***Agility*** |
| ***Impartiality and Consensus*** | ***Diversity and Inclusion*** |
| ***Effectiveness and Relevance*** |  |
| ***Coherence*** |  |
| ***Development Dimension*** |  |

While standards activities are often thought of as a largely technical exercise, values are important to both standardization processes themselves and the countries that engage in them. The values therefore reflect the Principles for guiding World Trade Organization Members in the development of international standards: Transparency, Openness, Impartiality and Consensus, Effectiveness and Relevance, Coherence, and the Development Dimension of standards with respect to developing countries[[10]](#footnote-11), alongside the following values expressed by stakeholders in Canada during our consultations:

* ***Coordination*** – Given Canada’s federated system and the many stakeholders involved, it is critical that Canada’s system be coordinated to avoid conflicting or duplicate standards.[[11]](#footnote-12)
* ***Agility*** – Over and over, we heard that Canada’s system needs to be agile, and that, while consensus building can be a complex process, it is no excuse for not responding to the needs of citizens, public policy, and the market.
* ***Diversity and Inclusion*** – This is a Canadian value shared by many – but not all – countries around the world. In standards activities, it speaks not just to who should participate, but also whose needs must be anticipated.

Taken together, these values constitute a statement of values for the system as a whole.

## Our System Priorities

As many other national standards strategies do, we have developed two sets of priorities – one set concerned with improving the system itself, and another that tells our stakeholders in more tangible terms where our work will focus in terms of sectors. We start below with our system priorities.

### Promote Diversity, Equity, Inclusion and Participation in the Standards System

Our standards system must provide an inclusive environment where all people that live in Canada can participate in the development of standards to support our national well-being and quality of life. To that end, the National Standards System will:

* Develop and promote standards to advance systemic changes to promote inclusiveness, for all Canadians
* Ensure that women, equity-deserving groups, visible minorities, 2SLBTQ+ and/or gender and sexually diverse individuals, and people with disabilities are involved in the setting of standards setting priorities and needs
* Develop mechanisms to ensure that equity-deserving groups, visible minorities, 2SLBTQ+ and/or gender and sexually diverse individuals, and people with disabilities are systematically involved in the standards system and standards development process, irrespective of the subject matter
* Ensure civil society groups are appropriately represented and engaged
* Regularly assess and monitor the representation of the above groups in major standards system activities

Discussion

As the 2021 Speech from the Throne says, “This is the moment to stand up for diversity and inclusion.”[[12]](#footnote-13) The National Standards System has already made progress in this area, most notably in supporting the development of a Publicly Available Specification (PAS) for Canada’s 50 - 30 Challenge.[[13]](#footnote-14)

Canada also has an established commitment to gender equality and has strengthened its gender governance framework by developing institutions, policies, tools and accountability structures that promote gender equality.[[14]](#footnote-15) Preparation of the Federal Budget 2021 was guided by two gender budgeting tools that identify policy gaps and priorities and processes for factoring gender and diversity considerations in decision making.[[15]](#footnote-16) SCC also has a gender strategy to advance gender-responsive standards and gender balance in standards development.[[16]](#footnote-17)

Yet there is more to be done, most notably with respect the core processes that define standards setting activities: defining needs and priorities, encouraging participation in standards development, and monitoring both these processes and the use of related standards. This strategic priority was widely endorsed throughout our stakeholder consultations.

### Support Facilitation of Trade in Goods and Services Through Harmonized Standards Solutions

Part of unlocking the full potential of standards is enabling all levels of government in Canada – federal, provincial, territorial, and municipal – to harmonize their standards as much as possible, both in terms of Canadian and international standards. To that end, the National Standards System will:

* Work to raise the profile of, and educate government stakeholders about, the standards system and its value so that it can better serve public policy makers, legislators, and regulators
* Support common approaches to the incorporation of standards by municipal, provincial, territorial, and federal governments and their partners
* Incorporate best practices from other jurisdictions to promote the incorporation of standards in regulation
* Align federal and provincial support to harmonize adoption of standards across Canada (i.e., one standard for the country where applicable and supported by evidence)
* Promote standards and identify opportunities to address barriers to interprovincial and international trade

Discussion

Harmonized standards for the purpose of commerce are the bread and butter of standards activities around the world. Given Canada’s dependence on international trade and trade within its borders, standards work supporting the free flow of goods and services will always be important. There continues to be a need to standards work related to:

* the alignment of standards within Canada for the Canadian Free Trade Agreement (CFTA) to reduce barriers for companies and consumers;
* a series of Technical Barriers to Trade (TBT) provisions in the Canada-US-Mexico Agreement (CUSMA), that went into force on July 1, 2020; and
* the Canada-European Union Comprehensive Economic Trade Agreement (CETA) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), both of which provide for a variety of labour and other ESG standards, as well as provisions for inclusive trade to ensure benefits are widely shared in member countries.

As noted earlier, we found through research and heard through consultations that while Canada often has success that “punches above its weight” internationally, we often struggle as a federation to harmonize standards and regulations – and even adopt those we have promoted internationally – particularly among provinces and territories. The important work of the Provincial-Territorial Advisory Committee (PTAC) and others needs to continue in as agile a manner as possible, as Canada’s municipalities, provinces, territories, and the businesses that operate in them all work within a larger regional, North American, and global context. This will require ensuring that there is appropriate harmonization that minimizes variation from national and international standards.

At the same time, the National Standards System needs to ensure that, where the standards it produces are to be referenced in regulation by various levels of government, the processes that developed them are sufficiently inclusive and robust to warrant such referencing.

### Ensure Standards System Sustainability

This is a strategy for the system. As noted earlier, the system needs to demonstrate its value, build awareness, counter the “greying of expertise” in standards activities, and establish financial governance mechanisms that permit accessibility while providing a solid foundation for the participants and organizations in the system. To that end, the National Standards System will:

* Demonstrate the value of the system by establishing evidence-based mechanisms to assess the economic and social value of standards, through the development of research partnerships/communities of practice to define and measure systemic changes
* Seek out and develop new partnerships at a leadership level including groups representing Small and Medium-Sized Enterprises (SMEs), Research and Technology Organizations, Research Universities, and Think Tanks, and consumer and other interest groups
* Plan for recruitment, retention and succession planning for Technical Committee members, including training for Technical Committee members to ensure they can be leaders in standards activities nationally and internationally
* Increase and broaden participation in the standards system by increasing the flexibility of stakeholder participation, recruiting and developing experts that can address “crosscutting” topics, and developing a framework to share expertise in these areas across standards system organizations
* Improve access to modern tools and digital technologies in standards development
* Promote fair, transparent, and agile processes governing the standards system
* Ensure the upkeep of modern and robust policies and processes for SDOs
* Explore more sustainable financial models for the development of, access to, and adoption of national standards

Discussion

A sustainable system is one that has the capacity and capabilities to execute on its mission of anticipating standardization needs, delivering on solutions, and making them ubiquitous. But first it must demonstrate value to its many users and stakeholders.

As such, we require more systematic and robust means of articulating the value that standards bring across our society.[[17]](#footnote-18) This can in turn help us develop relationships that are broader and deeper with organizations that drive innovation – SMEs, Research and Technology Organizations, Research Universities, and Think Tanks, and consumer and other interest groups – that can help us anticipate needs, help build awareness, and develop a new generation of experts in Canada that can support standards activities.

We also need to plan for this new generation, with systematic recruitment, retention and succession plans to ensure the vast knowledge of today’s participants is passed on. COVID-19 has taught us that we can use new tools and bring in new participants in a way that was previously not thought possible.

Training will also be required to ensure that these participants can become leaders nationally and internationally that can also approach standards activities that are “cross-cutting” or encompass entire sections of a supply chain – thinking that COVID-19 has also taught us the importance of.

Finally, the financial governance mechanisms of the National Standards System need to be reconsidered. We heard strongly that fee-based standards inhibit the use of standards, even as they are essential to the financial sustainability of organizations in the system. If fee-based barriers are to be reduced or eliminated without impinging on the independence of organizations in the system, alternative financial governance mechanisms need to be explored. In the meantime, we need to ensure that SDO processes and system governance processes are as agile as they need to be.

### Strengthen Engagement with Indigenous Peoples

Indigenous Peoples – First Nations, Inuit and Métis – are rights holders, both as individuals and governments.[[18]](#footnote-19) Through its commitment to the UN SDGs and reconciliation, Canada is committed to working with Indigenous Peoples as individuals and self-governing nations. Indigenous Peoples’ needs from a standards perspective must be better understood, so the system must engage with them to ensure they benefit from and participate in the system.

To that end, the National Standards System will:

* Establish consistent and respectful mechanisms to engage with First Nations, Inuit and Métis groups and ensure full participation in the processes of the standard system
* Work with First Nations, Inuit, and Métis groups to identify standards priorities
* As part of efforts to ensure that the composition of individuals within the standards system reflects Canadian society, identify, and implement initiatives to actively invite involvement of First Nations, Inuit and Métis as rightsholders across all areas of the standards system

The system needs to anticipate needs generally, and it is especially important today that we begin to understand Indigenous Peoples’ needs better. We know, for example, that Indigenous Peoples have particular concerns that bear on standards activities that include climate change, northern infrastructure, data governance, mental health and wellness, business development and SMEs. But we do not yet understand the full scope of their needs and concerns.

To understand those needs, we need to establish consistent and respectful mechanisms to engage Indigenous Peoples, and we recognize that this is a significant undertaking. Partnerships with Indigenous Peoples must be driven by clear needs and goals for standards activities.

## Our Sector Priorities

In addition to the System Priorities above, we are also proposing four Sector Priorities where we expect standards to have wide-ranging effect on our innovation and competitiveness, while addressing national standards needs, and the needs of Canadians. These are areas where, based on background research and stakeholder consultation, we believe standards activities will help:

* address emerging needs such as ESG, Net Zero and Climate Change, pandemics and other crises;
* innovation and competitiveness for Canadian industry, and SMEs in particular, by reflecting the modern digital, service and goods composition of Canada’s national economy
* general health and well-being; and
* increased consumer confidence.

For more on how these were developed, see Appendix C: National Sector Prioritization.

### Climate Change Mitigation and Resilience

In keeping with the UN SDGs and Paris Agreement, much of Canada’s domestic attention from a standard setting perspective will need to be devoted to continuing to develop standards witrh respect to climate change, including carbon emissions capture, mitigation and adaptation to build resiliency. As the Speech from the Throne noted, “this is the moment for bolder climate action with an emphasis where growing the economy and protecting the environment go hand in hand.” Canada is committed to achieving net-zero emissions by 2050 through the *Canadian Net-Zero Emissions Accountability Act*.[[19]](#footnote-20) The clock is ticking, and Canada has just introduced the 2030 Emissions Reduction Plan, which provides a roadmap for achieving 40-45% emissions reductions below 2005 levels by 2030 – just 8 years from now.[[20]](#footnote-21)

Standards activities in this area could include but would not be limited to:

* Energy, including nuclear, hydrogen, biofuel, and marine energy technologies
* Building design and construction standards to reduce carbon content, improve thermal performance, and adapt to change weather patterns, rising sea levels, and weather events that are becoming more extreme
* Focus on fuel cell, EV charging and infrastructure standards in providing sufficient capacity to support the growing conversion of fossil-fueled transportation to electrical power
* ESG financial reporting standards to facilitate consistent emission reporting nationally and across international boundaries as companies and governments focus attention on reducing their carbon footprint to reduce global warming
* Standards that support northern infrastructure in the face of climate change as well as northern, First Nations, Inuit, and Métis populations

### Digital Economy & Advanced Manufacturing

In the modern economy, there are a series of emerging key enabling technologies such as:

* Telecommunications standards (e.g., 5G, 6G);
* Artificial intelligence;
* Cybersecurity;
* Quantum computing;
* Internet of Things;
* Biotechnology; and
* Advanced Manufacturing.

among others that enable what has broadly been described as Industry 4.0.[[21]](#footnote-22) These trends will impact organizations in ways including paperless documentation; real-time equipment control and monitoring (industrial internet of things), smart processes and machine (AI) identification of maintenance needs or defects; 3D printing and rapid prototyping, etc.[[22]](#footnote-23) This tends to raise the stakes of the importance of the standards for such technologies, not only because the technologies themselves are important, but because they underpin how other industries work and potentially their standards as well. They are also engines of innovation and economic growth and have security and military implications as well. Many of them heavily influence both goods and services sectors or blur the line between whether a sector is seen as providing goods or services.

They also give use to the need for standards in data governance and data privacy. In this digital world, Canadians must be able to trust that their privacy is protected, that their data will not be misused, and that companies operating in this space communicate in a simple and straightforward manner with their users. This trust is the foundation on which our digital and data-driven economy will be built. Canada’s Digital Charter[[23]](#footnote-24) outlines 10 principles on which this trust can be built.

We propose that the National Standards System focus on the digital economy and advanced manufacturing by:

* Prioritizing building capacity, capability, and international influence in related sector
* Focus relationship building, partnership, and technical committee member recruiting efforts in these sectors

### Health, Well-Being and Safety

Health and well-being have been longstanding priorities of governments in Canada, with 32.7% of the provincial, territorial, and local governments spending being in health in 2019.[[24]](#footnote-25) Through the COVID-19 pandemic, spending in many of these areas has increased.

Following from the Speech from the Throne in November 2021, the priority remains getting the pandemic under control. That requires speed to market of approvals and new standards for vaccine development. Additional priorities include accessibility, care in rural communities, long-term care, and on improving data collection across health systems to inform future decisions and get the best possible results.

The Federal Budget 2021 will be investing in improving standards in long-term care, supportive care, and mental health over the next few years. Also included in the budget is a commitment of $41.3 million over six years (starting 2021-2022) and $7.7 million in ongoing investment to improve data infrastructure and data collection on supportive care, primary care, and pharmaceuticals.

Early learning and childcare is also a recurring priority of the federal government, with the recent budget proposing new investments of up to $30 billion over 5 years, and $8.3 billion on going. This includes specific reference to Indigenous early learning and childcare. The proposed investments will require collaboration between the federal government and provincial/territorial partners to achieve broad goal related to more affordable, high-quality childcare.

Consultations with key informants noted that despite the significant federal and provincial expenditures in the health and social sectors, there are limited standards in place. The potential benefits of increasing the use of standards in these sectors was considered to be significant. Key informants suggested that standardization would not only support the achievement of more consistent pan-Canadian outcomes for the recipients of these services but could facilitate investment in the services. By establishing national standards in these areas, investment (i.e. transfers from the federal government to provinces; agreements with service providers) could be based on the use of national standards.

Beyond the above, there are many other dimensions of health, well-being and safety that need to be considered in setting standards priorities in our modern society, particularly where consumer goods and services, cybersecurity, privacy, and data governance of personal information are concerned. Safety – in real life and online – continues to be of great importance in driving standards activities.

### Supply Chain Stability

COVID-19 has made us all aware of the fragility of our supply chains of all kinds. Through our consultations, we heard about this concern frequently, and how standards activities also need to consider standards as part of larger systems. We also heard that getting supply chains back to (a new) normal will take years, and there is much to do.

Given the importance of transportation, logistics, wholesale commerce, and retail commerce to our economy and society, we believe that this is an area where standards activities should focus in the future by:

* developing new lenses for standards from an overall supply chain perspective; and
* prioritizing standards that will help support the stability of domestic and international supply chains.

# Conclusion

In this NSS, we have attempted to articulate a Vision, Mission, set of Values, and series of System and Sector Priorities that we propose should guide Canada’s National Standards System over the next decade. We invite you to review and comment on this draft, and then join us in elaborating upon, implementing, and building toward this Vision in the years to come.

# Appendix A: How the National Standards Strategy Was Developed

## Governance

SCC has worked with its standardization partners and stakeholders to formulate the NSS. As such, the following two committees were established to guide the project:

* An NSS Steering Committee comprised of members of SCC’s Executive and Senior Management Teams
* A NSS Advisory Committee (see Appendix D: Advisory Committee Members) comprised of representatives of:
* SCC Council
* SDOs
* Industry
* Public Interest and Civil Society
* Federal Government
* Provincial and Territorial Government
* Academia

The Steering Committee oversaw all aspects of the project. The Advisory Committee was engaged at key junctures to provide advice on the project, including reviewing background research, stakeholder consultation approach and results, and the NSS.

An SCC Project Team executed the NSS development, with support from consulting firm Optimus SBR.

## Approach

### Development of the National Standards Strategy in the Context of ISO Methodology

This NSS has been developed using an approach broadly aligned to the methodology outlined by The International Organization for Standardization (ISO) in its *National Standardization Strategies* document.[[25]](#footnote-26) As it outlines, the purpose of an NSS is to “identify and prioritize the needs of a country that can be addressed through standardization” and the development of an NSS includes an analysis and identification of national priorities for the economy, trade, societal issues and longer-term development plans at the national or sector-level.[[26]](#footnote-27)

While the ISO methodology is primarily oriented towards developing countries[[27]](#footnote-28), it provides a useful framework for approaching Canada’s NSS. In particular, it distinguishes between two phases of work:

* Phase 1 that focuses on the identification of national priorities for standardization; and a
* Phase 2 during which these priorities are mapped to existing standards.[[28]](#footnote-29)

This “First Draft” of the NSS can be considered Phase 1 of the process, particularly because in Canada, the National Standards System is distributed across a range of organizations, rather than a single authority which both identifies standardization priorities and carries out the standardization work and projects directly, which is the case in many other jurisdictions.

The ISO document also outlines that:

The process of prioritization relies on two main sources:

▸ The analysis of the economic and societal conditions of a country, import and export trade, as well as of development plans of governmental agencies, international trends that affect the country and other key factors that are likely to have a significant impact on the present and future.

▸ The engagement of stakeholders from business, academia, consumers, government agencies with a view to obtaining their views and priorities for standardization work.[[29]](#footnote-30)

The document also emphasizes that this is an *iterative process*, consisting of socioeconomic analysis and stakeholder outreach, engagement, and consultation, as shown below in Figure 4:

Figure 4 : ISO National Standardization Strategy Figure - Phase 1 of NSS Development[[30]](#footnote-31)



 Given this iterative process, the analysis and findings in this document can be augmented as the reviews are undertaken and additional consultations take place.

### Research Methods

#### Background Research

To begin this iterative process, background research was conducted that included:

* key informant interviews; and
* analysis of major economic sectors and “non-economic” (in ISO terminology) sectors, including: climate change, infrastructure and the environment, gender equality, health care and social assistance, educational services, the public sector, and management

that informed the Global and National Trends in Standard Setting portion of this NSS.

The results of this analysis were combined with the results of stakeholder consultations outlined below to develop the high-level Sector Priorities included in this NSS.

For an analysis of how sector analyses from an economic perspective were combined with results of stakeholder consultations, see Appendix C: National Sector Prioritization.

More detailed articulation of Sector Priorities from an international perspective will be included in the accompanying ISDR.

#### Stakeholder Consultation

To support identification of national priorities, the NSS Steering Committee and Advisory Committee set out the following objectives for stakeholder outreach, engagement, and consultation:

1. Ensuring the NSS development process is an inclusive one
2. Creating buy-in for the content and implementation of the NSS
3. Obtaining substantive input on potential strategic system and sector priorities for the NSS
4. Building awareness of the importance and opportunities associated with the NSS and standard setting more broadly

Optimus SBR worked with the SCC Project Team, NSS Steering Committee and NSS Advisory Committee to identify a wide and diverse set of stakeholder groups in the National Standards System that were engaged through:

* focus groups;
* individual interviews; and/or
* written feedback.

In advance of the consultations, stakeholders were provided with pre-reading materials that included:

* a summary of background research findings; and
* an early draft Vision statement, elements of the Mission to consider, and 11 potential Strategic Priorities.

Facilitators and interviewers emphasized that all material provided in advance of the consultation was for discussion and input, and stakeholders were encouraged to identify items they agreed with, disagreed with, though were missing, or needed to be enhanced. All participants were provided the opportunity to respond with additional thoughts or concerns following their focus groups or interviews.

Initially, a broader array of focus groups was contemplated. Consultations began in November 2021 and continued through March 2022, and were challenged for scheduling by the Omicron variant wave of the COVID-19 pandemic, which resulted in the combined approach of focus groups, interviews and written submissions outlined above.

Across all consultation modes, individuals from over 40 organizations outside of PTAC, SDOAC and internal SCC stakeholders were engaged. For a detailed list, see Appendix B: Stakeholders Consulted to March 4th, 2022.

SCC will also be reaching out to a variety of stakeholders following the March 31st submission of this “First Draft” NSS document.

# Appendix B: Stakeholders Consulted to March 4th, 2022

## Focus Groups Completed

Table 3: Focus Groups Completed

|  |  |  |
| --- | --- | --- |
| Focus Group | Participants | Date |
| SDOAC |  | 3-November-2021 |
| SCC SSEB-SIRB Engagement (SCC led) |  | 13-January-2022 |
| PTAC |  | 26-January-2022 |
| Accessibility (SCC Facilitated with Accessibility Standards Canada) |  | 3-February-2022 |
| Consumer Interests | Nine (9) participants representing:Consumer Protection BCPublic Interest Advocacy CentreConsumer Council of CanadaCMC for ISO/COPOLCOCity of Peterborough (Building Department)City of Kitchener (Building Department) | 12-January-2022 |
| Consolidated Focus Group | Nine (9) participants representing:Canadian Chamber of CommerceDigital Identification and Authentication Council of CanadaCanadian Processional Logistics InstituteOpen Geospatial ConsortiumIEEEEngineers and Geoscientists British Columbia | 2-February-2022 |
| Diversity, Equity, and Inclusion Priorities Focus Group | Eleven (11) participants representing:Canadian Centre for Diversity and InclusionWomen Building FuturesCanadian Council on Rehabilitation and WorkCycle Capital ManagementRick Hansen FoundationAccessibility Standards CanadaPride at WorkWomen Entrepreneurship Knowledge Hub | 3-February-2022 |
| SCC Executive Management Committee |  | 8-February-2022 |

## Interviews Completed by Optimus SBR

Table 4: Interviews Completed

|  |  |
| --- | --- |
| Organization | Date |
| Canada Green Building Council | 7-February-2022 |
| Canadian Institute for Health Information | 7-February-2022 |
| CPA Canada | 16-February-2022 |
| CSA | 9-February-2022 |
| First Nations Information Governance Centre  | 3-March-2022 |
| Health Canada | 16-February-2022 |
| Health Standards Organization | 10-February-2022 |
| ICES and Health Data Research Network Canada (HDRN) | 8-February-2022 |
| Innovation, Science and Economic Development (ISED) Canada | 8-February-2022 |
| Intact Centre | 27-January-2022 |
| Natural Resources Canada (GeoConnections Program) | 1-February-2022 |
| Statistics Canada | 4-March-2022 |
| Transport Canada (Director, Regulatory Modernization) | 1-February-2022 |
| Transport Canada (RPAS Technical Standards) | 9-February-2022 |

## Written Submissions Received

Table 5: Written Submissions Received

|  |  |  |
| --- | --- | --- |
| Organization | In Lieu of Meeting | In Addition to Meeting |
| Advisory Committee Meeting – Individual Participant |  | Yes |
| CAN/IEC Council Meeting |  | Yes |
| Consolidated Focus Group – Individual Participant |  | Yes |
| Consolidated Focus Group – Individual Participant |  | Yes |
| Consumer Council of Canada |  | Yes |
| Consumer Interests Focus Group – Individual Participant  |  | Yes |
| Electro Federation Canada  | Yes |  |
| National Research Council Canada |  | Yes |
| Natural Resources Canada |  | Yes |
| Northern Cables Incorporated | Yes |  |
| SCC – CANC-IEC Policy Committee Meeting |  | Yes |
| Supply Chain Canada  | Yes |  |

# Appendix C: National Sector Prioritization

## The ISO Approach

The ISO methodology recommends using a ranking scheme like the following to prioritize socio-economic priorities:

Table 6: ISO Socio-Economic Ranking Approach[[31]](#footnote-32)

|  |  |  |  |
| --- | --- | --- | --- |
| Rank | Economic Priorities | Non-economic priorities (social, environmental, or other) | Priorities derived from national or sectoral development plans |
| 1 | Very important & urgent | Very serious & urgent problems, public outcry | Great importance in the near future |
| 2 | Highly important | Serious problems, common occurrence, media attention | Great importance, if conditions apply |
| 3 | Moderately important | Serious problems, some media reports | Importance in the medium term |
| 4 | Of secondary importance | Problems are localized, no media reaction | Important in the long term |
| 5 | Not important | Other issues | Unimportant |

As noted earlier, the ISO methodology was developed primarily for developing countries. For industrialized democracies like Canada, non-economic priorities are diverse, as are priorities derived from national or sectoral development plans. However, the ISO methodology also provides for “overriding priorities” marked as “1\*”.

This “First Draft” articulates Sector Priorities that can be understood as “overriding priorities” based on a combination of Economic Priorities and Non-Economic Priorities through a combination of background research, the Speech from the Throne, ranking sectors in terms of economic importance, and results of stakeholder consultations. While stakeholder consultations did not always get to the level of sector priorities, they did frequently articulate “overriding” public policy concerns and problems. This has resulted in:

* certain System Priorities – i.e.:
	+ Promote Diversity, Equity, Inclusion and Participation in the Standards System; and
	+ Strengthen Partnerships with Indigenous Peoples, and
* Sector Priorities:
	+ Climate Change Mitigation and Resilience;
	+ Digital Economy and Advanced Manufacturing;
	+ Health, Well-Being and Safety; and
	+ Supply Chain Stability.

Below, we outline how economic priorities were considered in developing Sector Priorities.

## From Economic Priorities to Sector Priorities

Canada’s economy of $1.98 trillion is largely based on service-producing industries, which account for approximately 71% of GDP. Manufacturing, mining, quarrying and oil and gas extraction (i.e., energy) are the second and third largest sectors of the economy.

To consider which sectors might be considered “overriding” or “Sector Priorities”, we followed the ISO methodology and outlined Canada’s major economic sectors in terms of importance with respect to GDP, employment, exports, and imports using the following ranges:

Table 7: Quantitative Rankings for Economic Indicators

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Rank | 1 | 2 | 3 | 4 | 5 |
| Percent Contribution to GDP, Employment, Exports, or Imports | ≥10% | 5-9.9% | 1-4.9% | 0.2-0.9% | <0.2% |

Note again that a rank of “1\*” is an “overriding priority” while ranks of 1 and 2 are still to be considered “Very important & urgent” or “Highly important” from this perspective.

Using Statistics Canada data from 2014-2018, we developed rankings for the largest sectors of the Canadian economy along with associated considerations for overriding priorities, as shown below in Table 6.

Of note, the Statistics Canada data include, at a lower level of aggregation, estimates of:

* The Digital Economy, which captures, with limitations, digital goods and services, but does not capture, for instance, “A data analyst or computer engineer working in the agriculture industry” or other digital inputs into non-digital final goods and services;[[32]](#footnote-33)
* Environmental and Clean Technologies, or goods and services that reduce environmental impacts. These are divided into two categories: “…environmental goods and services (including clean electricity from renewable sources and nuclear power generation, biofuels and primary goods, and waste management and remediation services), and clean technology goods and services (including manufactured goods, scientific and research and development services, construction services, and support services). Examples of clean technology goods and services include solar panels and the design and construction of energy-efficient buildings.”[[33]](#footnote-34)

These two line items provide cross-cutting estimates of the size of these sectors.

Table 8: Economic Sectors and Overriding Priority/Sector Priority Considerations

| Economic Sector | GDP Rank | Employment Rank | Exports Rank | Imports Rank | Overriding Priority/Sector Priorities Considerations |
| --- | --- | --- | --- | --- | --- |
| Real Estate and rental and leasing | 1 | 3 | 4 | 3 | * Building codes and standards are not the same
* Very important sector of the economy; also important from an employment perspective
* Climate change standards highly relevant to this sector
 |
| Manufacturing | 1 | 2 | 1 | 1 | * Very important sector from GDP, employment, and trade perspective
* Highly impacted by Industry 4.0 and advanced manufacturing trends which are critical to innovation
* Area of focus for ISED Advanced Manufacturing Supercluster
* Stakeholder consultations emphasized importance of ability of standards to spur innovation and competitiveness
 |
| Mining, Quarrying, and oil and gas extraction | 2 | 3 | 4 | 3 | * Highly important sector to the economy from GDP and employment perspective
* Important area of focus for ISED Ocean Innovation Supercluster
 |
| Construction | 2 | 2 | N/A | 2 | * Very important sector of the economy; also important from an employment perspective
* Climate change standards highly relevant to this sector
 |
| Health care and social assistance | 2 | 1 | 5 | 5 | * Highly important sector to from GDP perspective and very important from employment perspective
* Background research indicated there remains large potential for standards work in this sector
* Highly relevant to COVID-19 pandemic recovery and pandemic preparedness
 |
| Finance and Insurance | 2 | 3 | 3 | 3 | * Highly important sector, but not traditionally part of the National Standards System
* ESG priorities, 50-30 Challenge relevant to this sector
 |
| Public Administration | 2 | 2 | N/A | 2 | * Central to Vision and Mission of the National Standards System; not a sector priority *per se*
 |
| Professional, scientific and technical services | 2 | 2 | 3 | 3 | * Highly important sector to the economy from GDP and employment perspective
* Includes research and development of many kinds – critical to innovation and competitiveness
* Focus of much existing standards work
 |
| Educational Services | 2 | 2 | 4 | 4 | * Highly important from GDP and employment perspective
* Not traditionally a focus of National Standards System
* No prominent national government priorities related to education standards activities
 |
| Wholesale Trade | 2 | 3 | 2 | 5 | * Highly important from a GDP perspective and moderately important from employment perspective; highly important to exports
* Stakeholder consultations emphasized importance of supply chains as a whole during and after COVID-19
 |
| Retail Trade | 2 | 1 | 5 | 5 | * Highly important from GDP perspective and very important from employment perspective
* End point of many supply chains
 |
| Transportation and Warehousing | 3 | 2 | 2 | 3 | * Moderately important from GDP perspective and highly important from employment and exports perspective
* Critical to supply chains across the country
 |
| Information and Cultural Industries | 3 | 3 | 4 | 4 | * Moderately important from GDP and employment perspective
* In combination with Digital Economy, very important to the economy
 |
| Administrative and support, waste management and remediation services | 3 | N/A | 3 | 3 | * Moderately important from GDP perspective
* Central component of Environmental and Clean Technology sectors
* Highly related to climate change, NetZero efforts
 |
| Agriculture, forestry, fishing and hunting | 3 | 3 | 3 | 3 | * Moderately important to economy
* Important for future growth and innovation (e.g., ISED Protein Industries Innovation Supercluster)
* Important for environmental, climate change agenda
 |
| Utilities | 3 | 4 | 4 | 5 | * Moderately important from economic perspective
* Strong area of focus for existing standards work
 |
| Accommodation and food services | 3 | 2 | 3 | 3 | * Moderately important from GDP perspective, highly important from employment perspective
* Relevant to standardization from food safety perspective
 |
| Other services (except public administration) | 3 | 3 | 5 | 4 | * Moderate to secondary importance
* Not major area of focus for standardization
 |
| Art, entertainment, and recreation | 4 | 4 | 4 | 4 | * Secondary importance from economic perspective
 |
| Management of companies and enterprises | 4 | 4 | N/A | N/A | * Secondary importance from economic perspective
* Relevant to ESG standards
 |
| Cannabis Sector | 4 | N/A | N/A | N/A | * Secondary importance from GDP perspective
* Consultations did not yield great interest or concern with respect to this sector, despite early identification as trend in background research
 |
| Digital Economy[[34]](#footnote-35) | 2 | 3 | N/A | N/A | * Given importance of these key enabling technologies, highly relevant to innovation, competitiveness of economy based on background research and consultations
* Given definition, highly important from GDP perspective, but moderately important from employment perspective; however economic importance is underestimated given definition and cross-cutting nature of technologies becomes very important in context of manufacturing and many sectors above
* ISED Innovation Supercluster priority (Digital Technology, Scale AI)
 |
| Environmental and Clean Technology Products Economic Account[[35]](#footnote-36) | 3 | 3 | 3 | 3 | * Moderately important from GDP and employment perspective
* Highly relevant to very important economic sectors (i.e., real estate, construction) and many others
* Very important from UN SDG and Canadian priority perspective
* Extensive commentary and support from stakeholder consultations
 |

Based on the above, we are proposing four Sectors as overriding priorities that encapsulate the considerations above:

* Climate Change Mitigation and Resilience;
* Digital Economy and Advanced Manufacturing;
* Health, Well-Being and Safety; and
* Supply Chain Stability,

which are detailed in the main body of the NSS.

# Appendix D: Advisory Committee Members

Advisory Committee Members are as listed below in Table 9.

Table 9: NSS Advisory Committee Members

| Category | Name | Affiliation |
| --- | --- | --- |
| SCC Council | Kathy Milsom | Independent |
| Brent Schacter | CancerCare Manitoba |
| François Coallier | École de technologie supérieure |
| Standards Development Organizations (SDOs) | Maria Iafano | UL |
| Mary Cianchetti | CSA |
| Jean Rousseau | BNQ |
| Annick Lapointe | CGSB |
| Industry | Shawn Paulsen  | CANC/IEC |
| Elizabeth Keller  | Amazon |
| Sheila Leggett | ISO/TC 207 Chair |
| Jeffrey Hunt | SHEA Global |
| Philip Dawson | Responsible AI Institute |
| Patricia McCarney  | World Council on City Data – Smart Cities |
| Carol McGlogan | Electro-Federation Canada |
| Jason McLinton/Cory Anderson  | Retail Council of Canada |
| Jarred Cohen | Canadian Chamber of Commerce |
| Public Interest and Civil Society  | Merlin Chatwin | Open North |
| Aubrey LeBlanc  | MC COPOLCO |
| Government (Federal) | Kendal Weber | Health Canada |
| Mylaine Des Rosiers | Transport Canada |
| Jennifer Miller  | ISED |
| André Loranger | Statistics Canada |
| Government (Provincial/Territorial) | Jim Boyden | Government of Ontario |
| Gary Sawchuk | Government of Manitoba |
| Jeff Dolan | Government of Nova Scotia |
| Academic | Kernaghan Webb | Ryerson University |
| Stepan Wood | University of British Columbia |

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2. Standards Council of Canada Act. *Statutes of Canada,* c. S-16, Canada. Department of Justice. 1985. *Department of Justice.* [↑](#footnote-ref-3)
3. Ibid. [↑](#footnote-ref-4)
4. ISO (2018). Contributing to the UN Sustainable Development Goals with ISO Standards. Geneva, Switzerland. [online: web] URL: <https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100429.pdf>. [↑](#footnote-ref-5)
5. IPCC (2022). Climate Change 2022: Impacts, Adaptation and Vulnerability. Summary for Policymakers. [online: web] URL: <https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf>, p. 35. [↑](#footnote-ref-6)
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8. Government of Canada (2022). Canada’s climate plans and targets. [online: web] URL: <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/climate-plan-overview.html>. [↑](#footnote-ref-9)
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