Smart Prosperity Institute

EXPERT PANEL ON SUSTAINABLE FINANCE

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JOINT SUBMISSION

IBC BAC | Insurance Bureau of Canada / Bureau d'assurance du Canada

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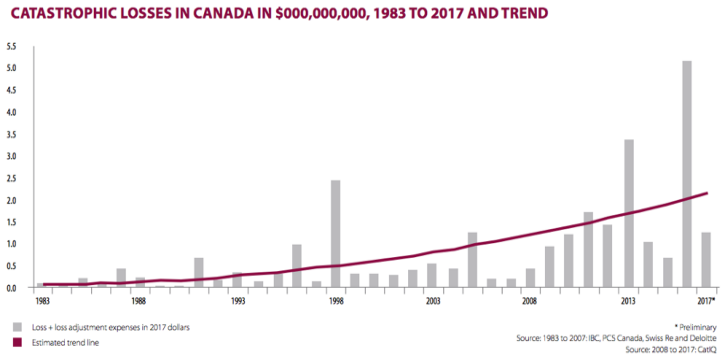
Insurers have been early actors in warning society, particularly the corporate world, about the potential financial impacts of climate change, with Munich Re's first warnings about global warming dating back to 1973.[1] The property and casualty (P&C) insurance and reinsurance sectors face significant risks associated with the consequences of climate change, primarily from weather-related catastrophe claims, but also through the related impacts on their $113.9 billion of invested assets.[2]

The frequency and severity of weather-related catastrophic events and associated insurance claims have risen significantly in the last decade, with projections pointing to a continued escalation as global average temperature continue to rise. The 2016 Fort McMurray wildfires alone resulted in over $3.7 billion in insurance claims, representing the costliest insured natural disaster in Canadian history. Canadian insurers are now facing claims on natural catastrophes (e.g., wildland fires, floods, hail and windstorms) of at least $1 billion annually (2018 saw $1.9 billion in insured damage), up from an average of around $400 million annually a decade earlier.[3]

Increasing demand for insurance will only be met if the Canadian (and global) insurance market has the capacity to underwrite these new risks, where international climate events can also impact the industry's health as a whole. Identification and mitigation of local climate risks are essential to ensure local markets remain insurable.



There is significant value to the P&C insurance sector to partner across the financial sector to identify and mitigate risk exposure to and to build shared resiliency. As such, the P&C industry has taken, and will continue to take, a leading role in the fight against climate change and is increasingly aligning investments with low-carbon pathways.

This submission responds to four specific areas cited in the interim report:

4.1 Energy Efficiency and Resiliency Retrofits
3.2 Reliable Information
3.3 Effective Climate Related Disclosures
4.7 Green and Transition Related Financial Products

[1] Munich Re, Fight Against Climate Change, online at: https://www.munichre.com/topics-online/en/2015/11/fight-against-climate-change
[2] IBC, 2018 Facts, online at: http://assets.ibc.ca/Documents/Facts%20Book/Facts_Book/2018/IBC-Fact-Book-2018-Section1.pdf
[3] Ibid at 17-25

1. Building Resiliency to Climate Impacts through Retrofit Financing

(see Interim Report - Financial Markets/Products: 4.1 Retrofits for Energy Efficiency and Resiliency)

While governments can reduce climate related risks by upgrading infrastructure and other community defenses, property owners have fewer choices about how they can prepare their homes and businesses for climate extremes. Since insurance is essentially the pooling of identified risks, the insurance industry is skilled at finding ways to reduce risks and can apply economic incentives to encourage policyholders to adopt tangible solutions.

For example, the insurance industry helped improve the uptake of the car seatbelts in the 1980s by increasing compensation payments for clients injured or killed in motor vehicle crashes while using a seatbelt. Likewise, innovation into auto theft prevention greatly improved when insurance companies began offering a premium payment reduction with a good car alarm.

These types of financial incentives could be applied to climate resilience technologies (e.g., fire resistant roofing; back-flow valves, rapid-response water gates, and property barriers for flooding). Likewise, incentives could be implemented for climate beneficial behaviour (e.g., clearing eavestroughs, ensuring proper lot grading, etc.).

Retrofitting homes and businesses to be more energy efficient would benefit the P&C insurance industry by helping to reduce greenhouse gas (GHG) emissions responsible for future climate change impacts. Of more immediate interest, retrofits or the acquisition of technologies that improves a property's climate resilience would reduce risk to homeowners, governments and insurers.

Many retrofit investments require long term loans to cover upfront costs, since the initial cost is high and savings to the consumers occur over a longer time horizon; for example, as electricity and home heating fuel is saved or as property losses are averted. The long-term nature of these types of loans, along with the relatively small loan amounts, can prove unattractive to lenders under traditional financing mechanisms. To provide alternative funding, these illiquid sustainable loans can be aggregated and repackaged into a more liquid format, such as sustainable asset-backed securities, to appeal to sustainable investors in global capital markets, lowering risk for the lenders.

Green Mortgage Programs have traditionally allowed for low interest borrowing to pay for energy efficient upgrades, but could be extended to finance the uptake of technologies that add to climate resilience. The upfront capital costs can be added into the initial mortgage or rolled into an existing mortgage through refinancing, keeping interest rates low.

Preferential loan or mortgage rates for new green/resilient or retrofitted real estate can provide an additional financial incentive for homeowners and businesses. Substantial benefits to the borrower occur when lending institutions offer lower interest rates or easier qualification requirements for green lending. For example, the UK Green Finance Task Force has made green lending a key recommendation as part of greening the financial system.[4] Large UK based financial institutions such as HSBC, Barclays, and Sainsburys, have all committed to significant green lending.[5]

The Government should consider facilitating green loans through existing agencies. The Canadian Mortgage and Housing Corporation (CMHC) could mandate disclosure of energy efficiency and physical risk vulnerability for the sale and lease of residential homes and businesses. They could also backstop a securitized loan market. Crown corporations such as the Business Development Bank of Canada or the new Canada Infrastructure Bank could be used to facilitate loans and already have an existing client base, contact lists and industry knowledge.

Insurance companies would be interested in exploring the facilitation of such loans (currently precluded by regulation). Retrofits would not only lower energy-related emissions and increase resiliency to climate events, but could also have important human health benefits that could help reduce insurance related risks further. **The Expert Panel should recommend that the government work closely with the P&C insurance industry on developing a sustainable loan system for retrofits.**

The federal government could also improve taxation rebates and incentive programs to help offset the cost of retrofit programs.[6] **Any requirements for loan guarantees or taxation rebate programs for retrofits, should consider improvements in climate resiliency indicators in the same way as existing programs measure improvements in energy efficiency.**

IBC's advocacy helped lead to the inclusion of climate change resiliency in Canada's building codes. Work is already underway to update some of the building, plumbing, fire and energy codes set by National Research Council (NRC) to reflect the increase in severe weather, which includes intense rain, snow and flooding. **Building codes and equipment standards should be updated regularly to continually reflect new technological innovation and the evolution of cost-effective solutions. Furthermore, industry associations in the financial sector should advocate that all provinces adopt these changes as they are released, beginning in 2020.**

Finally, the Federal government should take a lead on public procurement and ensure that all federal buildings are low carbon and climate resilient. Government departments and their agencies occupy a significant portion of building stock, whose annual water and energy costs are

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[4] Sir Roger Gifford, Chair, Green Finance Taskforce, Accelerating *Green Finance, A report to Government by the Green Finance Taskforce* (March 2018) at 45

[5] Sainsbury, *Annual Lender Report No.4 Corporate 'Green' Loan*, (May 2018), see also *Green Loan Framework*, (16 July 2014), Barclay's, *Green Product Framework*, (August 2017)

[6] Brotman, B. A., "The impact of corporate tax policy on sustainable retrofits" (2017) 19:1 Journal of Corporate Real Estate 53-63

substantial, with significant opportunity for life cycle cost savings.[7] There is an opportunity to lead by example, and ensure that public building retrofits not only reduce building emissions, but also increase the resilience of these buildings to floods and fires.

Having the federal government move to deep retrofits would also allow related actors to gain valuable knowledge, skills and training opportunities. The UK has mandated all new home construction to achieve a zero carbon, but research shows that few of these homes are being constructed, due to a lack of knowledge.[8] Canadian federal government retrofits would allow workers to master retrofit construction projects, making them more efficient for future projects, also lowering their costs. **The Expert Panel should recommend that the government put more emphasis into training programs at local community colleges to ensure an educated and trained workforce for climate related retrofits.**

In addition to the emissions savings, there are human health benefits associated with retrofits. Old buildings are less efficient, with lower air quality and water resources, and with less natural sunlight. In particular, energy saving retrofits should be conducted with proper ventilation in mind to ensure exposure to certain carcinogens, such as radon, is not exasperated by creating an air tight space. Retrofits should not only save energy and build resilience, but could also improve quality-of-life. **The Expert Panel should advise the government to also examine retrofits from a human health perspective. The more that society views climate change, health, and human rights together as an indivisible policy concern, the faster integrated solutions will develop.**

It is also recommended that the government perform a comparison of existing programs for home retrofits to access best practices in programme design. Examples include:

- Ontario's Home Adaptation Assessment Program[9]
- The UK Green Deal Program[10]
- The Energy Services Agreement (ESA) model[11]
- US Department of Energy loan guarantees.[12]

[7] Bertone, Stewart, et al, "Guidelines, barriers and strategies for energy and water retrofits of public buildings" (2018) 174 Journal of Cleaner Production 1064-1078

[8] E. Heffernan et al., "Zero carbon homes: Perceptions from the UK construction industry" (2015) 79 Energy Policy 23–36

[9] Intact Centre, The Home Adaptation Assessment Program: Frequently Asked Questions, online at: https://www.intactcentre.ca/wp-content/uploads/2017/03/FAQ-Updates_March-2017.pdf

[10] UK, *Green Deal: energy saving for your home*, https://www.gov.uk/green-deal-energy-saving-measures

[11] Chris Olsen, "New Financing Solutions for Energy Retrofits" (2013) 107:11 Buildings 42-46

[12] USGBC, "partners release recommendations to government for green building action" (2012) 29:2 Engineered Systems 44-45

Enabling Conditions

The reduced risks from the adoption of resiliency related technologies/practices cannot be accurately measured or priced without reliable information with standardized data and taxonomies. This will also be necessary to ensure that resiliency projects funded with sustainable financing models are in fact sustainable and resilient.

2. Reliable Information

(see Interim Report - Foundational Element 3.2: Reliable Information)

Development and utilization of reliable, accessible and science-based climate risk information (for physical and transition risks) is fundamental to the implementation of Canada's sustainable finance (as defined by the Expert panel), and the ability to integrate climate risk into core business, investing; disclosure and reporting (as per TCFD recommendations). To this end, such expertise needs to be developed in Canada at scale. There are significant capacities internationally and within Canada that can be leveraged.

The global insurance industry has been leading the way in innovating and advancing risk modelling for extreme events (known as catastrophe risk models) to measure the potential impacts in financial terms and conduct stress testing for various scenarios (Geneva Association 2018).[13] Over the last 30 years, Catastrophe models (Cat models), have (i) transformed (re)insurance industry's capacity to assess, price and manage this risk ; (ii) provided a shared common language of risk for risk transfer and a variety of other applications; (iii) enabled the insurance industry to manage its risk portfolio. This area of risk modelling was prompted by unprecedented insurance losses and company insolvencies in the 1980s and 1990s resulting from hurricanes and wind storms in the USA and Europe. The (re)insurance industry jointly invested in the development of Cat models

Specifically, Property and Casualty insurers and reinsurers rely upon physical risk data to support underwriting of commercial and residential policies across Canada. This data can be used by others in the financial sector to assess physical risk to climate changes. For example, banks may assess the physical risk of individual or a portfolio of mortgages against wildfires or flood. Ratings agencies can assess the physical risk of a REIT based upon the location of its holdings or a municipal bond based upon that municipality's physical exposure or an equity based upon the physical risk posed to that corporation's operations. The expanded tools can help companies from various sectors (e.g., re/insurance, banking, asset managers, energy) to understand, quantify their physical risk in relation to their strategy, asset allocation, operations, provision of their services, investments, risk management, reporting and disclosure practices.

Property and Casualty risk data is supplied by third party modelling firms located in the U.S. and Europe. Physical risks modelled include hail, wildfire, wind, flooding and earthquake (all but the latter can be

[13] The Geneva Association, 2018, "Managing Physical Climate Risk: Leveraging Innovations in Catastrophe Risk Modelling," M. Golnaraghi, P. Nunn, R. Muir-Wood, J. Guin, D. Whitaker, J. Slingo, G. Asrar, I. Branagan, G. Lemcke, C. Souch, M. Jean, A. Allmann, M. Jahn, D. N. Bresch, P. Khalil and M. Beck, [Online]. Available: https://www.genevaassociation.org/research-topics/extreme-events-and-climate-risk/managing-physical-climate-risk%E2%80%94leveraging.

influenced by climate change). Insurers purchase licenses to these datasets and apply company-specific algorithms based upon claims experience to price insurance products. These datasets have evolved and improved significantly over the past decade. However, to support broader use, efforts must be made on several fronts.

First, these cat models are the most rigorous tools available to capture physical risk of climate change. However, they need to be conditioned on rapidly advancing Earth observations and climate change models to better understand the sensitivity of this risk to climate change and the associated impacts that may result from changes in distributions of this risk for insurable assets. To date, underwriting in Canada has incorporated past claims data to predict future losses. However, the past is not an accurate indicator of the future. To improve the accuracy of this data, it should also be upgraded to reflect downscaled future climate scenarios. **This work can be enabled through partnership with Environment and Climate Change Canada's new Centre for Climate Data Services.** Three Canadian insurers are currently participating in a global pilot project coordinated by UNEP for this purpose.

Public agencies across Canada also collect physical risk/hazard data. For instance, flood mapping is conducted by municipalities across the country. The fundamental input to both public and private flood mapping data is high resolution LIDAR and terrain data. Modellers rely heavily on Natural Resources Canada's open source repository of terrain data. As reported by that department to Federal/Provincial /Territorial Ministers Responsible for Emergency Management in January 2019, that data is antiquated, and resulting products suffer for lack of accuracy as a result. **A key federal government intervention should be to fund Natural Resources Canada for the acquisition/development of open source LIDAR (or equivalent high resolution imagery) and terrain data AND to ensure alignment between public and private modelling to reduce confusion about different risk profiles** (As an example, the risk yielded by municipal modelling that is used to guide municipal land-use permitting and the modelling used by insurers to price risk on those properties should align).

Reliable data is also needed in other areas. For instance assessment of climate trends is confounded in Canada by the sporadic funding of precipitation measuring stations across the country which yield discontinuous time series, particularly in Eastern Canada. Effort should be made by Environment and Climate Change Canada to update analysis of trends, particularly within the past decade where insurers have seen a remarkable spike in property claims. In addition, analysis of natural infrastructure which is a key element in maintaining societal resilience is needed. Insurers lack an inventory of all mitigating infrastructure – both grey and green – which can aid in modelling and pricing risk.

Access to rigorous risk modelling and pricing tools, methodologies and expertise is fundamental to enabling Canadian financial sector, companies in other sectors and the public sector to incorporate and manage risks of climate and realize opportunities. Furthermore, development of these tools are fundamental to Companies ability to report and disclose their climate risks as per TCFD recommendations. To this end, Canada could benefit from expanding upon its public sector fundamental data and mapping expertise to develop rigorous sector-specific climate risk modelling capacities. To this end, **Canada should build an industry-led risk modelling organization (co-funded by Canadian financial sector, e.g., banks, asset managers, life and non-life insurers, pension funds, etc.) to develop and avail rigorous climate risk modelling infrastructure, tools, methodologies with open model/open platform approach and training capacities to support**

Canadian financial sector in implementing the Canadian sustainable finance framework and TCFD recommendations.

Such a canadian centre for risk analytics would leverage extensive collaborations and partnerships, to bring on board latest technological developments, wide range of initiates, pilots and tools and methodologies in Cat risk modelling and climate risk analysis in the international community as well as cooperation with technology firms and institutes, climate science community and centers of excellence, academia and other relevant organizations in Canada to further enhance these models. Beyond physical risk, it will also develop capacities for transition risk modelling, which is currently at most a cottage industry, based in UK academia and very small consulting firms . Its business model should also be designed to assure its long-term sustainability through the offering of relevant priced services to the financial sector, infrastructure agencies and others (See Dr. Maryam Golnaraghi's Written Submission to the Expert Panel).

In summary, the Property and Casualty industry maintains considerable expertise on physical risk as outlined above and our third-party modellers are the best source of such information as they are the only datasets which are nationally consistent. Unfortunately they are all foreign based and are not necessarily attuned to the Canadian marketplace. Risks of litigation due to effects of are a real potential threat to corporate profitability. Climate change adds an extra layer of risk modeling and pricing uncertainty.[14] Investments in domestic capacity are in the best interest of the Canadian financial sector.

3. Effective Climate Related Financial Disclosures

(see Interim Report - Foundational Element 3.3)

The TCFD recommendations seek to develop voluntary and consistent climate-related financial disclosures for use by companies in providing comparable information to investors, lenders, insures and other stakeholders. There is need for greater transparency on climate change.

Property and Casualty insurers are regulated to maintain investment assets in fixed-income instruments. Generally, these represent about 70% of P&C portfolios in aggregate. As such climate related disclosures are not as effective in driving investment decisions related to carbon exposure. Disclosures which focus on exposure to physical risk would be more appropriate with implications that are generally inverse to the rest of the financial sector. For example insurers might disclose and be incented to assume exposure to physical risk as part of their role in accepting risk transfer to build overall societal resilience (for example by introducing new products that cover high risk coastal, riverine and urban flooding).

TCFD - United Nations Environment Program-Financial Initiative (UNEP-FI)

The UNEP-FI initiated three specific TCFD projects with its three streams, banking, insurance and asset management to develop new tools and approaches for financial institutions to better understand the impacts of climate change on their businesses. The insurance stream engaged 18 global insurers and reinsurers at the launch of their project on November 14, 2018 recognizing that climate change is a material issue for their sector.

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[14] Moody's, *Climate change risks outweigh opportunities for P&C (re)insurers* (15 March 2018)

" *The more insurers understand climate risks facing the economy, the more they can make prudent decisions in managing risk and serving their clients, and the more efficient and stable our markets will become*," said Michael Bloomberg, Chair of the TCFD and UN Special Enjoy for Climate Action.

Canadian financial institutions who joined the UNEP-FI projects include RBC, The Co-operators, TD Insurance, Intact, Addenda Capital, Desjardins, Manulife. This demonstrates the seriousness with which our financial sector has embraced the topic of climate disclosure. Three of Canada's leading insurers have publicly supported the TCFD:

Charles Brindamour, CEO, Intact Financial Corporation
"Climate change is one of the most pressing public policy issues facing Canada and the world for the foreseeable future. Being part of the TCFD insurer pilot will help us take informed measures to evaluate the impacts of climate change in a more standardized and transparent way—to help us build a stronger, more prosperous and resilient society."

Kenn Lalonde, President & CEO, TD Insurance
"The effects of climate change are real for our industry and the people our products are designed to protect. At TD, it is our responsibility to continually assess climate change risks and identify opportunities to help create a more sustainable tomorrow. Taking part in this pilot program is the right thing for us to do for our customers and our business."

Rob Wesseling, President & CEO, The Co-operators
"Climate change is the defining issue of our times. It has and will continue to pose increasing risks that impact the financial, social and environmental prosperity of current and future generations. As risk experts, we cannot turn a blind eye to this issue. Through the TCFD pilot, we are collaborating with global insurance leaders to incorporate climate-related risk into our governance, strategy, products and services, seize low-carbon opportunities, and design solutions that will enable communities to be more resilient in the midst of a changing climate."

Effective Climate-Related Financial Disclosures
Although the TCFD recommendations are voluntary and should remain so in Canada for the time being, greater support from the Bank of Canada and the financial regulators would likely accelerate their adoption. We have noticed a momentum to implement the TCFD recommendations which we have not seen with other climate-related disclosure frameworks.

It is recommended that the federal government and the Bank of Canada provide more high-level support as a means to further engage organizations to adopt the TCFD recommendations.

We have observed an increase in climate reporting following the introduction of the TCFD recommendations. Some disclosure occurs in separate reports, some are part of mainstream financial statements (such as an MD&A) and some is in integrated reports and sustainability reports. If climate-related disclosures are excluded from mainstream financial statements it signals they are less important than other disclosures and sometimes makes it difficult to ascertain if they have been subject to robust oversight.

There are mixed opinions within our industry on whether climate-related disclosures be included in mainstream financial statements. Where issuers choose to disclose in their annual regulatory filings, these are suggested elements:

a) The board's oversight of climate-related risks and opportunities;
b) Management's role in assessing and managing climate-related risks and opportunities;
c) The organization's processes for identifying and assessing climate-related risks;
d) How processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management; and
e) The climate-related risks and opportunities identified over the short, medium, and long term.

The UNEP led insurance stream engaging 18 global insurers and reinsurers referenced above will develop further guidance on the relationship between climate-related risks and materiality. Issuers are required by law to disclose information that is material but yet they have been slow to provide climate-related information despite signals from investors that climate-related information can influence their investment decisions.

Swiss Re in their Sigma publication of April 10, 2018 cited that "total global economic losses from natural and man-made disasters in 2017 were USD 337 billion, almost double the losses in 2016 and the second highest on record" (https://www.insurance-canada.ca/2018/04/12/swiss-re-sigma-global-losses/).

In 2018 Canada did not experience any one or two single record losses but aggregately exceeded 2017 losses with $1.9 billion in insured losses. These increasing losses demonstrate the growing material risk of climate events.

There is a need for the insurance sector to track and report on the physical risk – that is the emergence of more resilience type coverages like flood insurance to reduce the exposure of governments, communities and individuals. By creating an opportunity for more resilience products and services, the cost of funding these climate related disasters will be significantly reduced. A mechanism for reporting could incent insurers to provide this information.

Investor and issuer understanding of the scope of risks and opportunities related to climate change is evolving. Given the overwhelming evidence that climate change and related actions will materially alter Canada's economy, it is clear that climate change is sufficiently important to warrant further guidance.

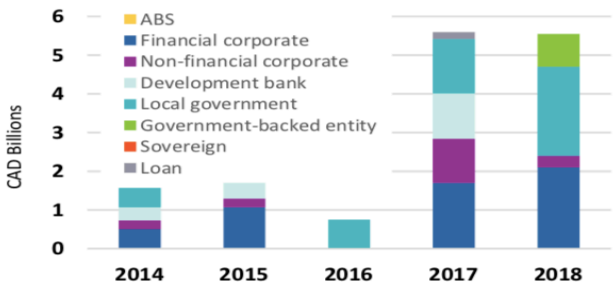
4. Green and Resilience Bonds

(see Interim Report –4.7 Green and Transition Related Financial Products)

As noted by the Expert Panel, the emergence of a Canadian Green Bonds market in 2014 has proliferated as a means for public or private institutions to fund sustainability-based projects, and for investors to put money to work in a sustainable manner. The Smart Prosperity Institute (SPI) in collaboration with the Climate Bond's Initiative (CBI) will soon be publishing their annual Green Bonds data report.

Canadian Green Bonds issuance in 2018 was CAD 5.5 billion, almost the same level of issuance as the previous year (2017 = 5.6 billion), and a significant increase compared to the 2014 to 2016 average *(see figure)*. Local governments contributed 42% of issuance, with the City of Toronto entering the market with a 300 million issue to finance clean public transport infrastructure, while Quebec issued two 500 million Green Bonds to fund transport projects. The largest Green Bond of 2018 was issued by Canada Pension Plan Investment Board (CPPIB). At 1.5 billion, it helped drive financial corporate issuance to 37% of the annual total (2017: 31%). Globally, it is also the first Green Bond from a pension fund.

With regard to increasing transparency, reporting and verification of Green Bonds in Canada, the Canadian Green Bond market has a sound track record of external reviews: 78% of deals by volume benefit from a Second Party Opinion, 8% from a Green Bond rating, and 3% from Certification under the Climate Bonds Standard[15].



Likewise, issuers which committed to report both allocations and impact metrics are in the majority. Canadian Green Bond issuers have reported on 77% of deals by number and 80% by volume for bonds issued up to October 2017. Eight bonds out of 13 report both use of proceeds and impact reporting, and account for over half of issuance[16].

However, moving towards market standards or best practices for Green Bond transparency (including verification) would help build confidence that Green Bonds are truly funding environmental projects, are resulting in positive/intended outcomes, and would also aid in comparison analysis.

It is recommended that a working group or technical committee is formed that can assess principles for Green Bond issuance and develop Canadian standards. Any standard should also be aligned (where appropriate) to international best practices (e.g., the EU is currently developing its own Green Bond Standard.[17]). Likewise, requirements for reporting on both allocation and impact metrics are recommended.

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[15] Climate Bonds Initiative, *Green Finance Country Update, Canada*, (January 2019)

[16] Ibid.

[17] European Commission , *Technical Expert Group on Sustainable Finance (TEG) Overview of Consultation Plans* (22 November 2018) at 4, European Commissions, *Technical Expert Group on Sustainable Finance TEG*, online at:

In addition, standardisation and common-definitions would ensure that issuers are familiar with recognised taxonomies; for example, the city of Vancouver issued an 85 million "Green Bond" in September 2018, but over 5% of the deal's proceeds are expected to be allocated to energy efficiency improvements of fossil fuel-based technologies and therefore not included in the number and graph cited above given CBI's taxonomy. **A Canadian taxonomy system could recognise these types of issuances under Transition Linked bonds accounting/classification.**

One way to encourage greater Green Bond development and uptake is to stimulate a premium in rates offered by Breen Bonds. Currently, interest on bonds is fully taxable, unlike capital gains and dividends. Changes in tax legislation to better align rates with other investments would spur additional Green Bond issuances. **The Expert Panel should recommend that a Green Bond working group or technical committee explore options to improve tax rates for interest coming from green bonds.**

Resilience Bonds

Resilience Bonds link insurance and resilience projects to monetize avoided losses (e.g., a reduction of flooding insurance costs and claims) through a rebate structure.[18] Investing in protective infrastructure, like seawalls or flood barriers, means cities, communities, or utilities can become less vulnerable, and resilience bonds allow them to capture insurance-savings or cost-reductions from one year to the next.[19] Insurance savings can be captured as rebates to invest in resilient infrastructure projects to reduce risk further.

Resilience bonds are a relatively innovative frontier in infrastructure and resilience finance. However, resilient bonds must have accurate risk modelling to be effective. This would allow insurers to determine exactly how risk is lowered with the new infrastructure investment- as measured in terms of the likely insured losses in the event of a climate event.

The Expert Panel should recommend that the government consider using Resilience Bonds to help shift government risk to capital markets. However, the Panel should note the integrated nature of the development of Resilience bonds to accurate risk modelling. The Government should work closely with Canada's insurance sector to develop understanding and make progress on identifying the benefits and barriers to Resilience Bonds and to pilot their use in specific high-risk municipalities across Canada.

Sovereign Green Bonds

A Canadian specific Green Bond can help enable additional investments to help build capital for green projects. Sovereign issuance can help growth and development by providing a nascent Green Bond market with the scale and liquidity it needs to encourage trading and facilitate price discovery. A sovereign Canadian Green Bond would also provide a signal to market participants, raising the profile of Green Bonds with other potential issuers such as corporates and commercial banks as well as open up the

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https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en, EU, *High Level Expert Group on Sustainable Finance, Financing a Sustainable European Economy, Final Report* (2018)

[18] Shalini Vajjhala & James Rhodes, *A Guide for Public Sector Resilience Bond Sponsorship* (re:focus partners, 2017)

[19] Vicky Beckett, "Swiss Re resilience bond to fight climate risk"

market to new investors with portfolios allocated to sovereign debt[20]. The new Canadian Infrastructure Bank could be a robust vehicle.

The Expert Panel should encourage the federal government to issue a sovereign Green Bond, as directed in the mandate letter to the Minister of Infrastructure and Communities[21].

Conclusion

This submission offers a range of recommendations across four areas identified in the Expert Panel's Interim Report. Many of these are actionable in the near term. In our view it is in the areas of Energy Efficiency and Resiliency Retrofits, Reliable Information, Effective Climate Related Disclosures and Green and Transition Related Financial Products where the Property and Casualty industry has a particular role to support the transition of Canada to a low carbon and resilient economy.

Action on these recommendations can only be possible if insurers work together with governments and others across the financial sector. The Expert Panel's process has provided a key vehicle for convening actors who normally do not engage together on climate related issues. Such a process must continue even when the Expert Panel's mandate is finished. In closing, **we recommend that an ongoing mechanism be established by governments and/or sustainable finance groups to facilitate industry exchange of views/ideas, workshops, working groups, etc. to drive collaborative progress in these areas.**

[20] Smart Prosperity Institute, *Green Bonds Report* (Ottawa: SPI, 2017)
[21] Government of Canada, *Infrastructure*, online at: https://pm.gc.ca/eng/minister-infrastructure-and-communities-mandate-letter-august-28-2018

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