



BUILDING CLIMATE RESILIENCE IN CANADA'S PENSION FUNDS

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EXECUTIVE SUMMARY

- Canada's largest pension funds have a long history of financial strength, continually adapting to new risks and emerging from the financial crisis and COVID-19 pandemic relatively unscathed. This resilience has allowed Canadian workers to trust in the security of their retirement incomes.
- But climate change presents new types of risks, including as the global economy transitions to a low-carbon model at a potentially disruptive speed, and also as the physical impacts of climate change worsen and accelerate.
- Canadians will continue to be increasingly concerned about how these climate risks are being managed—and in addition, they will not want their retirement savings to contribute to the problem.
- In order to build climate resilience, many of Canada's largest pension funds have committed to net-zero emissions by mid-century, and some also claim to be bolstering investments in climate solutions such as renewable energy.
- Beneficiaries, researchers, and other stakeholders, however, will currently find it impossible to track progress on these commitments, given the opaque nature of disclosure on related metrics and lack of mandatory requirements to deliver on the promises.
- In order for pension funds to be truly climate resilient, they must invest only in areas that are aligned to net-zero pathways, as well as guarding against physical risks—including in companies with clear, real, and verified net-zero transition plans of their own. With their supersized financial strength, pension funds could set credible net-zero plans as a condition for lending.
- Additional promises to invest in renewable energy or other climate solutions, while valuable in their own right, should be kept separate from the critical objective of mitigating climate risk through a net-zero aligned portfolio. But if these types of 'upside' investment promises are made, pension funds should back these claims with transparent and disaggregated data.
- Canada's sustainable finance landscape is currently dynamic, with the Office of the Superintendent of Financial Institutions (OSFI) having recently put forward new guidelines on climate risk management and disclosures for federally regulated financial institutions. But there is no single authoritative figure providing this guidance across all pension funds. The fragmented regulatory structure points to the need for a coordinated approach across federal and provincial bodies. In the meantime, however, pension funds should be encouraged to follow best practices for climate-related disclosure and third-party standards for vetting the credibility of their net-zero targets.

Please see the report's recommendations on page 17.

ABBREVIATIONS

BoC	Bank of Canada
CAPSA	Canadian Association of Pension Supervisory Authorities
CBI	Climate Bonds Initiative
CDP	Carbon Disclosure Project
CSA	Canadian Standards Association
GFANZ	Glasgow Financial Alliance for Net-Zero
NZAO	Net-Zero Asset Owner Alliance
OSFI	Office of the Superintendent of Financial Institutions
PAII	Paris Aligned Investment Initiative
SASB	Sustainability Accounting Standards Board
SBTi	Science-Based Target Initiative
SEC	US Securities and Exchange Commission
SFAC	Sustainable Finance Action Council
TCFD	Task Force on Climate-Related Financial Disclosures
WRI	World Resources Institute
WWF	World Wide Fund for Nature

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INTRODUCTION

Canadians are directly connected to the drivers and solutions for climate change as consumers and voters, and as savers, investors, and pension holders. But while Canadians are increasingly concerned about the climate crisis, many are unaware of how their retirement savings may be backing industries or sectors with significant climate risks.

Money managed on behalf of Canadian workers through their pension funds is often being directed to areas that are misaligned to climate objectives, such as companies and infrastructure that are ramping-up fossil fuel production.

Canada's big eight pension funds collectively manage around \$2 trillion in assets.¹ This amount is just shy of national GDP, and much higher than the spending by all levels of government in 2020, a year with an unprecedented increase in expenditure as a response to the COVID-19 pandemic.²

With the potential to shape global markets, this enormous sum must be invested wisely, protecting beneficiaries against accelerating climate risks, including those related to an abrupt transition to a low-emissions economy, where high-carbon assets quickly become liabilities and billions to trillions will be required to shift energy systems to cleaner models.³

Canada's largest funds have committed in recent months to greening their portfolios, and seven funds have adopted net-zero greenhouse gas emissions targets for 2050, recognising global momentum behind sustainable finance. Reaching these net-zero targets will require assets to be climate-aligned and portfolio companies to have credible net-zero plans of their own.

But with no binding requirement to track progress on these voluntary commitments, and no standardised climate-related disclosure for pension funds, there is a significant transparency gap in determining what type of progress is being made, and whether these pledges will ring hollow.

This report explains the challenges that researchers, regulators, and everyday Canadians face in determining the climate risks associated with their retirement savings, as well as in understanding and shaping how these risks are, or are not, being managed.

It also suggests ways that pensions funds can strengthen climate resilience, building on their successful track record of guarding against other types of risks, and applying the lessons learned from global systemic events such as the coronavirus pandemic and financial crisis.

Following best practices for climate risk disclosure, including providing information on the emissions performance of portfolio assets, will help stakeholders understand the current status of climate risk. It is also fundamental to vet net-zero plans through credible standards to move towards a more climate-resilience future.

Pension plan administrators are fiduciaries regardless of jurisdiction—which means acting in the best interest of the plan’s beneficiaries. Building climate resilient strategies will help the planet by shifting capital away from high-carbon assets, but is also increasingly recognised as a requirement of acting prudently to guard against financial risks.

Net-zero targets, taken together with transparency commitments, support for investment enablers, and alignment with global credibility standards, will ensure that pension fund administrators can better orient investment and engagement activities with the type of future for which we are all saving.





1 CLIMATE CHANGE RISKS AND OPPORTUNITIES

Climate change presents new types of risks as the global economy transitions to a low-carbon model at a potentially disruptive speed and the physical impacts of climate change worsen and accelerate.

Capturing climate change risk exposure requires advanced scenario analysis and modelling, where pension fund administrators can use external exercises as a springboard in developing their own, more tailored analysis. These more granular exercises will then require underlying data from portfolio assets, something that TCFD-aligned disclosure would help gather.

1.1 Climate-related risks

Canada's pension funds have a long history of building resilience to financial risks and have evolved significantly over the last several decades to become some of the most successful investors worldwide. This resilience has been challenged through times

of hardship such as the global financial crisis and coronavirus pandemic (see *Appendix 1 for a description of the evolution of risk management practices*). Pension funds are now strengthening their ability to guard against major global events, and that starts with better understanding of risk exposure within their investment portfolios.

Planning ahead to guard against large-scale events such as climate change is fundamental to a fund's resilience. Until recently, climate change was typically associated with distant future events that could be heavily discounted in day-to-day ledgers. Over the last few years, however, the risks associated with climate change have become much more apparent to the everyday Canadian, with the increasing likelihood of severe disruption more readily recognised across business and investment communities.

Climate change was identified as the number one risk facing the global economy over the next decade by the World Economic Forum's 2022 Global Risk Report, with environmentally-related factors taking five of the top ten spots.⁴ 'Climate action

failure’ was ranked as the number one risk, while respondents also believed that a rapid government response—that sees a disorderly shift away from carbon-based industries and processes—could also trigger significant economic volatility, cause health and productivity shockwaves, and increase societal and geopolitical tensions.

Climate risks can be broadly categorised into transition, physical, and liability risks. Physical risks are associated with the impacts of climate change, including rising global temperatures and extreme weather events that will cause loss and damage to infrastructure and disrupt business environments. These disruptions could become widespread and long-lasting. In addition, physical risks may indirectly affect pension funds returns through factors such as supply chain and labour disruptions.

Liability risk is associated with legal processes that are looking to assign accountability around climate impacts. This includes the recent swell in litigation filed against fossil fuel companies, but also includes newer instances related to pension funds. For example, in Australia, one of the trustees of the Retail Employees Superannuation Trust filed a case on the grounds of failure by the pension fund to adequately consider climate change risks. The case was settled out of court, but propelled new standards for pension funds pertaining to climate disclosures and policies to tackle climate risks.⁵ Meanwhile, a 2021 legal opinion from the Canada Climate Law Initiative provides a compelling argument for why fiduciaries should have the duty to address climate risks here at home (see *Climate risks and the evolution of fiduciary duty*).⁶

Transition risks arise through the shift to a lower-carbon economy, including changes brought about by government policies, as well as changes to investment preferences and consumer spending patterns. As the world moves towards cleaner alternatives, economic activity will shift away from carbon intensive areas, leaving behind sectors and individual companies that are not able to transition.

These climate risks are difficult to assess for at least three reasons, making identification and management more challenging:

- Climate risks are characterized by great uncertainty, particularly in terms of the types and timing of extreme weather events at the local level; when and how governments will react; and how orderly the transition will be. These variables in turn depend on technology and socioeconomic drivers.
- Historical data are of little use to analyze climate risk since past trends are not indicators of the shifting climate, political, or technological landscape.
- Physical and transition risk could interact in a myriad of ways. For example, a rapid transition could result in increased transition risk but reduced physical risk, while heavy-hitting physical impacts could lead to swifter and greater transition risk.⁷



Climate risks and the evolution of fiduciary duty

Pension plan administrators are fiduciaries regardless of jurisdiction across Canada. The duty of pension plan fiduciaries is to exercise their investment powers in the best interests of the pension plan beneficiaries.⁸ This takes place within the legal mandates of the pension plans. In most cases, the legal mandate for both large and smaller pension funds is to optimise financial benefits for the plan’s beneficiaries. The specific financial goals range from maximizing financial returns without risk of undue loss, to maintaining fully funded status (i.e., having sufficient funds to meet the pension payment obligations of beneficiaries). As a result, climate change related matters are not readily recognised as directly related to the fiduciary duties.

Nonetheless, pension fiduciaries have a duty to acquire an understanding of, and then balance, their investment decisions over time, including intergenerational considerations. It has become increasingly clear that climate change poses significant financial risks that could ultimately affects the pay-out of pension beneficiary obligations over time and generations.⁹ This clarity is leading to the evolution of fiduciary duty to include the active consideration of climate change related risks within investment decisions. As such, pension funds are beginning to recognise the need to identify climate risks, as well as to ensure that robust governance and implementation structures are in place to manage these risks. This will include building climate considerations into all decision making and continually adapting to new climate-related information as it emerges.

1.2 Informing climate risks

As long-term, highly diversified financial institutions, pension funds are increasingly exposed to climate-related risks that might adversely affect their financial returns and, in turn, their responsibilities toward their beneficiaries. Funds are bound by their fiduciary duties to act prudently to protect their beneficiaries against financial risks, including interest rate risk, inflation risk, and insolvency risk, and should therefore be increasingly concerned about climate risks.

For pensions funds to better understand and prepare for climate change, more advanced tools must be developed, continuously updated, and used on a regular basis to assess related risks, such as climate risk modelling and climate-specific scenario analysis. Traditional financial risk models that rely on historical data or timeworn assumptions must be adapted or replaced to be more suitable to predict the types of change that will stem from the climate crisis.

To help inform physical risks, climate scientists are able to provide scenarios of climate impacts at varying levels of greenhouse gas atmospheric concentration, including estimates of sea-level rise, average temperature rise, ocean acidification, and more general anticipation of the intensification of storms, droughts, forest fires, and other extreme climate-related events.

More localised impacts of climate change can be analysed through exercises that map these larger scale events against regional vulnerabilities. Pension funds can rely on third-party experts or information that is increasingly stemming from governments. Floodplain analysis in Canada, for example, is now being coordinated at the federal level. As physical risk mapping improves, risks such as flooding or forest-fires can be compared to a pension fund's asset locations or value-chain components.

Climate events can impact pension funds' investments in infrastructure projects, businesses, and real estate directly, but can also affect regional economic activity more broadly, with a knock-on effect to asset valuation and growth prospects. As such, broad regional analysis will also be key, including stress testing that examines how large-scale climate events may impact key sectors such as agriculture and transport networks.

In terms of transition risk, the Bank of Canada (BoC) and OSFI have begun to conduct scenario analyses on the low-carbon transition, with these exercises showing varied impacts of the low-carbon global transition across sectors.¹⁰

According to the BoC/OSFI analysis, some sectors would face demand declines under low-carbon pathways (e.g., oil and gas), while others would see increased demand (e.g., electricity). This implies differing levels of climate risk for particular activities, with the potential to impact a company's credit and valuation as the risks become increasingly apparent.

These types of high-level exercises can be important springboards to more tailored scenario analysis for individual pension funds. While there is no single authoritative oversight body to provide this guidance specifically to pension funds, Canadian funds can use several sources of credible scenario analysis. OSFI's recent commitment, for example, to continue to develop standardised climate scenarios means that these could be used as a starting point for more granular assessment of climate risks.¹¹

Custom-made climate risk assessments could then build on the impacts provided by the higher-level exercises (e.g., GDP shocks per sector) to explore more tailored and detailed impacts across particular asset classes, types, and geographies, or could even be performed for individual assets. Since Canadian funds are global investors, these tailored exercises will need to consider jurisdictional variations.

1.3 Portfolio specific risks

To conduct climate risk analysis at the portfolio level (i.e., the more tailored analysis referred to above), pension funds will need information about each of their assets. This includes information on the full scope of greenhouse gas emissions associated with the individual asset which is needed to inform the level of transitional risk—the higher the carbon footprint, the more potential that the transition to a low-carbon economy will be disruptive. Pension funds will also need information on how portfolio assets plan to improve their climate resilience.

Other types of information valuable in assessing portfolio-level climate risks include sustainability certification or ratings for tangible assets such as commercial buildings, and information to support physical-risk assessment such as exact location of infrastructure.

Unfortunately, much of this information is either not available, difficult to obtain, or available only through data that is incomplete, inconsistent, and incomparable. Part of the problem is that public and private companies are not currently obliged to report climate-related information. In these cases, pension funds may use third-party data to help fill the gaps, but this is not a perfect substitute for direct disclosure from the companies themselves.

For this reason, Canada's eight largest pension funds have made both informal and formal joint requests for corporations to improve climate-related disclosures, recommending data be reported in accordance with the Sustainability Accounting Standards Board (SASB) and the Task Force on Climate-Related Financial Disclosures (TCFD).¹²

The recommendations of the TCFD's landmark 2017 report focused on four key areas:

- **Metrics and Targets:** The metrics and targets used to assess and manage relevant climate-related risks and opportunities, including Scope 1-3 emissions.
- **Governance:** The organisation's governance around climate-related risks and opportunities.
- **Strategy:** The actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.
- **Risk Management:** The processes used by the organisation to assess and manage climate-related risks.

Note that while disclosure around emissions and other relevant metrics to track climate action is crucial, the last three TCFD

recommendations pertain to information on how the organisation is managing climate risks—such as for example, investing in new low-carbon technologies or transitioning to low-carbon transport networks for their products.

Climate disclosures by portfolio companies are also needed for pension funds to perform their own robust climate disclosures—something that beneficiaries and other stakeholders will increasingly demand. Most of Canada’s pensions funds currently disclose only limited data on their Scope 3 (portfolio level) emissions, citing data availability challenges.

Underlying climate disclosures from portfolio assets is therefore fundamental to pension funds’ ability to build climate resilience and trust. With their enormous power to transform certain sectors, greenlight major projects, and shape market expectations, pension funds should go further in demanding robust climate-related disclosures as a condition of their lending.

Pension funds can also help support the work of the Canadian Securities Administrators, the umbrella organisation of Canada’s provincial and territorial securities regulators, on harmonized national disclosure requirements on climate-related matters. This will help ensure that underlying portfolio companies end up providing consistent, comparable, and decision-useful information for pension funds. As global investors, the large Canadian pension funds can also support global initiatives such as the International Sustainability Standard Board in developing reporting standards for listed companies.

1.4 Climate-related opportunities

While informed Canadians will likely want to avoid subjecting their retirement savings to climate-related risks, greater attention is also being given to how retirement savings can contribute to Canada’s transition to a low-carbon and vibrant economy.

Public sector financing alone cannot meet the level of capital required for the low-carbon transition and leveraging private sector investment will be critical to reaching net-zero emissions by mid-century. The private sector also has the networks, experience, and expertise to help drive progress in promising low-carbon areas. Canadian pension funds, as patient allocators of long-term capital, are in an ideal position to cater to some of the large-scale, green investment requirements that will be needed. As such, government policies should target pension funds in terms of establishing attractive investment environments in low-carbon areas (see *Policy levers for attracting pension fund capital towards low-carbon infrastructure in Canada*).

Under the right circumstances, investing in low-carbon opportunities can also provide significant returns on investments. Canada’s climate policies are beginning to lead to an increased demand for low-carbon technologies and infrastructure, shifting consumption and investment decisions towards cleaner alternatives. Investors that are already committed to low-carbon areas will also avoid costs associated with carbon pricing and climate regulations that can change bottom lines. These trends will

intensify as the scope and stringency of climate policy accelerates across all levels of government.

Estimates of government and private-sector investments needed to tackle the climate crisis could be in the order of hundreds of trillions of dollars.¹³ The International Energy Agency and International Monetary Fund have found that, for a global transition to net-zero by 2050, a complete overhaul of the global energy system is needed. Total annual clean energy investments are needed of around US\$4-5 trillion per year by 2030, four times more than the investment levels of around US\$1.2 trillion per year witnessed on average over 2016-2020.¹⁴





Policy levers for attracting pension fund capital towards low-carbon infrastructure in Canada

Canada's transition to a net-zero emissions economy by mid-century will require investments in the order of \$125-140 billion annually through 2050, according to the 2022 federal budget, much more than the public sector can support alone.¹⁵ With these large domestic capital requirements for the transition, the Canadian government could help create the right enabling environment to attract pension funds' investment towards low-carbon and resilience projects at home.

Required investments include areas such as carbon capture and storage, renewable/non-emitting electricity, and heat production (e.g., wind, hydro, geothermal, and solar turbines, and heat-pumps), smart grids, smart meters and energy storage, transmission and distribution, biofuel and bioproducts, hydrogen, energy and resource efficient equipment and appliances, low-carbon transportation technologies, and emissions control industrial equipment.

Pension funds are large investors in real assets, particularly in real estate, infrastructure, and natural resources, providing a good fit to transition requirements. However, a large proportion of these real asset investments are outside Canada, and very little information is provided on the sustainability standards of many of these assets.

Policy levers can help solve the 'Canadian Paradox,' where Canadian pension funds are major global infrastructure investors, but do not often invest in infrastructure projects at home.¹⁶

Pension funds tend to invest in infrastructure, mostly outside Canada, for the following reasons¹⁷:

1. attractive countries for investment have streamlined regulatory processes and implementation structures to attract private sector investment in infrastructure;
2. projects often do not face direct competition or a potential substitute abroad, reducing the revenue risks for pension funds; and
3. pension funds often have the ability to make sizeable direct equity investments in foreign projects that are not always possible in Canada.

Expected risks and returns from these projects must be attractive enough for Canadian pension funds to commit to capital allocations. To attract capital for these projects, governments need to create enabling policy frameworks and use de-risking and transaction-enabling instruments to increase the bankability of projects.¹⁸ At the very least, policy frameworks must ensure implementation structures that allow direct investments in Canadian infrastructure projects with special procedures in place to fast-track climate-resilient areas.

There is a wide variety of de-risking and transaction-enabling instruments used globally. These range from simple instruments such as revenue guarantees (where a public actor promises to pay for the core product to ensure there are no revenue shortfalls) or carbon contracts for difference (where a regulator guarantees the price on carbon emissions and pays out the difference between the guaranteed price and the actual carbon price to project sponsors) to complex instruments such as collateralized debt obligations (where cash flows from different projects are pooled to create different financial products suited for different investors).

Governments and their agencies – including the Canadian Infrastructure Bank — need to accelerate efforts to develop these types of instruments, recognizing that attracting private-sector investment is fundamental to addressing climate change over the long-term.¹⁹



2 BUILDING CLIMATE RESILIENCE

2.1 Net-zero targets

In order to build climate resilience, many of Canada's largest pension funds have committed to net-zero emissions by mid-century, and some also claim to be bolstering investments in climate solutions such as renewable energy.

Today, however, most continue to invest heavily in emissions intensive areas, with limited information provided on how portfolio-level climate risks are being managed.

Within the first half of 2022, seven of the largest pension funds in Canada committed to achieve net-zero emissions across their portfolios by 2050. The details underlying these net-zero commitments vary across the seven funds, and reflect differences in mandates, information availability, and investment strategies (see *Table 1*).

The Science-Based Target initiative (SBTi) uses three dimensions to assess financial institutions' climate commitments—applied below to the Canadian funds. Note, however, that Canada's pension funds with net-zero targets have not yet signed on to this international standard. The SBTi's three dimensions are:

1. Boundary of the target (target coverage; scope of emissions; scope of activities)
2. Time frame (short-term; long-term)
3. Mitigation tactics (engagement, divestment, climate solution financing)

The SBTi is an international collaboration between four NGOs and knowledge institutions: the Carbon Disclosure Project (CDP), World Resources Institute (WRI), UN Global Compact, and World Wild Fund for Nature (WWF). SBTi helps private-sector organisations to set climate targets in line with the United Nation's Paris Agreement and assesses the credibility and ambition of climate pledges.²⁰

Other global initiatives to assess climate targets — such as the Net-zero Asset Owner Alliance (NZAO) and Paris Aligned Investment Initiative (PAII) — also provide a basis of comparison.

Boundary of the target: Most pension funds' 2050 net-zero targets include the full scope of emissions. Emissions associated with pension funds' value chain constitute the most significant portion of the funds' overall carbon footprint, and this inclusion therefore underscores the integrity of their climate targets.²¹

Time frame: Caisse de dépôt et placement du Québec (CDPQ), Ontario Municipal Employees' Retirement System (OMERS), Ontario Teachers' Pension Plan (OTPP) and PSP Investments have set interim emission reduction targets, while other have not done so. These interim targets are expressed in terms of emission intensity and not absolute emissions, but still provide guardrails for emissions expectations over the shorter term. Most global standards, including NZAO and PAII, have made interim targets mandatory for their signatories.

Mitigation strategies: Mitigation strategies explain how the fund plans to address the GHG emissions in its portfolio. These include both divestment from high-emitting assets (such as the oil sector, as adopted by CDPQ) and/or climate engagement with portfolio companies and other assets (as adopted by CPP Investments and others).

Green and Transition Investment Targets: Commitments may also include targets to improve the share of green or transition-linked investments. Some pension funds, such as CPP Investments and OTPP, have aggregated green and transition investment targets. Others, such as CDPQ, Healthcare of Ontario Pension Plan (HOOPP), and PSP Investments separate these categories, setting individual targets for each. Investment Management Corporation of Ontario (IMCO) and OMERS have not yet set any upside investment targets in their net-zero/climate plans.

Table 1: Net-zero commitments of Canadian pension funds

Pension fund	Portfolio emission reduction targets	Green and transition investment targets
Caisse de dépôt et placement du Québec	Reduce portfolio's carbon emissions intensity (tCO ₂ e/C\$ million) to 60% by 2030, compared to 2017 levels, and reach net-zero emissions by 2050.	Increase investments in green assets to \$54 billion by 2025. Create a \$10-billion transition envelope aimed at decarbonizing the heaviest carbon-emitting sectors. Complete exit from oil production by 2022.
Canada Pension Plan Investments	Achieve net-zero emissions across all scopes by 2050 (no interim targets). Reach carbon neutrality for internal operations across Scope 1, 2, and 3 emissions by the end of fiscal year 2023.	Increase investment in green and transition assets from \$67 billion to at least \$130 billion by 2030.
Healthcare of Ontario Pension Plan	Achieve net-zero carbon emissions across portfolio by 2050 (no interim targets yet). The work required to meet this goal is ongoing and more details will be provided in future.	Implement a \$1 billion portfolio allocation that is focused on carbon-efficient companies, clean energy, and other climate change solutions. Continue to invest in climate-resilient and clean energy infrastructure, with approximately \$398 million invested in 2021. Continue to pursue an active energy transition strategy within public equities portfolio, with \$450 million invested in climate solutions and the transition to a net-zero future in 2021.
Investment Management Corporation of Ontario	Achieve net-zero portfolio greenhouse gas emissions by 2050 or sooner (no interim targets) in line with PAII on Climate Change.	Establish interim targets for emissions reductions by end of 2022. Establish targets for investments in climate solutions by end of 2022.
Ontario Municipal Employees' Retirement System	Reduce portfolio carbon emissions intensity by 20% by 2025 and achieve net-zero by 2050.	No targets. As of November 2021, OMERS holds more than \$18 billion in green assets, based on the International Capital Market Association (ICMA) Green Bond Principles, including those engaged in renewable energy, energy efficiency and green-certified buildings.
Ontario Teachers' Pension Plan	Reduce portfolio carbon emissions intensity by 45% by 2025, 67% by 2030, and 100% by 2050, compared to 2019 levels. 67% of the portfolio's carbon emissions to be covered by a credible net-zero plan by 2025. 90% of the portfolio's carbon emission will be covered by 2030. Coverage includes Scope 1 and 2 emissions for real assets, public and private equity, as well as corporate fixed income assets, including external managers.	Invest additional \$5 billion in green or transitional investment. In January 2021, OTPP had \$30 billion in green investments.
PSP Investments	No formal net-zero target by 2050. Reduce portfolio greenhouse gas emissions intensity by 20-25% by 2026 (relative to a September 2021 baseline). Obtain greenhouse gas data for 80% of its in-scope portfolio by 2026 to enhance greenhouse gas data coverage across the portfolio.	Increase investments in green assets to \$70 billion by 2026 from a \$40.3 billion baseline in 2021. Increase investments in transition assets to \$7.5 billion by 2026 from a C\$5.1 billion baseline in 2021 and ensure that assets representing 50% of PSP Investments' carbon footprint will have commitments to implement mature, science-based transition plans. Reduce holdings in carbon intensive assets that lack transition plans by 50% by 2026 from a \$7.8 billion baseline in 2021.

2.2 Implementing net-zero targets

Striving to meet net-zero targets allows pension funds to actively manage climate risks by reducing portfolio level emissions and supporting companies that are undertaking the low-carbon transition.

In order for pension funds to be truly climate resilient, they must invest only in areas that are aligned to net-zero pathways and are guarding against physical risks—including companies with clear, credible, and verified net-zero transition plans of their own.

With pension funds committing to new ambitious climate action, focus now turns to implementation. Stakeholders will increasingly call for evidence that pension funds are making progress towards their climate targets, including by steadily reducing the GHG emissions associated with their portfolios.

Pension funds do not have direct control over most of their emissions profiles, but instead provide finance to companies that exercise this control. Pension funds will require active management of portfolio-level emissions—those associated with equity investments and other assets such as real estate. This type of management can include reducing exposure to high-emitting assets (see *Divestment vs. active engagement*), active engagement, and investing in upside climate solutions.



Divestment vs. active engagement

To reduce their financed (Scope 3) emissions, pension funds can follow a variety of climate change mitigation strategies. Pension funds have the option to sell off their holdings of higher-emitting assets (divestment) or engage with portfolio companies to help influence them to set climate targets and transition plans that reduce emissions over time (active engagement).

In theory, both divestment and active engagement could lead to portfolios that are resilient to climate-related transitional risks. If all portfolio companies and assets move individually to net-zero emissions, then the pension fund's Scope 3 emissions will also trend to zero.

The main argument for the divestment approach is a concrete and decisive reduction of climate-related financial risks. Some organisations argue for divestment—say from fossil fuels—as a powerful way to send a signal to companies and governments about the importance of climate change. Globally, large pension managers, including the New York State Pension Fund and Norway's largest pension fund KLP, have exited oil sands companies. In Canada, CDPQ has committed to divest from oil by 2022.

However, most Canadian pension funds do not tend to actively divest from high-carbon or fossil fuel companies. This approach is grounded in the belief that if a pension fund divests from a company because of its existing climate risk profile, other investors will simply step in and acquire its holdings. In this scenario, the fund not only loses potentially lucrative returns but also its ability to exercise voting rights that can bring about a positive influence over company affairs. Divestment may also be inconsistent with pension funds' mandates and fiduciary duties, which may require them to earn maximum financial returns for their beneficiaries.²²

Instead, Canadian pension funds primarily choose active engagement. This can be achieved directly through dialogue with a company's board and management. Pension funds can exercise their ownership rights by voting proxies in a manner intended to optimize the long-term value of their investments. Pension funds set proxy voting guidelines and publish their voting methods in their annual or sustainable/responsible investing reports.

Active engagement can be both bilateral and collaborative. For example, the investor-led Climate Action 100+ initiative was formed to ensure the world's largest corporations take necessary steps on GHG emissions reductions.²³ Climate Engagement Canada was formed to work collaboratively with large Canadian corporations and encourage them to adopt leading practices with respect to climate change risks and opportunities.²⁴

Overall, active engagement—if performed in a credible and transparent manner—can help pension funds better understand assets' climate risks, can help seed collaborative climate efforts, and ultimately create long-term climate resilience across the real economy—particularly when this leads to the development and implementation of net zero plans for all portfolio assets.

2.3 Active engagement: Requiring net-zero plans

Ensuring that portfolio assets are aligned to net-zero pathways will require vetting by external bodies such as the Science-Based Target Initiative or emerging UN-backed standards. Pension funds should also vet the transparency and credibility of their own net-zero commitments through these types of initiatives.

One of the challenges with this approach is that pension funds would need to determine which companies have ‘credible’ net-zero plans. Pension funds could require portfolio companies to have their climate targets vetted by third-party standards such as the SBTi or other international certifiers.

Beyond the SBTi, the UN Secretary-General recently launched a high-level expert group to help assess the credibility of net-zero emissions commitments from non-state actors. The UN group, which is chaired by former Canadian Minister of Environment and Climate Change Catherine McKenna, is tasked with tracking companies’ efforts to curb climate change with a view to combat greenwashing. The UN Environment Programme’s net-zero initiative and the Glasgow Financial Alliance for Net-Zero (GFANZ) also offer guidance for assessing a company’s climate plan.

The SBTi is working to bring their standard in line with other global initiatives, and is also developing a Net-Zero Standard for Financial Institutions, to be released in 2023, that will include additional detail on how accreditation exercises by portfolio companies can help back pension funds’ net-zero claims.

2.4 Tracking progress on climate targets

Beneficiaries, researchers, and other stakeholders will currently find it impossible to track progress on pension funds’ net-zero commitments, given the opaque nature of disclosure on related metrics, and no mandatory requirements to deliver on their promises.

Public-sector coordination is needed to ensure pension funds are disclosing climate information in accordance with the best available information and providing metrics to track the credibility of their net-zero claims.

In the meantime, however, pension funds should be encouraged to follow third-party standards and procedures for disclosures and for vetting the credibility of their net-zero targets.

Pension funds will need to regularly report progress towards climate targets and engagement activities in order to build trust that they are acting prudently to strengthen climate resilience.

A key challenge for analysing whether funds are making credible progress towards their climate targets is a lack of publicly available climate information from portfolio companies, which impacts the pension funds’ ability to measure—and therefore report—their own portfolio emissions.

In Budget 2019, the Government of Canada endorsed a phased in approach to TCFD-aligned adoption by major Canadian companies. When climate disclosure ramps up across publicly-listed companies, pension funds must begin to disclose this information in their own reporting.

With a fragmented regulatory structure, there is no single authoritative body providing guidelines for the larger pension funds disclosure requirements, pointing to the need for a coordinated approach across federal and provincial bodies—including to ensure that pension funds’ disclosure keeps up with the dynamic nature of climate information.

Other countries are moving towards mandatory disclosures for corporations and financial actors, including the EU, UK, US, New Zealand, and others. In October 2021, the UK was the first country to require trustees of occupational pension schemes to identify, manage, and report on the climate-related risks and opportunities within their portfolios.

The new climate-related disclosure rules proposed by the US Securities and Exchange Commission (SEC) earlier this year includes a requirement to disclose Scopes 1-2 emissions as well as metrics relevant to any high-level claim to climate action, such as Scope 3 emissions. When a company has a net-zero or other climate transition plan, they must provide a description of the plan, as well as details on any metrics relevant to the emissions targets. They must describe the time horizon by which the target is intended to be achieved, any interim targets, and relevant data to track whether progress is being made towards the target. The SEC is arguably the most influential securities regulator in the world, and its proposed rule could encourage many more market regulators to follow suit.

The proposed US rule would be game changing. It would make providing information relevant to tracking progress on climate targets a legal requirement—where this information would eventually be audited in the same way as financial information. However, it should be noted that the underlying nature of taking on these climate targets remains voluntary. This means that pension funds and other institutional investors will continue to have an important role to play in ensuring that their portfolio companies have and continue to adopt ambitious targets.

In the absence of a SEC-proposed-type of regulation, voluntary fora such as the SBTi can help assess the climate targets and mitigation pathways of pension funds. GFANZ, for example, has recently published guidelines on how financial institutions can produce credible net-zero transition plans, including a requirement on tracking and disclosing related metrics.

2.5 Tracking progress on climate-solutions investment

Commitments to invest in renewable energy or other climate solutions, while valuable in their own right, should be kept separate from the critical objective of mitigating climate risk through a net-zero aligned portfolio.

But if these types of ‘upside’ investment promises are made, pension funds should back these claims with transparent and disaggregated data.

Pension funds may choose voluntarily to invest in climate solutions, such as clean energy infrastructure (see *Section 1.4 for a discussion on the importance of investment in climate-related opportunities*).

But regardless of a pension fund’s commitments towards investment in climate solutions, it must continue to ensure that its entire portfolio is net-zero aligned. Green or other ‘upside’ investments cannot compensate for assets that are not prepared to transition. Assets that are not known as climate solutions—for example a company making toy airplanes—would still be net-zero aligned if they are taking steps to use clean energy and source sustainable material. Classifying and tracking ‘green’ investments should therefore not become a distraction to the aim of tracking climate-resilient investments—those with credible net-zero plans.

However, if these types of ‘upside’ investment promises are made, pension funds should back these claims with transparent and disaggregated data. Tracking progress is currently very challenging with regard to the commitments that Canadian funds’ have made to invest a specific percentage of their portfolio in climate solutions.

Currently, methodologies used by pension funds to define ‘green’ or ‘transition’ investments are often not disclosed or poorly explained, and few, if any, individual assets are labelled in pension funds’ disclosure documents. Some pension funds also lump together ‘green’ and ‘transition’ investments, making related pledges very challenging to track. If pension funds choose to make voluntary commitments to invest in climate solutions, they should provide clear details on how they are classifying these investments, and disaggregated data on which assets have been included in any related claims.



What can pension funds do in the absence of a Canadian green or transition taxonomy?

While managing climate risk is crucial, directing capital towards areas that can accelerate the low-carbon transition is also needed. It is therefore beneficial for stakeholders and researchers to have access to publicly available data on this climate ‘upside’ investment. The OSFI’s recent draft guidelines for financial institutions, for example, include a requirement to disclose the proportion of revenue, assets, or other business activities aligned with climate-related opportunities.

Taxonomies can help define what counts as ‘climate related opportunities.’ Taxonomies are tools that help identify, define, and classify activities that can be considered sustainable, including climate change mitigation and adaptation. By clearly defining what constitutes climate solutions, taxonomies are central to the credibility of green bonds, transition financing, and funds offering sustainable investments.²⁵

But determining what should be included in the taxonomy is not straightforward. There are some more obvious examples of ‘green’ assets, such as renewable energy, that would easily fall into the climate-related-opportunity category. But other pure-play assets are not as easy to define. Carbon capture utilization and storage, for example, may help reduce intensity-based emissions, but might also lend a hand to greater oil extraction and associated emissions on an absolute level.

Meanwhile, there is broad agreement that investing in transition activities will be needed to reach climate objectives. These sectors or technologies may not be immediately aligned to net-zero, but may be required as interim steps to decarbonisation, such as technology companies that offer more energy-efficient alternatives to emissions-intensive processes. Natural gas companies are often used as an example of potentially ‘transition aligned’ because natural gas can be used to displace dirtier fuels, such as coal, in areas such as electricity generation, and can also promote renewable energy adoption through an ability to quickly balance intermittent supply.

Determining what constitutes a transition-aligned asset may require modelling and other sophisticated exercises that look at how technologies and activities evolve under low-carbon pathways, including to determine phaseout/in speeds. These exercises, however, are open to a wide range of uncertainty, and depend to a large extent on the assumptions used within the modelling framework, such as how quickly new technologies are deployable at scale.

An agreed taxonomy would help ensure a common understanding of what constitutes ‘green’ and ‘transition’ assets. However, past efforts to develop a made-in-Canada taxonomy have been unsuccessful and contentious, including under the Canadian Standards Association (CSA) Group — potentially because of the many challenges outlined above, reputational risks associated with any perceived support to fossil-based activities, and an inability to secure widespread buy-in across many vested interests from certain groups of stakeholders.

A working group under the Sustainable Finance Action Council (SFAC) aims to propose a taxonomy by the fall of 2022, including how it will be governed. The SFAC taxonomy can build off ongoing global efforts in countries such as Australia, Singapore, South Africa, the EU, the UK, China, Indonesia, Colombia, and Japan.

But even if Canadian-based taxonomies can be defined, they will only apply to particular activities. Pension funds do not typically invest in pure-play companies or technologies, making a broad-brush ‘green’ or ‘transition’ label impractical for many types of assets. A pension fund may invest in a publicly-listed company, for example, that covers several activities spanning many geographical areas with different transition needs.

SOLUTION?

Many of Canada’s pension funds have moved ahead of these current debates through an approach that does not rely on a Canadian taxonomy.

Green: For pure-play ‘green’ activity investments, pension funds defend their classification system by pointing to existing standards/taxonomies developed elsewhere, such as under the Climate Bonds Initiative (CBI), or the EU’s ‘green taxonomy’ that includes a list of 67 activities that help mitigate climate change and other criteria for determining whether a financial asset can be considered green.

Transition: To define transition assets, pension funds require the asset itself to prove how it is transitioning in line with climate objectives. This approach is applicable at both the activity and enterprise level. CPP Investments, for example, counts ‘transition-aligned investments’ as any asset that has “announced its commitment to net-zero with a credible target and plan, and is making meaningful contributions to global emissions reductions.”²⁶ PSP Investments, as another example, considers transition assets as “investments that have committed to make a substantial contribution to the low-carbon transition through the establishment of public targets and disclosure practice.”²⁷

Credible targets: The important enabler to this type of labelling will be in assuring and tracking the credibility of the assets’ underlying climate targets and plans. This means that the credibility of portfolio company commitments will need to be vetted, something that third-party initiatives are increasingly offering in the absence of government regulation (see Section 2.3).

Bottom up: This ‘bottom-up’ approach to defining what constitutes climate-solutions more closely matches the types of voluntary commitments being made, where transparency is key to credibility. While it is reasonable to assume that prudent fiduciaries will guard against climate risks (e.g., decarbonise their portfolio by mid-century), it is less clear on the pathway for requiring specific ‘climate solution’ activity investment.



3 RECOMMENDATIONS

- Pension fund administrators should continue to adopt net-zero emissions targets for 2050 as a means to build climate resilience. This will match the pace of change committed by Canada and many other global governments, and will guard against climate risks associated with the low-carbon transition.
- Implementing these targets will require pension funds to invest only in climate resilient areas, which means portfolio companies with credible net-zero plans of their own. Pension funds should make this a requirement of their lending decisions.
- While investments in climate solutions such as renewable energy are welcome, these discussions should not complicate the conversation on climate risk management and disclosure. For pension funds to ensure climate resilience, all their portfolio assets must demonstrate a plan to reach net-zero emissions by mid-century. Commitments around green or transition assets cannot compensate for assets that do not meet this requirement.
- Both portfolio companies, and pension funds themselves, need to build trust that their net-zero plans are credible. Pension funds should have their own net-zero targets vetted through third-party certification standards, such as the Science-Based Target initiative or Glasgow Financial Alliance for Net-Zero.
- For a pension fund to ensure that their portfolio assets are truly climate aligned, they should require climate-related disclosure in line with best practices and should also require their portfolio companies to have their climate targets vetted by third-party global initiatives. Pension funds should disclose or source the resulting information in their own reporting to stakeholders.
- Governments and international financial bodies such as the International Sustainability Standards Board have a role to play in mandating climate reporting obligations and should include a requirement to disclose metrics needed to track progress on all climate commitments.

APPENDIX 1: HISTORICAL RISK MANAGEMENT

A1.1 Decades of resilience

Canada's pension funds have a long history of building resilience to financial risks and have evolved significantly over the last several decades to become some of the most successful investors worldwide. This resilience has been challenged through times of strife such as the global financial crisis and COVID pandemic, with lessons learned from these events applicable to other systemic risks including climate change.

Pension funds are different from other types of institutional investors as they are specifically mandated to secure returns over the longer term rather than prioritise shorter-run gains, with an overarching goal that the fund remains strong into the distant future.

Canadian workers—the fund's contributors and beneficiaries—are often dependent on pension funds for their retirement incomes, trusting that the fund will meet their payment obligations regardless of macroeconomic or other market conditions.

For fund administrators and their external investment managers, this means generating sufficient financial returns and maintaining enough liquidity to meet payment liabilities. But these obligations are dynamic, with several evolving factors

such as demographics that impact the number of people retiring or contributing to the fund in any given year, employment trends, and macroeconomic drivers such as interest rates and inflation. These factors cannot be forecasted with complete certainty but historical trends can often be used to establish reasonable assumptions.²⁸

Building resilience to a suite of potential risks is therefore key to a pension fund's success, and this is generally accomplished through a well-diversified and balanced investment portfolio across both traditional asset classes (fixed income, public equities) and alternative asset classes (private equity, real estate, infrastructure).²⁹ Infrastructure investment, for example, offers some challenges related to liquidity, but can help guard a fund's value against market conditions such as inflation. Infrastructure and real estate value also typically have a lower correlation with public equities and bonds, and as a result, they may help balance returns during periods of market volatility.

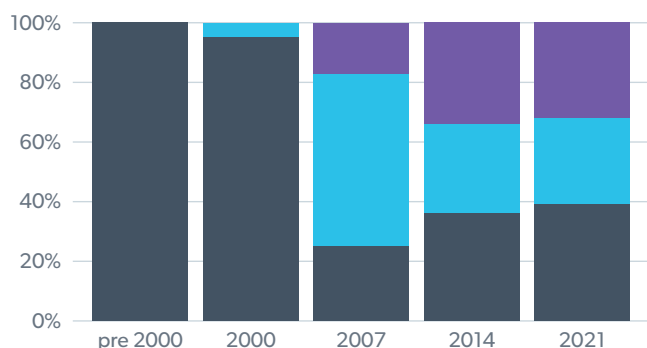
Over the last four decades, Canada's pension funds have transitioned from investing mostly in nonmarketable domestic government bonds and Canadian public equities to becoming global investors across asset classes, including private equity, real estate, and infrastructure.

These changes have been the result of government regulatory reforms that started in the late 1980s. Framework legislation established the larger pension funds as separate institutions with independent boards and management teams. This allowed arm's-length operation from governments and sponsors.³⁰

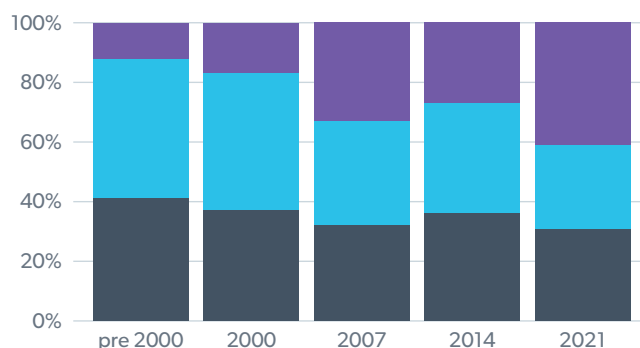
This trajectory of change has allowed fund administrators to reach for higher yields, with Canadian pension funds now being some of the most successful investors worldwide.³⁸ Over the years, funds have completely changed their organisational governance structure, building greater accountability and

Figure 1: Asset class diversification of CPP Investments and CDPQ (asset type as a share of total assets under management)

CPP Investments



CDPQ



Asset Class

Alternative Assets
Private Equities,
Infrastructure, Real Estate

Public Equities

Fixed Income

Source: Smart Prosperity Institute; Adapted from CPP Investments' 2007³¹, 2014³², and 2021³³ Annual Reports and Caisse de dépôt et placement du Québec's 2000³⁴, 2007³⁵, 2014³⁶, and 2021³⁷ Annual Reports.

transparency mechanisms, recruiting talent, and developing internal expertise to build resilience and optimise returns. Pension plan administrators often delegate many of their responsibilities to external investment managers for different reasons (e.g., to invest in assets in certain parts of the world where they have no existing expertise). These relationships too have strengthened and grown in scope and complexity.

Within this timeframe, governments also removed quantitative limits on foreign investments.³⁹⁴⁰ Today, the top Canadian pension funds are largely invested abroad. While geographic diversification varies across funds, a major portion of investments flows to the United States, with other top destinations including Europe/United Kingdom, Latin America, and the Asia Pacific regions.

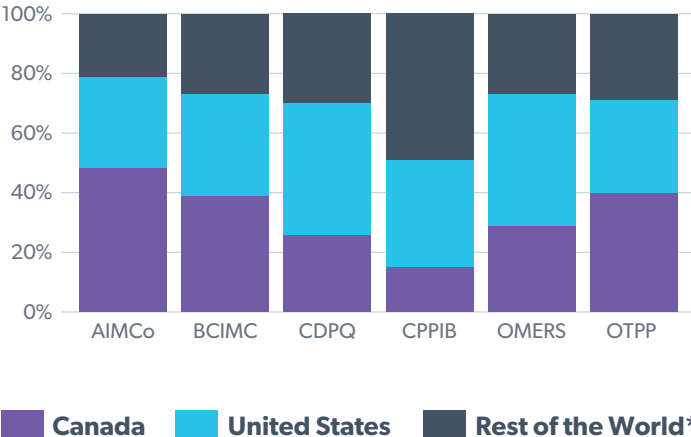
A1.2 Systemic risks: The COVID-19 shakeup

While pension-fund investment boards manage several unknown risks in terms of how the global economy and the Canadian workforce will evolve into the future, they must also consider sudden, and potentially large shocks, where several underlying economic or socio-economic conditions change unexpectedly and in parallel.

The COVID-19 health crisis and its related economic lockdowns are a striking example of a systemic event that shook the global economy and its financial systems. The pandemic brought the management of systemic risk front and centre to financial management and business strategies, changing the traditional view of what ‘resilience’ really means.

For pension funds, the pandemic created a sudden risk of significant market volatility, with an initial crash in equity values in the early stages of the pandemic in March 2020 coupled with

Figure 2: Geographic diversification of top 6 Canadian pension funds (% of total investment)



*Mainly Europe, Latin America & Asia Pacific

Variation in size and regulatory supervision across Canada’s pension plans

There is considerable variation across pension plans in Canada—consisting of contributory and non-contributory defined benefits, defined contributions, and hybrid varieties—and this variation extends to their regulatory and governance structures.

According to Statistics Canada, there are more than 16,000 registered pension plans in Canada.⁴⁷ Out of these, only 26 pension plans have assets over \$10 billion and above. The rest of these plans and funds vary considerably in size. For example, one-third are single member plans, more than 50% have fewer than 10 members, and under 20% have more than 100 members.

A handful of pension plans manage a significant portion of Canada’s pension assets—estimated to be upwards of \$4.5 trillion.⁴⁸ The smaller pension plans do not have in-house management expertise and rely on a wide variety of external providers to help establish and communicate investment policy and respond to investment inquiries from plan beneficiaries.

Regulatory and supervisory structures are diverse across the pension plans. For example, the eight largest Canadian pension funds are overseen by five different supervisory structures mainly at the provincial level.⁴⁹ In addition, the OSFI is responsible for federally regulated pension plans.⁵⁰ In the absence of a central authority for all pension plans, the Canadian Association of Pension Supervisory Authorities (CAPSA) provides guidance on pension plan management. For example, CAPSA has provided recent draft guidelines on how pension plans can manage ESG considerations.⁵¹

Due to the size and regulatory variance of Canadian pension plans, this report focuses on the largest pension plans—with details provided on the top eight pension funds. These pension funds have the ability to manage their own investment decisions, and therefore have the potential to build resilience to financial risks, including climate change. The practices adopted by the larger plans could set important precedent, including for external investment managers of the smaller pension plans.

a decline in interest rates. Other risks included socioeconomic considerations such as a risk that older workers could seek early retirement, leading to lower near-term contributions.

As a result, pension fund managers moved to create greater liquidity, using money market instruments (e.g., bankers’ acceptance and repurchase agreements) and derivatives (e.g., total returns swaps). There had also been some movement away from infrastructure assets to reduce over-exposure to illiquid assets.⁵²

Because of the considerable decline in equity values, some funds chose to rebalance their portfolio allocations—selling bonds and buying equities—to take advantage of low prices while maintaining their strategic target allocations. However, most funds delayed rebalancing until April 2020, when the market volatility and uncertainty were mostly resolved.⁵³

Meanwhile, the more recent materialization of decade-high inflation levels is posing a different type of risk for the investment performance of pension funds.⁵⁴ Many funds provide inflation protection to their beneficiaries by indexing pension payments to the Consumer Price Index. This ensures that future payments remain sufficient to cover the cost of living, and therefore these liabilities grow during periods of high inflation. High inflation may also erode real income from equities and fixed income assets, decreasing returns on investments. Funds continue to manage this new economic landscape, for example through optimising infrastructure and real estate investments.

A1.3 Managing systemic risk

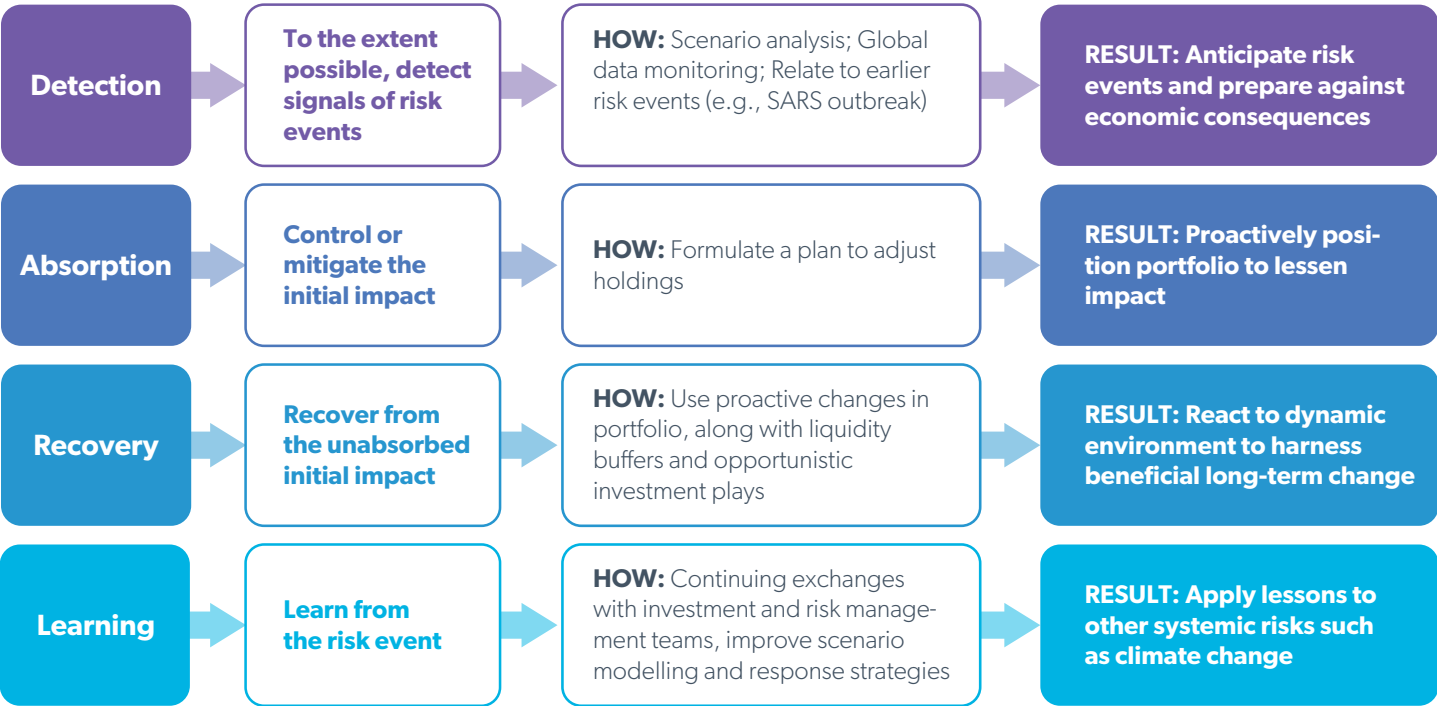
Pension funds are now strengthening their ability to guard against major global events, and that starts with understanding risk exposure within their investment portfolios. Some pensions fund administrators have noted that the topic of broad-scale resilience is now more salient than it was before the pandemic but have also noted that the 2007-09 global financial crisis also marked a clear change in how systemic risks are viewed and addressed.

There is no doubt that systemic events such as the coronavirus pandemic and the global financial crisis are different from traditional investments risks. They are exogenous and lead to large-scale, unexpected impacts on the macro economy and its interconnections with the financial system.

Managing systemic risks include concrete steps towards risk pooling and having adequate liquidity buffers. But managing systemic risk also involves preparing for future events that differ significantly from past trends, such as by continually evolving risk management practices to take account of new information and lessons learned from past events.

The Resilience Manifesto from Stanford University reasons that while the traditional view of resilience focuses more on the ability to anticipate and guard against known risks, a modern view of resilience incorporates additional factors, notably the ability to quickly adapt and transform from unanticipated shocks after they occur.⁵⁵

Figure 3: Stanford’s Resilience Manifesto applied to COVID-19



Source: Smart Prosperity Institute, adapted from the Resilience Manifesto

The manifesto identified a framework that can be used to help build resilience to systemic risks, including through detection, absorption, recovery, and learning. Applying the framework to the COVID-19 pandemic context, Figure 3 depicts how lessons learned can help build resilience to future systemic risks such as climate change.

Using these types of frameworks can help pension funds improve risk management functionalities. Canadian pension funds are now adapting their investment strategies and positioning themselves for the post COVID-19 future, including through building greater risk-management expertise in-house, and enhancing the independence of risk-management functions across different investment teams.⁵⁶

But existing risk management frameworks must also be augmented with new tools such as risk-related scenario analysis and stress testing. These exercises can help measure and assess potential risk impacts across investment portfolios, stretching far beyond risks at the fund's operational level. Building additional expertise in this area may require seeking out new skills and talent to help strengthen existing teams.

Funds also need to do more to communicate their risk management approach to beneficiaries and other stakeholders by proactively sharing their activities and defending their strategies. Seeking broad buy-in from beneficiaries and other stakeholders will help manage expectations during periods of elevated systemic change.



Pension funds and green bonds

Pension funds can invest in climate positive companies through public and private equity stakes and funds. They can also invest directly in clean energy infrastructure and green and sustainable buildings by taking equity positions or through loans. Moreover, pension funds can issue green or sustainability linked bonds that allow them to fund green areas as issuers and capital managers.

Green bonds function similarly to regular bonds, with proceeds earmarked for projects that improve environmental performance. The large Canadian pension funds had issued more than US\$6 billion in green bonds by 2021, not including those sold by their real estate divisions.⁵⁷ These green bonds are in high demand. For example, CPP Investment's record-setting green bond issuance from 2018 was oversubscribed by an estimated 80% with the board later issuing a €1 billion (C\$1.35 billion) bond in early 2019.⁵⁸

Green bonds not only help with strategic asset allocation, but also allow pension funds direct investments in non-traditional green areas, such as climate adaptation, sustainable water and wastewater management, and natural resource and land usage. Moreover, as part of following the ICMA's Green Bonds Principles, issuers need to formally report on the expected impact of the green bond process, which paves the way for robust and transparent reporting of climate upside investment.⁵⁹

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