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Influence.
Impact.

REALPAC

Sustainability Industry Report

COMMERCIAL REAL ESTATE

FROM OUR CEO

Michael Brooks
CEO, REALPAC

The World is Changing.

Not just from the increased physical risks of climate change, but also from governments and regulators. There is a continuing progression of carrots, sticks, and, of course, disclosure obligations affecting our industry.

Lenders are increasingly obligated to collect emissions data from their borrowers to minimize their own climate change transition risks.

Global equity providers are increasingly screening companies and demanding to know how those companies plan to decarbonize their portfolios and whether they are on track.

Consumers increasingly prefer sustainable products, and employees, particularly Generation Z, want to work for sustainable and socially conscious companies. Clearly, the corporate social license is evolving.

City-level mandatory building decarbonization laws, such as New York City's Local Law 97, are spreading throughout the United States and will soon be implemented in Canada.

The minimum energy efficiency standard for commercial buildings in the UK (such as the Display Energy Certificates) prevents a commercial building with a rating below E from being rented without first proving that all reasonable efforts have been made to improve its efficiency above the E rating.

In response to all the above, the number of companies committed to achieving Paris-aligned decarbonization pathways using the Science-Based Targets Initiative (SBTi) is increasing exponentially around the world.

REALPAC has been a global leader in assisting our members to meet these challenges since 2006, and this report is again a leading example of our work.

THE SUSTAINABILITY LANDSCAPE

Our Goals

The commercial real estate (CRE) industry recognizes the important role it plays in advancing the following United Nations Sustainable Development Goals (SDGs).*

*The UN SDGs are made up of 17 goals and are outlined in the 2030 Agenda for Sustainable Development (released in 2015).

INDUSTRY HIGHLIGHTS

Top 5 Priorities[1]

1. Net Zero Carbon
2. Energy Management
3. Reporting Disclosures
4. Diversity, Equity & Inclusion
5. Climate Resilience

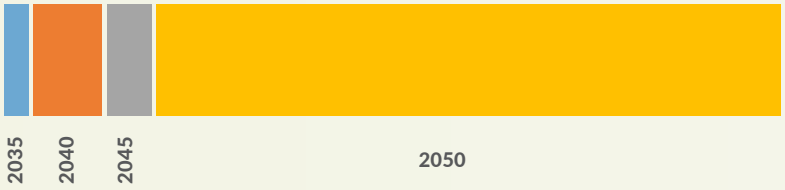
68%

of REALPAC members report on Scope 1 & Scope 2 Greenhouse Gas (GHG) Emissions.[2]

49%

of REALPAC members have a Net Zero Carbon target.[3]

Figure 1 REALPAC Member Net Zero Targets[4]



CLIMATE RISK

Climate-related Risks Include:

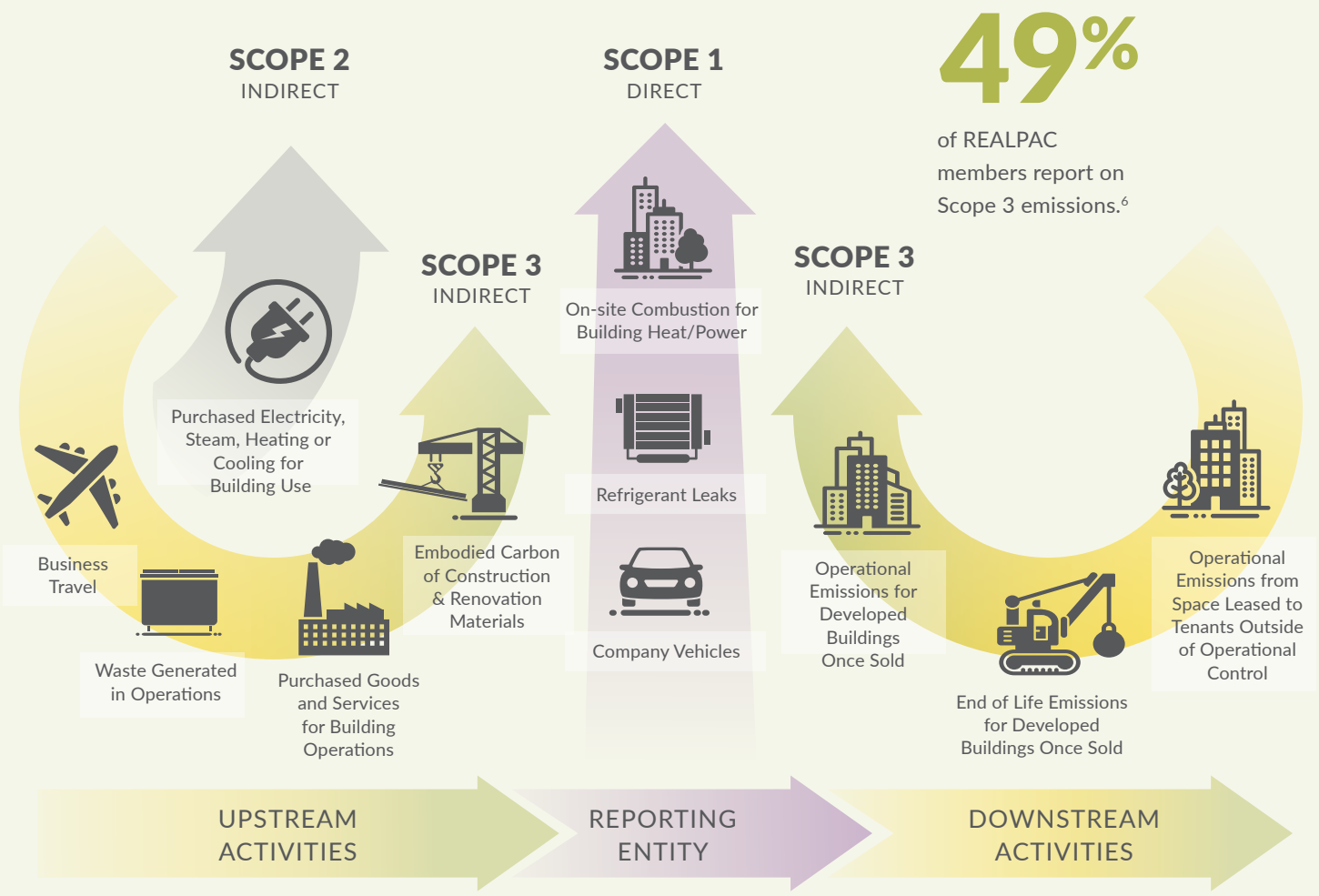
(1) Risks related to the transition to a lower-carbon economy

(2) Risks related to the physical impacts of climate change

GHG ACCOUNTING – SCOPE 3 EMISSIONS CONTINUE TO BE CHALLENGING

GHG emissions are classified into Scope 1, Scope 2 and Scope 3 emissions.

Figure 2 **GHG Emissions & Real Estate – Including Key Scope 3 Categories**[5]



Scope 3 Guidance for New Reporters

REALPAC recommends prioritizing the following categories:*

1. **Downstream Leased Assets**
   Operational emissions from space leased to tenants outside of operational control
2. **Capital Goods**
   Embodied carbon of construction and renovation materials
3. **Purchased Goods & Services**
   For building operations
4. **Waste Generated in Operations**

*NOTE: This approach above does not meet the requirements in the GHG Protocol Scope 3 standard.

Scope 3 GHG Emissions – Disclosures

OPTIONAL DISCLOSURE	REQUIRED DISCLOSURE
51% of REALPAC Members[7] are not reporting on Scope 3 emissions.	49% of REALPAC Members[8] are reporting on Scope 3 emissions.

Key Takeaway

While there continues to be variability in the market, reporting on Scope 3 emissions to your stakeholders is clearly emerging as a best practice within the industry.

SHIFTING PERSPECTIVES ON ENERGY & CARBON

The energy landscape for commercial buildings is shifting. A few key trends will present opportunities and risks for the industry going forward.

Figure 3 **Key Energy Trends for Buildings & Communities**

Decarbonized

Building electrification, more renewable energy, less fossil fuels.

Decentralized

District energy systems, greater use of waste heat, energy storage and onsite renewables.

Market-Based

Wider range of choice and potential partners around low carbon energy sources.

Rooftop solar is a good example of a low-carbon, decentralized energy source, with various financing, development, and operational approaches available.

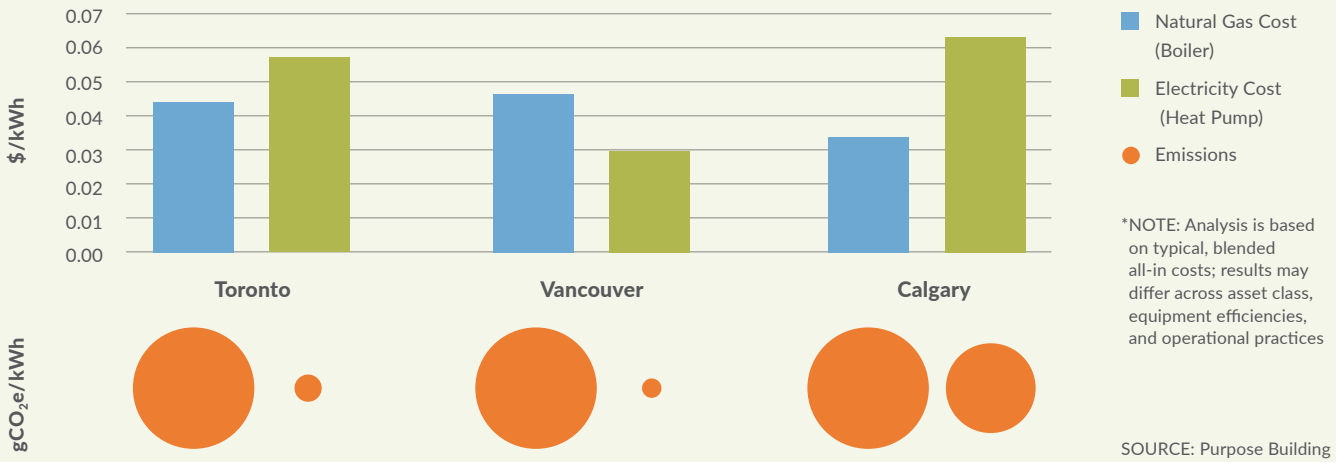
Key Takeaway

Real estate owners and funds will increasingly be able to choose from a wider range of energy sources, technologies, and market-based mechanisms (e.g., RECs) to secure low cost, low carbon energy for their buildings.

The Evolving Heating System Landscape – Heat Pumps vs. Natural Gas Boilers

Heat pumps have become an increasingly popular technology over the last few years, in support of decarbonization efforts.

Figure 4 **Heating System Cost & Carbon Intensity**[9]



*NOTE: Analysis is based on typical, blended all-in costs; results may differ across asset class, equipment efficiencies, and operational practices

SOURCE: Purpose Building

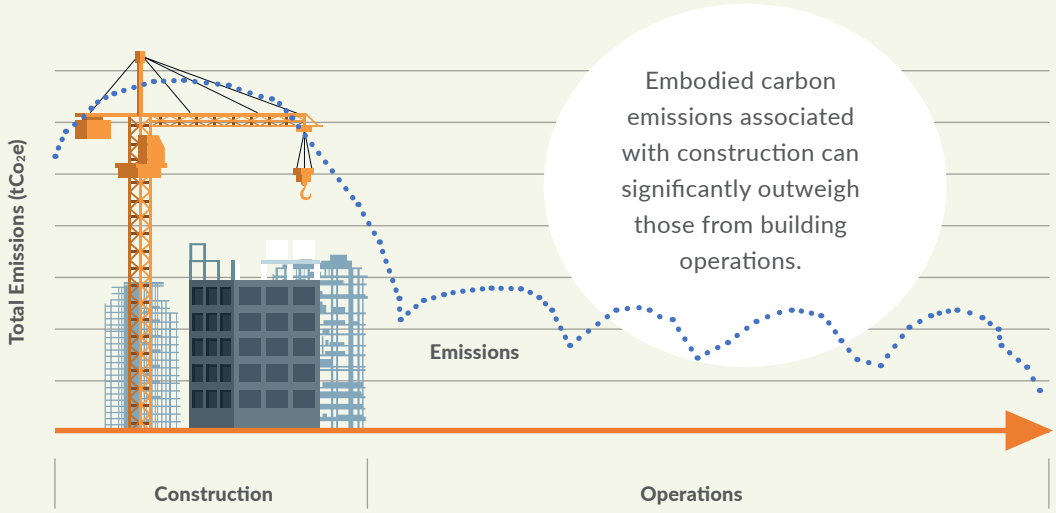
Heat pumps are becoming as affordable as natural gas boilers and are already as carbon efficient.

Many leading real estate owners and funds are pursuing 'hybrid' systems (e.g., heat pumps with small backup natural gas boilers) to balance cost and carbon considerations while improving the resiliency of their buildings (e.g., to deal with power outages).

EMBODIED CARBON IS EMERGING AS A KEY ISSUE FOR DEVELOPERS & CLIENTS

A building generates greenhouse gas emissions throughout all stages of its life cycle.

Figure 5 **Building GHG Emissions**[10]



20-30%*

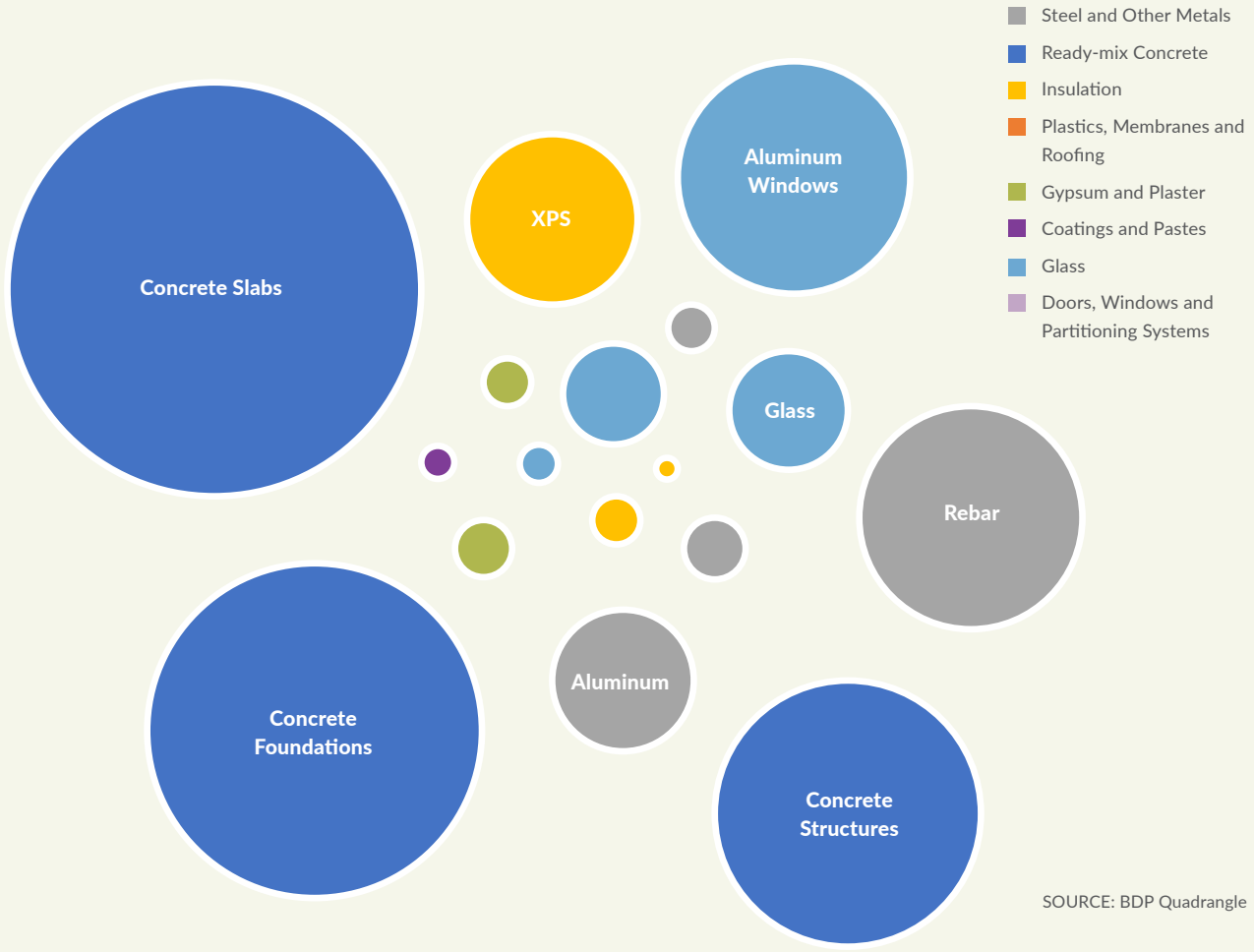
Potential reduction in embodied carbon emissions from concrete as a result of using low carbon concrete.[11]

*Deeper reductions are possible, though applicability, local availability, and cost may be limiting.

The Biggest Embodied Carbon Impact & Opportunity: Concrete & Steel

Concrete and steel are the most significant drivers of embodied carbon emissions from new building construction.

Figure 6 **Sample Embodied Carbon Emissions Profile from New Multi-Residential Building (16 Stories)**[12]



SOURCE: BDP Quadrangle

Concrete and steel have the largest embodied carbon footprint because of their high carbon intensity and the fact they are found in such a wide range of building components including floor slabs, foundations, columns, walls, and beams.

3

Leading Embodied Carbon programs across Canada.

Canada | CITY OF VANCOUVER | TORONTO

LOW CARBON TECHNOLOGIES – PROVEN WINNERS & ONES TO WATCH [13]

Building owners are looking for impactful, cost-effective technologies to support their decarbonization efforts. The low carbon technologies below are broadly applicable to buildings across Canada.

Top 3 'Proven Winners'

1. Heat Pumps
2. Low Carbon Concrete
3. Exhaust & Internal Gain Heat Recovery

Strong carbon reduction impact, cost effective tCO_2e reduction & de-risked in the market.

Top 3 'Ones to Watch'

1. Mass Timber
2. Energy Storage
3. Sewage Heat Recovery

Strong carbon reduction impact, still being de-risked in the market.

Low Carbon Technologies by Asset Class

Office	Multi-Residential	Retail	Industrial
PROVEN WINNERS			
• Air source or ground source heat pump • Lighting control systems • Exhaust & internal gain heat recovery • Controls optimization • High-performance building envelope • Low carbon district energy • Low carbon concrete	• Air source or ground source heat pump • In-suite air source heat pumps • Controls optimization • High-performance building envelope • Low carbon district energy • Low carbon concrete	• Air source or ground source heat pump • Lighting control systems • Exhaust & internal gain heat recovery • Controls optimization • High-performance building envelope • Low carbon concrete	• Air source or ground source heat pump • Lighting control systems • High-performance building envelope • Low carbon concrete • Rooftop solar
ONES TO WATCH			
• Heat pumps with low GWP refrigerants • Mass timber • Energy storage • BIPV	• CO_2 heat pump • Sewage heat recovery • Mass timber • Energy storage • BIPV	• Mass timber • Rooftop solar • CO_2 heat pump	• CO_2 heat pump • BIPV

Scope 1 Emissions

Natural gas consumption is the primary source of emissions for most buildings in Canada.

MONTRÉAL	95%
VANCOUVER	90%
TORONTO	80%
CALGARY	65%
HALIFAX	25%

Commercial Building Emissions from Natural Gas.[14]

Focusing on Scope 1 emissions from natural gas (e.g., installing heat pumps) must be a top priority for the industry for building decarbonization.

*NOTE: Broadly indicative across asset classes; assumes equal amounts of electricity and gas over a full year.

~3:1

Heat Pumps

Rule of thumb on the ratio of heat generated relative to energy used.

~0.8:1

Natural Gas Boilers

Rule of thumb on the ratio of heat generated relative to energy used.

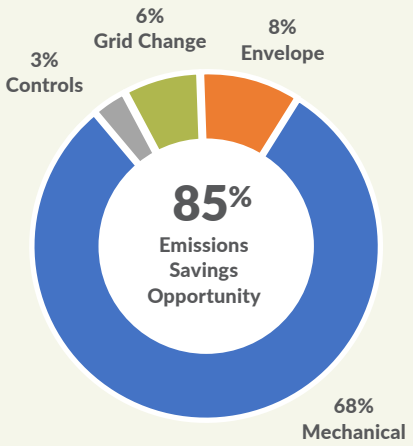
LEANING INTO NET ZERO CARBON – DECARBONIZATION PATHWAYS

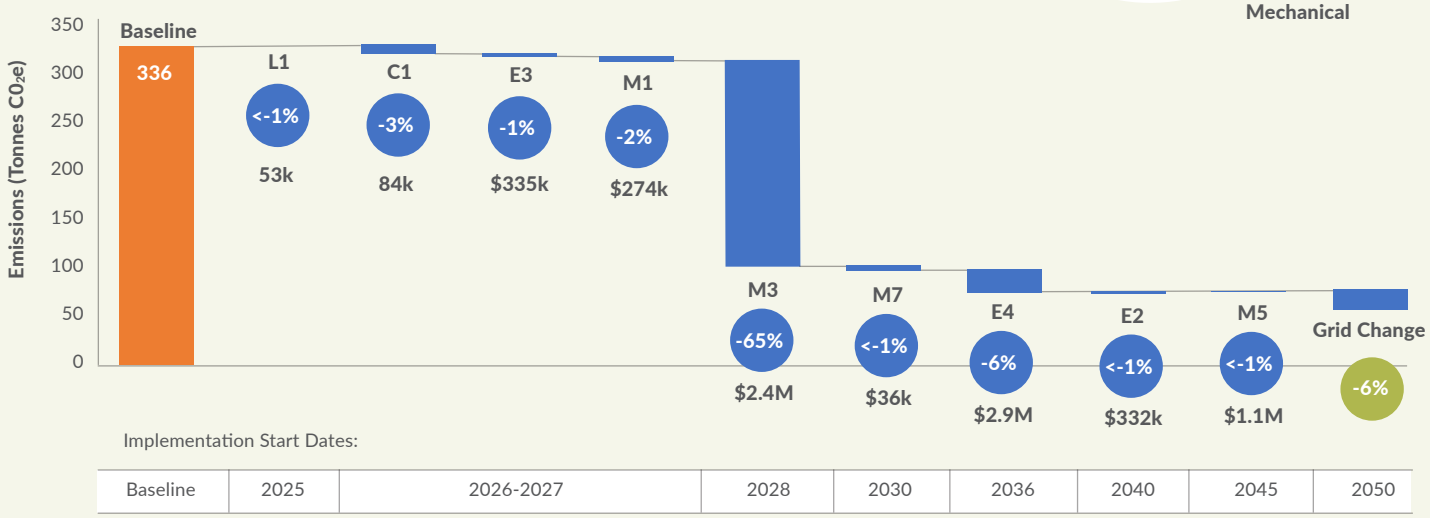
Real estate companies and funds are considering detailed net zero carbon pathways for their portfolio and assets.

Figure 7 **Sample Asset Level Decarbonization Pathway Summary**[15]

Total Capital Costs ($2023)	**$7,466,000**
Annual Utility Savings ($2023)	**$106,000**
NPV ($) (2030-2050)($)	**-$2,687,000** (Compared to BAU - $1.25M)
ROI (%)	**79%**

SOURCE: JLL





Implementation Start Dates:

Baseline	2025	2026-2027	2028	2030	2036	2040	2045	2050

ID	Measure Name	Implementation Year
L1	Advanced Lighting Controls	2025
C1	Controls Upgrade, RCx and HVAC Optimization	2025-2027
E3	Conduct Thermal Imaging Assessment and Minor Repairs	2026
M1	Installing VSDs and General Fan Upgrades	2026-2027
M3	Replace NG Heating Boiler with Electric ASHP & Existing Gas Backup	2028
M7	Replace Electric Water Heater Electric ASHP	2030-2031
E4	Window Replacement with Double Pane and Low E Coating	2036-2040
E2	Roof Replacement with Higher R Value	2040-2043
M5	Cooling Tower & Chiller Replacement Like for Like	2045

NOTE: Illustrative only; details shown are for a unique, smaller office building in Ontario; ROI calculation excludes the residual value of proposed equipment at year 2050.

Industry best practice around asset level decarbonization plans typically compare (1) total capital costs, (2) annual utility savings, (3) net present value (NPV), (4) return on investment (ROI) and (5) $/$tCO_2e$ reduced across “Business As Usual (BAU)” and “Decarbonization Pathway” scenarios.

Figure 8 **Carbon Offsets & Canadian Real Estate**

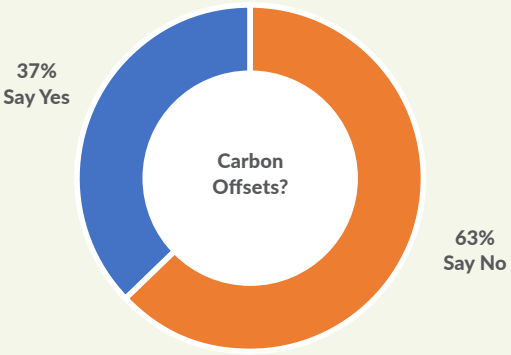
Carbon Offsets – Part of the Plan?

Carbon offsets generate strong opinions from supporters and detractors - and there is some variability in the market.

CAGBC's Zero Carbon Performance standard* (v2) allows carbon offsets from select providers.* The SBTi's Corporate Net Zero Carbon standard* (v1.2) does not.

*NOTE: See Glossary for more details

Q13 (2024): In 5 years, do you expect to be reliant on purchasing carbon offsets to achieve your emission reduction goals?



PHYSICAL CLIMATE RISK – REAL CONCERNS FOR THE FUTURE

Real estate companies and funds are becoming increasingly aware of a wide range of physical climate risks. Some studies suggest potential average cost savings of $3-8 over a ten year period for every $1 invested in physical climate risk reduction measures.

Figure 9 **Top Physical Climate Risks & Risk Reduction Measures**[16]

Flood

- Emergency Management Plan, including flood procedures.
- Elevators are equipped with water sensors to automatically return to higher floors if water is in the basement or underground parking.
- Critical equipment such as HVAC, electrical and communication systems and server rooms are elevated above expected flood levels or wet flood-proofed.

Wildfire

- "Wildfire-resistant zone" is established within 10 meter perimeter of property.
- Roofs and gutters are kept free of combustible materials, and openings and vents are equipped with non-combustible screen mesh.
- HEPA/Activated Carbon filters are installed on HVAC system to cleanse air from wildfire smoke. For new construction, fire resilient materials should be used.

Windstorm

- Roof is reinforced and additional fasteners are applied at the perimeter and corners.
- Impact-resistant glass is installed to prevent shattering from debris.
- Flood resilience measures are in place to mitigate damage that may be caused by windstorms such as hurricanes.

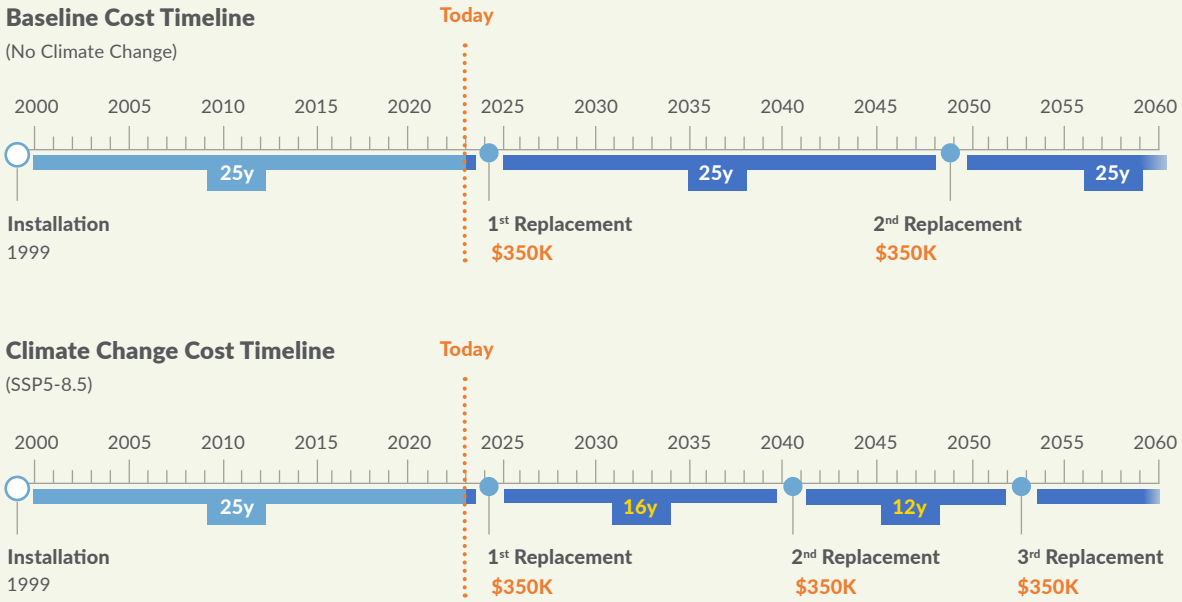
Extreme Heat

- HVAC system is designed to effectively condition air and maintain thermal comfort of occupants under foreseeable extreme heat conditions.
- Emergency Management Plan, including extreme heat procedures.
- Provision are made for emergency backup during potential power outages.

Climate Value at Risk – HVAC Equipment

Climate Value at Risk (CvaR) compares the value of assets in a world with climate change relative to the same world without climate change. One aspect of this pertains to HVAC equipment in buildings.

Figure 10 **Physical Climate Risks & Capital Equipment – Example**[17]



SOURCE: RWDI & ClimateFirst

Key Takeaway

The figure above is one example of how a warmer climate may impact the service life of a building's cooling equipment and increase capital costs over time.

$1,050K – **$700K** = **$350K**

Climate Change Cumulative Spend | Baseline Cumulative Spend | Climate Value-at-Risk

*NOTE: Based on Pacific Climate Impacts Consortium. (n.d.). SSP5-8.5 highest emissions scenario.

Cooling Demands

Increase in cooling degree days between 2014-2050[18]

218%	183%	73%	66%	62%
Vancouver	Calgary	Ottawa	Montréal	Toronto

SUSTAINABLE FINANCE

Sustainable finance refers to financial activities that integrate environmental, social and governance factors to promote sustainable economic growth.

Relevant SDGs

- 3 GOOD HEALTH AND WELL-BEING
- 5 GENDER EQUALITY
- 7 AFFORDABLE AND CLEAN ENERGY
- 8 DECENT WORK AND ECONOMIC GROWTH
- 11 SUSTAINABLE CITIES AND COMMUNITIES
- 13 CLIMATE ACTION

SUSTAINABLE FINANCE MECHANISMS CONTINUE TO EVOLVE

An overview of key sustainable finance mechanisms for commercial real estate follows:

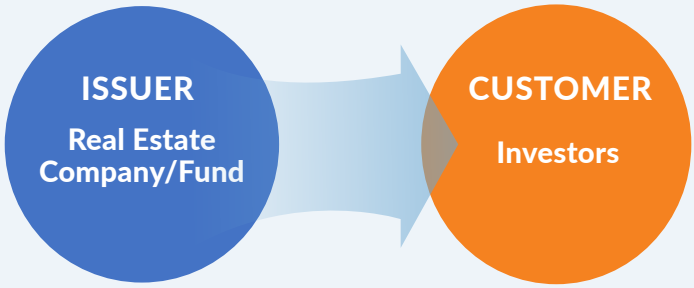
Figure 11 Sustainable Finance Mechanisms Overview[19]

Sustainable Finance Mechanism

Stakeholder Benefits

BONDS

Green Bonds
Social Bonds
Sustainability Bonds
Sustainability-Linked Bonds



Financial Benefits:
- Potential pricing incentives
- Attraction of new sources of capital

Other Benefits:
- Momentum towards corporate and investment ESG goals

Financial Benefits:
- Lower risk of investment portfolio

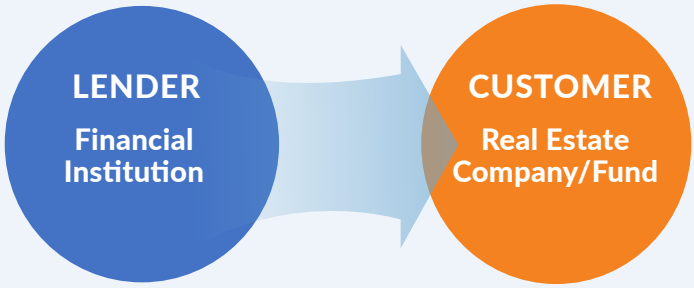
Other Benefits:
- Momentum towards corporate and investment ESG goals

Project Types

Green buildings
Energy efficiency/Low carbon retrofits
Renewable energy
Affordable housing

LOANS

Green Loans
Sustainability-Linked Loans



Financial Benefits:
- Potential pricing incentives
- Lower risk of lending portfolio

Other Benefits:
- Momentum towards corporate and investment ESG goals

Financial Benefits:
- Potential pricing incentives

Other Benefits:
- Momentum towards corporate and investment ESG goals

KPIs

Carbon emissions
Energy consumption
Diversity, equity & inclusion
Green buildings

KEY FACTS

41%

of surveyed REALPAC members utilize sustainable finance products.[20]

TOP 3

Sustainable finance products used by surveyed REALPAC members:[21]

1. **Green Bonds**
2. **Sustainability-Linked Loan**
3. **Green Loan**

0-5 bps

Typical green bond pricing discount for issuers over the last 5 years.

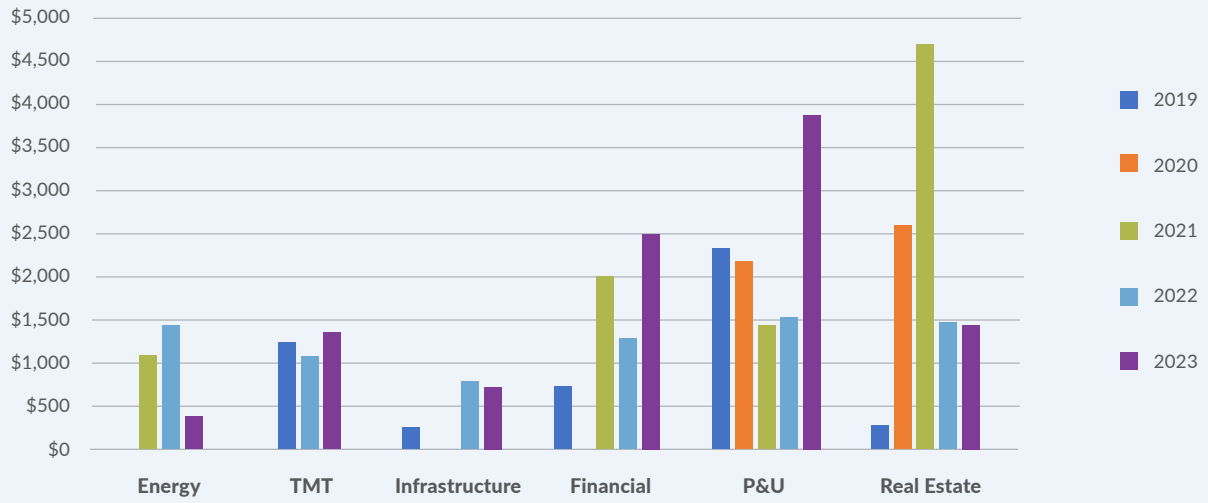
$1.5B

real estate industry corporate and financial issuance of sustainable finance products in 2023.[22]

(14% of Canadian sustainable finance market)

The sustainable finance market in Canada is still evolving, with varying corporate and financial issuances of sustainable finance products by industry sector.

Figure 12 Canadian Sustainable Finance Market – By Sector (C$MM)[23]



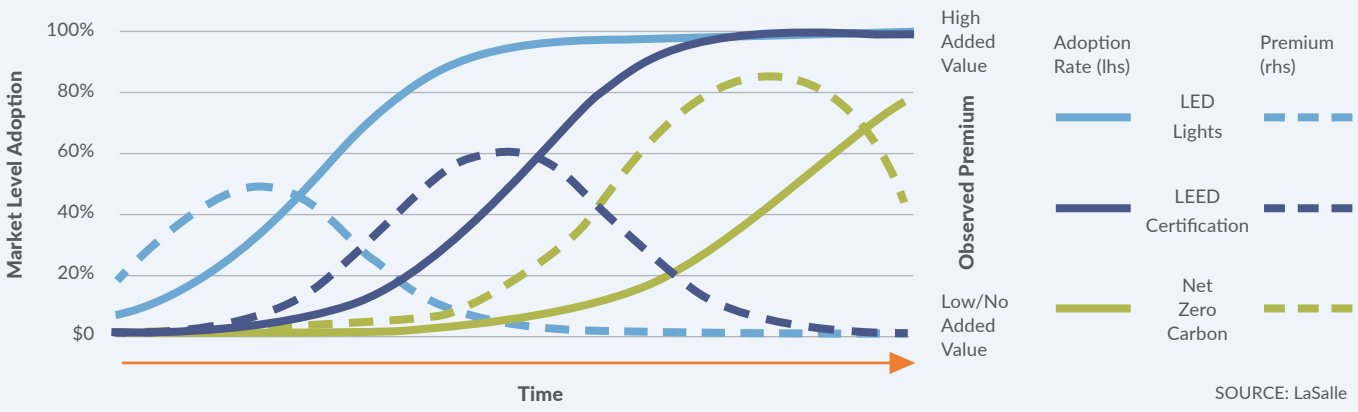
GREEN PREMIUMS & BROWN DISCOUNTS – WHERE ARE WE?

What is the green premium for an asset with sustainable credentials? Is there – or will there be – a brown discount for inaction? These are key questions across the industry.

The Details Matter

The green premium for a particular building in a particular market depends on the level of market adoption for a green credential at a specific point in time.

Figure 13 Value of Green Credentials[24]



SOURCE: LaSalle

The figure above notes that the value of a sustainable feature (green premium) tends to be low at first as awareness is low, increases as demand grows, and eventually declines when that feature becomes an industry standard.

The opposite effect – a brown discount – may apply to older assets that have fallen behind on best practices and are unable to meet future regulatory requirements (e.g., carbon performance limits for buildings).

BENCHMARK

30% Projected demand for low carbon space among top global office occupiers that may not be met by 2025.[25]

SPOTLIGHT

Zero Carbon Buildings Adoption Across Canada

	ZCB Design Registered/Certified	ZCB Performance Certified
Office	26	12
Retail	1	1
Industrial	61	18
Multi-Res	17	3
Other	141	28

CAGBC ZCB Projects (May 2024)[26]

Broad adoption of a leading sustainability standard has happened before in the industry (LEED). Investor and tenant demand for net zero carbon buildings could be at least as strong – or stronger – than for LEED.

INDUSTRY OPPORTUNITY

ZCB Certification & Performance

Leading investors and tenants appear ready to reward real estate owners and funds in Canada with certified zero carbon buildings (particularly office, industrial and multi-residential) as well as those focused on emissions performance.

PROJECTING KEY DECARBONIZATION MODEL VARIABLES

Low carbon real estate investments are based on a range of asset-level variables, with varying views on the projected trajectory of key variables.

Carbon Price	Utility Rates	Valuation Premium
OVERVIEW		
The federal carbon price is one tool to help reduce emissions across the economy. It is a politically charged topic and not currently at a level that drives significant change in the real estate industry.	The rates for electricity, natural gas, and other energy sources (e.g., steam, deep lake water cooling) drive the energy operating costs of buildings and play a key role in capital renewal investment decisions.	Appraisers seek to measure how a typical market participant would price the asset, by interpreting evidence and the economic landscape to come to their opinion of value.
CURRENT STATE		
Federal Carbon Price: $80/tonne (2024).	Utility rates vary across regions and energy types (natural gas vs. electricity) and have historically risen by between 2-10% / year.	Appraisal standards and appraisers are not currently valuing low carbon buildings effectively.
POSSIBLE FUTURE SCENARIOS		
Between 2025 - 2030 Recommend modelling up to $170/tonne. **Between 2031 - 2050** Recommend modelling up to $500/tonne. NOTE 1 - Significant political uncertainty is involved around carbon pricing; the 2031-2050 timeline transcends multiple federal elections and so carbon pricing, in some form, is assumed in order to align with government and corporate commitments to net zero by 2050 from around the globe.	**Between 2025 - 2030** Recommend modelling based on historical averages for specific region and energy type. **Between 2031 - 2050** Recommend modelling up to 2X historical averages for specific region and energy type. NOTE 2 - Numbers provided under current state span energy types and regions. specific regional and energy type considerations are important and required for modelling purposes.	**Between 2025 - 2030** Recommend modelling that appraisers will recognize modest valuation premium for low carbon buildings. **Between 2031 - 2050** Recommend modelling that appraisers will recognize strong valuation premium for low carbon buildings. NOTE 3 - The growing willingness in the market to price net zero carbon assets points towards a future where cap rate premiums take hold within 5 years and continue to grow from that point forward for priority asset classes, e.g., urban office, multi-res & industrial (see page 18 on Appraisers & Appraised Values).

SPOTLIGHT

Building Performance Standards Future Industry Impact

Policy directly requiring emissions reductions from buildings is ramping up.

Over 40 U.S. cities have committed to passing a Building Performance Standard (BPS) by 2026 or earlier, like New York's LL97, which introduces requirements around building energy use and/or emissions reductions.

Vancouver's Building Performance Standard was the first in Canada to introduce requirements around building energy and emissions reductions. Energy reporting commenced in 2024 and emission limits are set to begin in 2026.

Momentum around building performance standards globally will result in another approach to carbon pricing (by requiring investments to meet emission limits) and further reinforces the case for stronger valuation premiums for low carbon buildings in the future.

APPRAISERS & APPRAISED VALUES – STILL PLAYING CATCH UP

Real estate owners' investments in energy efficiency, decarbonization technologies, and net zero carbon certifications are not being effectively considered in building valuations.

Net Zero Carbon, Investors & Cap Rates

A survey of investors across the Canadian CRE industry was conducted by JLL Canada in 2022 and 2023 on the topic of net zero carbon buildings and cap rates.* The survey found that most investors are incorporating a better cap rate in their net zero underwriting. The percentage of investors that would pay a premium also increased significantly across 3 of 4 asset classes between 2022 and 2023.

Figure 14 **Percentage of Investors Incorporating a Better Capitalization Rate Into Their Net Zero Underwriting*[27]**

*NOTE: Survey respondents are primarily large institutions with long-term decarbonization commitments; current market conditions and uncertainty has resulted in limited concrete transactional evidence to confirm these results.

SOURCE: JLL

JLL Canada's survey results illustrate: (1) there is an evolving market understanding on the underlying value of net-zero carbon assets (an element of which can be attributed to reduced obsolescence / stranding risk); and (2) there is a growing willingness to price it.

SPOTLIGHT

International Valuation Standards (IVS). Help Is on the Way[28]

The latest edition of the IVS, effective January 2025, includes a new requirement that "the impact of significant ESG factors should be considered in determining the value of a company, asset or liability."

The International Valuation Standards Council (IVSC) acknowledges that the quantification of ESG is still in a developmental stage, but also that "ESG factors may impact valuations both from a qualitative and quantitative perspective and may pose risks or opportunities that should be considered.

The bottom line? As of January 2025, to produce an IVS compliant valuation, "ESG factors and the ESG regulatory environment should be considered in valuations to the extent that they are measurable and would be considered reasonable by the valuer applying professional judgement."

BENCHMARK

20-25 bps

Average premium within capitalization rates for net zero certified buildings.[29]

SUSTAINABILITY REPORTING

Sustainability reporting is about the disclosure of an entity's sustainability-related risks and opportunities to its stakeholders, who in turn can use the information to make decisions relating to the entity.

Relevant SDGs

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

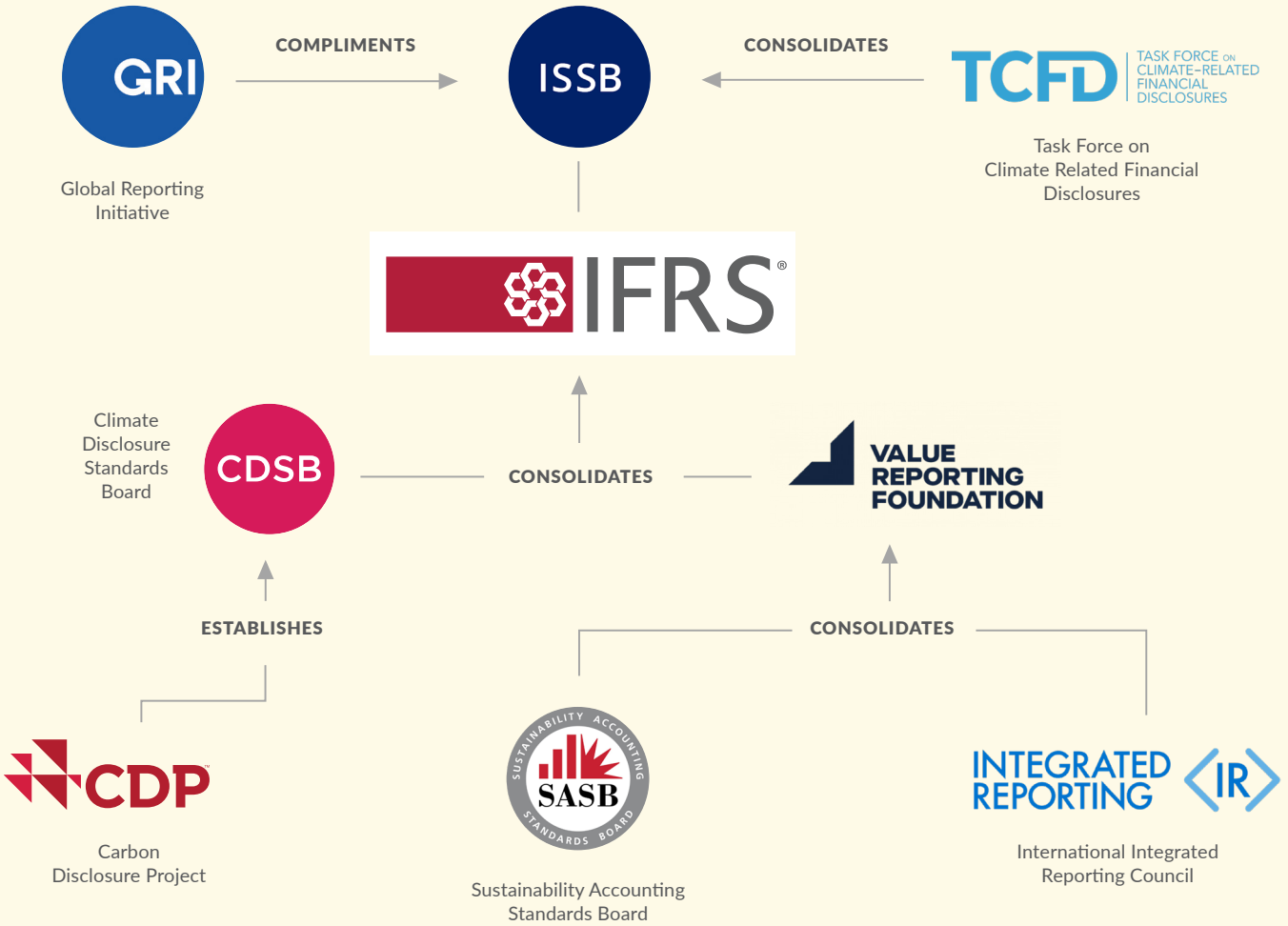
13 CLIMATE ACTION

THE GLOBAL SUSTAINABILITY REPORTING LANDSCAPE IS NOW CLEARER

2023 was a significant year for sustainability reporting.

The International Sustainability Standards Board (ISSB) published IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures in June 2023.

Figure 15 **Global Reporting Standards Landscape**[30]



Beyond Harmonization – Key Global Trends in Sustainability Reporting

01. Financial Reporting

Sustainability reporting is increasingly connected to financial reporting practices & professionals within companies.

02. Transparency

Investors want clarity on the cost of meeting sustainability commitments as well as a road map for how they will be achieved.

03. Greenwashing

A growing number of investors have doubts about the reliability of sustainability information reported by companies.

SASB Standards Gaining Momentum[31]

SASB Standards are designed to identify and standardise disclosure for the sustainability issues most relevant to investor decision-making across 77 industries (including real estate).

As of August 2022, the International Sustainability Standards Board (ISSB) of the IFRS Foundation assumed responsibility for, and encourages the use of, the SASB® Standards.

75%

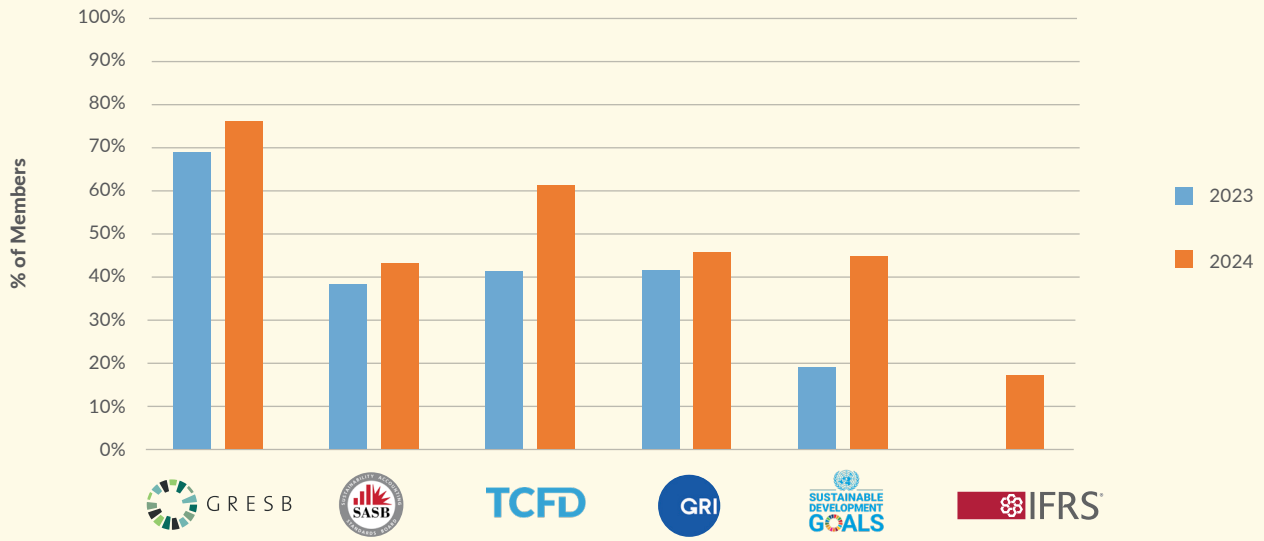
of investors (across industry sectors) want companies to report the costs and road map to achieve their sustainability commitments.[32]

CANADIAN SUSTAINABILITY REPORTING PRACTICES ARE LACKING CONSISTENCY

Investors want clear, consistent, and comparable information on the material sustainability issues facing real estate companies.

The current reporting landscape makes this challenging – as evidenced by the range of frameworks used by Canadian real estate companies and funds to report on their performance.

Figure 16 **Sustainability Reporting by Framework – Canadian CRE Industry**[33]



The Canadian Sustainability Standards Board (CSSB) is seeking feedback from stakeholders on IFRS Sustainability Standards for use in Canada. The Canadian Securities Administrators (CSA) is monitoring the feedback received by the CSSB and will issue a proposed rule once those standards are confirmed.

BENCHMARKS[34]

75%

of REALPAC members report to the GRESB annual benchmarking survey.

62%

of REALPAC members reference TCFD to guide their reporting.

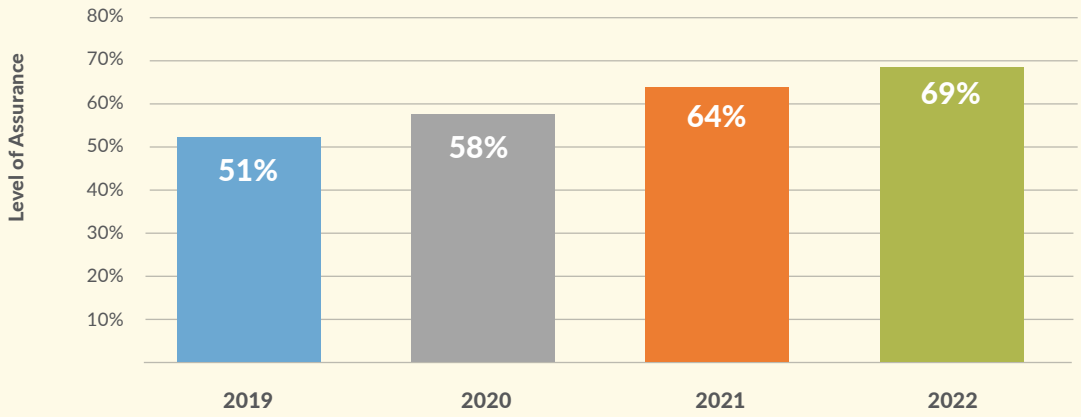
69%

of REALPAC members use 3 or more frameworks to report on ESG performance.

3RD Party Assurance – Increasing Interest & Importance

The appetite for 3rd-party assured sustainability data is growing, driven by investor demand for credible information and leadings standards such as the SBTi.

Figure 17 **Global State of Play – Sustainability Assurance Practices, All Industries**[35]



There is a clear upward trend in assurance of ESG information globally across all industries. It appears that the real estate industry in Canada (with an average of 38% obtaining some level of assurance) is behind in this area.

38%

of Canadian GRESB respondents have obtained some level of assurance on their reported ESG information.[36]

CANADIAN ENGAGEMENT IN GRESB – ANOTHER YEAR OF PROGRESS[37]

10%

of Canadian GRESB respondents achieved a 5 Star rating.

★★★★★

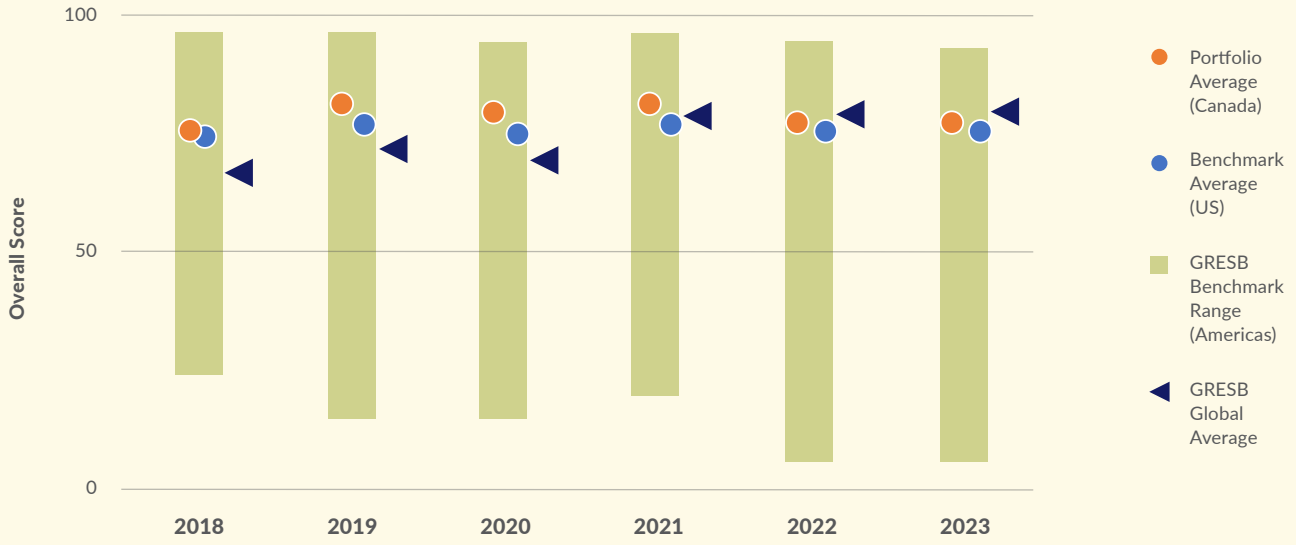
GRESB

REALPAC is proud to be the long-standing Canadian country partner for GRESB.

GRESB is used to benchmark the ESG performance of $7.2 trillion in real estate and infrastructure assets around the globe which includes over 2,000 real estate companies / funds and 170,000 buildings as of 2023.

Canadian real estate companies and funds were some of the earliest GRESB participants and continue to be some of the highest performing globally.

Figure 18 **Canadian GRESB Participant Performance, 2018 - 2023**



The Canadian GRESB respondent average has increased from 76 to 79 between 2018 and 2023. The Canadian average led the US average in all years. The Canadian average also led the Global average in all years, with the exception of 2022 and 2023.

The tighter spread between Canadian average GRESB scores and US/Global scores does not reflect backsliding by long standing Canadian participants, but rather continues to reflect a dilution of the score as a result of newer entrants. The significant increase in Canadian GRESB participation between 2018 and 2023 (220% increase) has resulted in downward pressure on the Canadian average GRESB score.

BENCHMARKS

Overall Score

79/100

Canadian GRESB respondent average

Management Score

28/30

Canadian GRESB respondent average

Performance Score

51/70

Canadian GRESB respondent average

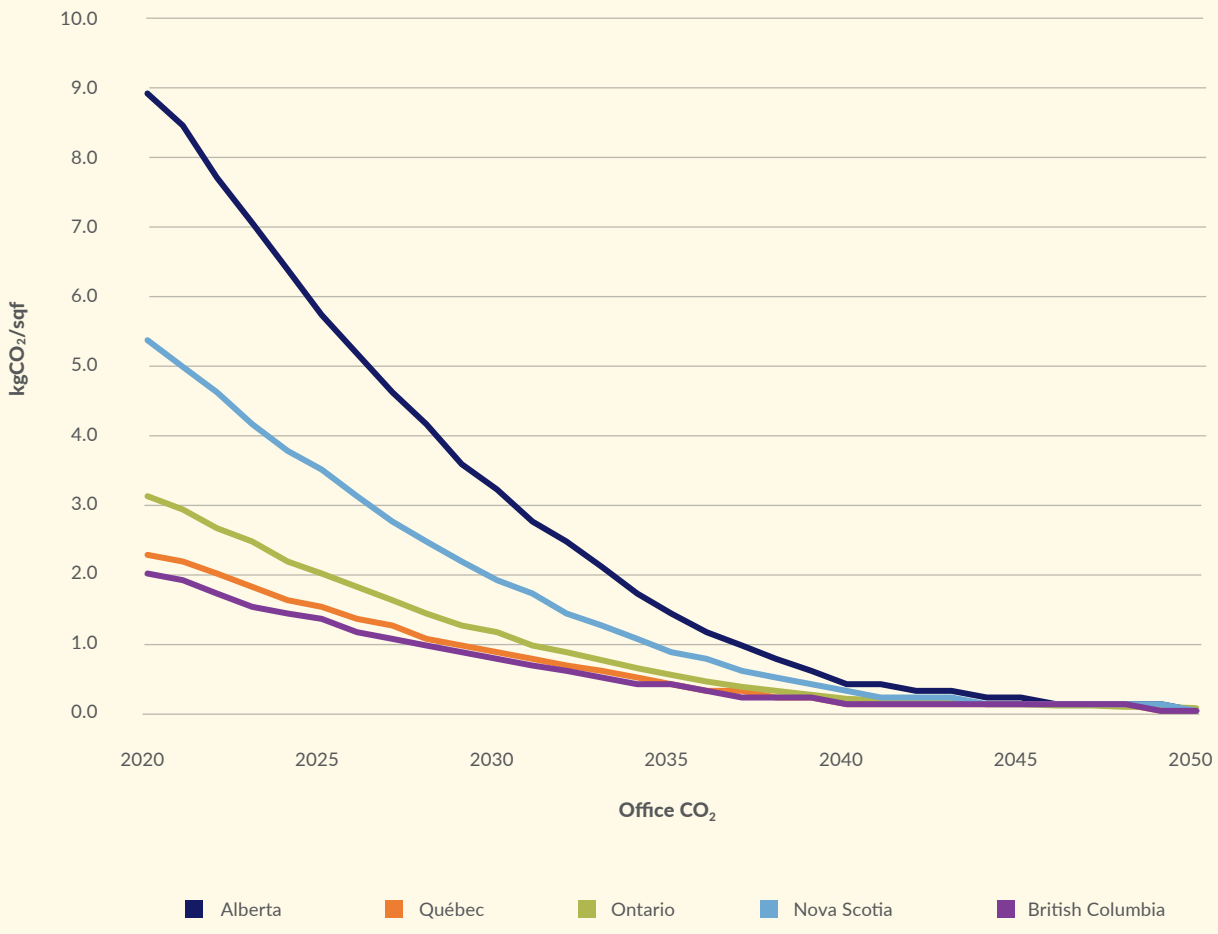
CRREM DECARBONIZATION CURVES – POTENTIAL INDUSTRY BENCHMARK

Investors and real estate owners require a tool that defines what it means for a building to be “on track” to net zero.

The Carbon Risk Real Estate Monitor (CRREM) is one tool that has the potential to do this providing separate ‘Paris aligned’ target pathways for GHG emissions performance (GHG curve) and building energy efficiency performance (EUI curve).

A building can be evaluated against EUI and GHG curves for their region & asset class.

Figure 19 **Draft CRREM GHG Pathway – CAN Office**[38]



Transition risk may result from (1) Buildings that have not yet achieved their maximum energy efficiency or/ and on-site renewable capacity and (2) Grids that require additional intervention (decarbonization) to achieve Paris alignment.

It is important for the industry to work on energy efficiency of the property first as well as decarbonizing energy sources wherever possible (including eliminating on site fossil fuel combustion).

CRREM & North America – Closing the Gap?

The first phase of CRREM placed a focus on European real estate. The second phase of CRREM is about expanding globally.

A number of partners, led by ULI and the Lawrence Berkeley National Lab (LBNL) – and REALPAC and the CAGBC in Canada – have been working with CRREM to develop more granular curves for the US and Canada since early 2023.

CRREM's governance, methodology, and final North American curves are still under development. Results will determine how broadly CRREM is adopted by North American based real estate owners and funds.

BENCHMARKS[39]

The following are sample benchmarks from the Draft Canadian CRREM Curves:

	Start 2020	Target 2050
Toronto, ON – Office		
Carbon ($kgCO_2e/sf$)	**3.0**	**0**
Calgary, AB – Warehouse		
Carbon ($kgCO_2e/sf$)	**9.3**	**0**
Vancouver, BC – Shopping Centre		
Carbon ($kgCO_2e/sf$)	**1.1**	**0**
Montréal, QC – Multi-Family High Rise		
Carbon ($kgCO_2e/sf$)	**1.8**	**0**
Halifax, NS – Multi-Family Low Rise		
Carbon ($kgCO_2e/sf$)	**5.8**	**0**

NOTE: Complete Draft CRREM and CO_2e curve data for Canada can be found at the ULI CRREM North American Project website.

GLOSSARY

BIPV: Building Integrated Photovoltaic systems.

Canada Green Building Council (CAGBC): The CaGBC supports the building sector's transition to green buildings. They work with Canada's real estate and building sector to provide the market insights, expertise and practical solutions they need to push their sustainability efforts further and faster.

- **CAGBC ZCB-Performance Standard:** Used to demonstrate that a building has achieved net zero carbon operations.
- **CAGBC ZCB – Design Standard:** Guides the design of new buildings and the retrofit of existing ones so they can achieve net zero.

Canadian Securities Administrators (CSA): The CSA brings provincial and territorial securities regulators together to share ideas and work at designing policies and regulations that are consistent across the country and ensure the smooth operation of Canada's securities industry.

Canadian Sustainability Standards Board (CSSB): The CSSB works to advance the adoption of sustainability disclosure standards in Canada. The CSSB develops Canadian Sustainability Disclosure Standards (CSDS) that align with the global baseline standards developed by the International Sustainability Standards Board (ISSB) – but with modifications to serve the Canadian public interest.

Carbon Offsets: A credit for reductions in GHG emissions that occur somewhere else and that can be purchased to compensate for the emissions of a company or project.

- **Gold Standard:** Gold Standard is a not-for-profit headquartered in Geneva, Switzerland, focused on catalysing more ambitious climate action to achieve the global goals through robust standards and verified impacts.
- **Verified Carbon Standard (VCS):** The VCS Program is the world's most widely used greenhouse gas (GHG) crediting program. It drives finance toward activities that reduce and remove emissions, improve livelihoods, and protect nature.
- **The Climate Action Reserve:** The Reserve develops, promotes and supports innovative, credible market-based climate change solutions that benefit economies, ecosystems and society.
- **American Carbon Registry (ACR):** ACR is a leading carbon crediting program operating in global compliance and voluntary carbon markets.

Carbon Risk Real Estate Monitor (CRREM): CRREM is a leading global initiative for establishing targets for operational carbon emissions for standing real estate investments consistent with the ambitions of the Paris agreement.

Embodied Carbon: Emissions associated with materials and construction processes throughout the whole life cycle of a building.

Environmental Product Declaration (EPD): An environmental declaration providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information.

Global Warming Potential (GWP): A metric that examines each greenhouse gas's ability to trap heat in the atmosphere compared to carbon dioxide (CO2), measured over a specified time horizon.

Green-e®: Green-e® is a global leader in clean energy and carbon offset certification that aim to make it easy for businesses and individuals to purchase verified clean energy with confidence, and for consumers to choose sustainable products and services.

Greenhouse Gas (GHG): Six gases listed in the Kyoto Protocol responsible for global warming & climate change.

Greenhouse Gas Protocol: An internationally accepted set of standards for greenhouse gas accounting and reporting.

GRESB: GRESB is a mission driven and investor led organization providing standardized and validated Environmental, Social and Governance (ESG) data to the capital markets.

GHG Inventory: A quantified list of an entity's greenhouse gas emissions and sources.

IFRS: The IFRS Foundation was founded in the belief that better information supports better decisions. Their purpose is to empower people with the right information to support better economic and investment decision-making.

Key Performance Indicators (KPIs): Quantifiable metrics used to measure the performance of selected indicators.

Life Cycle Assessment (LCA): A compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle.

Net Zero Carbon: When the GHGs resulting from the development and operation of an asset or portfolio is no more than the avoided emissions.

Operational Carbon: Emissions associated with the energy and equipment used to operate the building.

Paris Agreement: A legally binding international treaty on climate change with a goal to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.

PCAF: An approach to assess and disclose GHG emissions associated with loans & investments, known as financed emissions.

Physical Climate Risks: Refers to the potential negative impacts of climate change due to event-driven (acute) extreme weather events or longer-term (chronic) shifts in precipitation and temperature and increased variability in weather patterns.

Renewable Energy Certificates (RECs): An authorized electronic or paper representation of the environmental attributes associated with the generation of one MWh of renewable energy.

SASB: SASB Standards enable organisations to provide industry-based disclosures about sustainability-related risks and opportunities that could reasonably be expected to affect the entity's cash flows, access to finance or cost of capital over the short, medium or long term.

SBTi: The Science Based Targets initiative (SBTi) provides a framework for the private sector to set emissions reduction targets that are aligned with the Paris Agreement.

Sustainable Development Goals (SDGs): The UN SDGs are made up of 17 goals and are outlined in the 2030 Agenda for Sustainable Development (released in 2015).

Scope 1 Emissions: Direct emissions from operations that are owned or controlled by the reporting entity.

Scope 2 Emissions: Indirect emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting entity.

Scope 3 Emissions: Indirect emissions (not included in Scope 2) that occur in the value chain of the reporting entity, including both upstream and downstream emissions.

Task Force on Climate-related Financial Disclosures (TCFD): The Financial Stability Board (FSB) created the TCFD to develop recommendations on the types of information that companies should disclose to support investors, lenders, and insurance underwriters in appropriately assessing and pricing a specific set of risks—risks related to climate change.

NOTE: The terms in this glossary have been sourced from various industry references.

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About REALPAC

Founded in 1970, REALPAC is the national leadership association dedicated to advancing the long-term vitality of Canada's real property sector. Our 130+ member companies include publicly traded real estate companies, real estate investment trusts (REITs), pension funds, private companies, fund managers, asset managers, developers, government real estate agencies, lenders, banks, life insurance companies, investment dealers, brokerages, consultants/data providers, large general contractors, and international members. Our members represent all asset classes in Canada – office, retail, industrial, apartment, hotel, senior living – from coast, to coast, to coast.

About This Report

This is REALPAC's second report of the Canadian Commercial Real Estate industry's sustainability performance. It recognizes progress, provides useful benchmarks, and identifies opportunities and challenges for the industry.

Every effort was made to include relevant, accurate, and current information from credible sources.

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Report Methodology

The following key sources were used in the development of this report.

2024 REALPAC Sustainability Member Survey

A survey of sustainability practices among REALPAC Sustainability Committee Members (March 2024).

2024 REALPAC Member Sustainability Indicator Scan

A scan of online publicly reported sustainability information and metrics among REALPAC members under REALPAC's membership of Operating Entities and Fund/ Asset Managers (February 2024).

2023 – 2024 REALPAC ESG Explainers

An overview of ESG topics for commercial real estate senior professionals highlighting core concepts, key definitions, and a performance spectrum to move the industry forward.

2023 GRESB Canadian Portfolio Analysis

Industry-leading benchmark of sustainability performance based on voluntary reported data from 80 Canadian GRESB reporting entities (October 2023).

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REALPAC

REALPAC
77 King St West
TD North Tower
Suite 4030 PO Box 147
Toronto ON M5K 1H1
Canada

realpac.ca

Darryl Neate
VP, Sustainability
dneate@realpac.ca

Ashley Hanneson
Sustainability Intern
ahanneson@realpac.ca