

Great-West Lifeco Inc. - Climate Change 2018

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Great-West Lifeco Inc. (hereinafter “Great-West Lifeco” or “the Corporation”) is an international financial services holding company with interests in life insurance, health insurance, retirement and investment services, asset management and reinsurance businesses.

When reporting for the Corporation, Great-West Lifeco covers its own activities as well as the activities of its subsidiaries. Great-West Lifeco subsidiaries include: operations in Canada, the United States, and Europe through Great-West Life, London Life, Canada Life, Irish Life, Great-West Financial and Putnam Investments. As of December 31, 2017, Great-West Lifeco and its companies had \$1.3 trillion in consolidated assets under administration and are members of the Power Financial Corporation group of companies.

Great-West Lifeco has long held responsible and ethical management as an intrinsic value, which we believe is essential to our long-term profitability and value creation for our stakeholders. As such, one of the Corporation’s values is “Committing ourselves to sustainability”.

As part of its management philosophy, the Corporation and its subsidiaries are committed to respecting the environment and taking a balanced and environmentally sustainable approach, which includes understanding and proactively addressing the potential impacts that climate change may have on our business.

The following document presents Great-West Lifeco’s approach to identifying and addressing the impacts of climate change for its operating subsidiaries.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Row 1	January 1 2017	December 31 2017	No	<Not Applicable>
Row 2	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 3	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 4	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

- Canada
- Ireland
- United Kingdom of Great Britain and Northern Ireland
- United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

- CAD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

- Financial control

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

- Yes

C1.1a

(C1.1a) Identify the position(s) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	Board-level oversight of climate-related issues is included in the Investment Committee of the Board of Directors responsibilities, through the oversight it provides on our global investment strategies. Specifically, the Investment Committee reviews the potential weather risks that could impact our reinsurance business, as well as cleaner energy sectors that could impact our investment growth strategies. Oversight on climate-related impacts by the Investment Committee of the Board is an important part of its responsibility, enabling us to proactively identify and mitigate potential risks, while ensuring we maximize the opportunities within our investment portfolio. Board-level oversight of climate-related issues is also assigned at the Board level to the Chief Executive Officer, Paul Mahon, who sits on the Executive Committee and Investment Committee of the Board of Directors. The CEO is informed of CSR issues, including climate change related matters and disclosures by the deputy CFO.

C1.1b

(C1.1b) Provide further details on the board’s oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Monitoring and overseeing progress against goals and targets for addressing climate-related issues Other, please specify (Climate-related corporate disclosures)	The Investment Committee of the Board will regularly monitor our investment performance against the investment plans, including with respect to cleaner energy investments (e.g., private debt placements) and climate-related events that could impact the reinsurance business. For example, in 2017, the Board discussed the impacts posed by hurricanes Harvey, Irma and Maria combined, despite the fact that they did not pose a significant impact given the inherent diversification of our business. On an annual basis, the Audit Committee of the Board of Directors, will review and approve corporate disclosures of environmental related information, including with respect to governance, risks, opportunities and performance.

C1.2

(C1.2) Below board-level, provide the highest-level management position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify (Deputy Chief Financial Officer)	Both assessing and managing climate-related risks and opportunities	Annually

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored.

The Deputy Chief Financial Officer for Great-West Lifeco, is the appointed Corporate Social Responsibility (CSR) lead. Through this role, the Deputy Chief Financial Officer has responsibility for overseeing efforts taken to identify and address the impacts of climate change, monitor the progress being made to minimize impacts to the business, and provide oversight on the development and execution of the strategy and related communication efforts.

The CSR Lead is supported by a CSR Committee with multi-functional representation from Great-West Lifeco’s operating companies, including those in North America and Europe. The CSR Committee meets regularly to share best practices, monitor trends and review CSR performance, including progress towards greenhouse gas (GHG) emissions reduction targets, CSR-related reporting activities, as well as the management of climate change-related risks and opportunities (e.g., potential climate change-related regulatory or transition risks). On an annual basis, the Deputy Chief Financial Officer reports to the CEO, who in turn reports to the Board. Having Board oversight through our CEO for climate related risks and opportunities is important in ensuring we are proactively identifying, assessing, managing and monitoring such risks and opportunities across our diverse businesses.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues.

Who is entitled to benefit from these incentives?

Other, please specify (Deputy Chief Financial Officer)

Types of incentives

Recognition (non-monetary)

Activity incentivized

Emissions reduction target

Comment

The Deputy Chief Financial Officer's annual objectives include oversight on the Corporation's corporate social responsibility initiatives, including activities being undertaken to achieve our carbon reduction target

Who is entitled to benefit from these incentives?

Chief Risk Officer (CRO)

Types of incentives

Monetary reward

Activity incentivized

Other, please specify (Climate change-related risk management)

Comment

The Great-West Lifeco Chief Risk Officer is compensated based on the effectiveness of the risk management oversight function, which includes (but is not limited to): identifying and managing emerging risks (e.g., climate change-related risk) and identifying optimal property catastrophe cover retrocession reinsurance opportunities within defined criteria and considering exposure to property risks, including physical climate parameters.

Who is entitled to benefit from these incentives?

Other, please specify (CSR Committee)

Types of incentives

Recognition (non-monetary)

Activity incentivized

Emissions reduction target

Comment

The CSR committee members' annual objectives include executing on the Corporation's corporate social responsibility initiatives, including activities being undertaken to achieve our carbon reduction target.

Who is entitled to benefit from these incentives?

Other, please specify (VP, Corporate Properties)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

The Vice President, Corporate Properties variable compensation bonus structure includes executing on initiatives to achieve our carbon reduction target.

Who is entitled to benefit from these incentives?

Corporate executive team

Types of incentives

Monetary reward

Activity incentivized

Other, please specify (Climate change-related risk)

Comment

The Great-West Lifeco leadership property catastrophe team is compensated for identifying optimal property catastrophe cover retrocession reinsurance opportunities within defined criteria and considering exposure to property risks, including physical climate parameters.

Who is entitled to benefit from these incentives?

Facilities manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

The corporate property managers at GWL Realty Advisors Inc. that manage Great-West Lifeco's corporate head office and investment properties are rewarded through the company's annual bonus structure for progress on achieving BOMA BEST® certifications, which aligns with our energy and carbon reduction objectives and includes sustainable procurement considerations. Various property managers of Great-West Lifeco are also incentivized through their annual bonus structures for progress being made towards energy reduction targets at buildings and contributions to emissions inventories and reporting.

Who is entitled to benefit from these incentives?

Facilities manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

The corporate property managers at GWL Realty Advisors Inc. that manage Great-West Lifeco's corporate head office and investment properties are rewarded through the company's annual bonus structure for progress on achieving BOMA BEST® certifications, which aligns with our energy and carbon reduction objectives and includes sustainable procurement considerations. Various property managers of Great-West Lifeco are also incentivized through their annual bonus structures for progress being made towards energy reduction targets at buildings and contributions to emissions inventories and reporting.

Who is entitled to benefit from these incentives?

Facilities manager

Types of incentives

Monetary reward

Activity incentivized

Energy reduction project

Comment

The corporate property managers at GWL Realty Advisors Inc. that manage Great-West Lifeco's corporate head office and investment properties are rewarded through the company's annual bonus structure for progress on achieving BOMA BEST® certifications, which aligns with our energy and carbon reduction objectives and includes sustainable procurement considerations. Various property managers of Great-West Lifeco are also incentivized through their annual bonus structures for progress being made towards energy reduction targets at buildings and contributions to emissions inventories and reporting.

Who is entitled to benefit from these incentives?

Facilities manager

Types of incentives

Monetary reward

Activity incentivized

Energy reduction target

Comment

The corporate property managers at GWL Realty Advisors Inc. that manage Great-West Lifeco's corporate head office and investment properties are rewarded through the company's annual bonus structure for progress on achieving BOMA BEST® certifications, which aligns with our energy and carbon reduction objectives and includes sustainable procurement considerations. Various property managers of Great-West Lifeco are also incentivized through their annual bonus structures for progress being made towards energy reduction targets at buildings and contributions to emissions inventories and reporting.

Who is entitled to benefit from these incentives?

Facilities manager

Types of incentives

Monetary reward

Activity incentivized

Efficiency project

Comment

The corporate property managers at GWL Realty Advisors Inc. that manage Great-West Lifeco's corporate head office and investment properties are rewarded through the company's annual bonus structure for progress on achieving BOMA BEST® certifications, which aligns with our energy and carbon reduction objectives and includes sustainable procurement considerations. Various property managers of Great-West Lifeco are also incentivized through their annual bonus structures for progress being made towards energy reduction targets at buildings and contributions to emissions inventories and reporting.

Who is entitled to benefit from these incentives?

Facilities manager

Types of incentives

Monetary reward

Activity incentivized

Efficiency target

Comment

The corporate property managers at GWL Realty Advisors Inc. that manage Great-West Lifeco's corporate head office and investment properties are rewarded through the company's annual bonus structure for progress on achieving BOMA BEST® certifications, which aligns with our energy and carbon reduction objectives and includes sustainable procurement considerations. Various property managers of Great-West Lifeco are also incentivized through their annual bonus structures for progress being made towards energy reduction targets at buildings and contributions to emissions inventories and reporting.

Who is entitled to benefit from these incentives?

Facilities manager

Types of incentives

Monetary reward

Activity incentivized

Behavior change related indicator

Comment

The corporate property managers at GWL Realty Advisors Inc. that manage Great-West Lifeco's corporate head office and investment properties are rewarded through the company's annual bonus structure for progress on achieving BOMA BEST® certifications, which aligns with our energy and carbon reduction objectives and includes sustainable procurement considerations. Various property managers of Great-West Lifeco are also incentivized through their annual bonus structures for progress being made towards energy reduction targets at buildings and contributions to emissions inventories and reporting.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	1	2	The definition of short -term will vary depending on the process, initiative or objective. With respect to the classification of current and emerging risks, we generally consider the short term to be 1 – 2 years. Our strategy development function does not formally define time horizons however they generally consider short-term to be 1-2 years.
Medium-term	2	5	The definition of medium-term will vary depending on the process, initiative or objective. Our strategy development function does not formally define time horizons however they generally consider medium-term to be 2-5 years.
Long-term	5	25	The definition of long-term will vary depending on the process, initiative or objective. Our strategy development function does not formally define time horizons however they generally consider the long-term to be beyond 5 years.

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	We conduct quarterly assessment of both current and emerging risks and opportunities, including those related to climate-related issues.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

In order to inform our risk assessment process, self-assessment teams have been established to identify the risks and opportunities relating to various aspects of our business operations, products and services across a broad geographic scope.

The scope of climate-related issues considered through the process includes: the impacts of environmental regulations and cleaner market financing on investments, changing weather patterns on our reinsurance and property management businesses, changes in energy prices and green building standards on our building operations, integration of ESG performance and considerations into our decision-making processes for equity investments and products, and changing stakeholder expectations on our reporting. At a company level, we consider a broad range of climate change risks and opportunities.

The assessment at a company level includes our exposure to reputational impacts, extreme weather events on our reinsurance business, as well as investment opportunities into new cleaner technology / renewable energy market. The assessment is conducted with the oversight of our corporate executive team, through our Chief Risk Officer. At an asset level, climate-related risk assessments are conducted by our self-assessment teams to identify the risks and opportunities related to our corporate properties, subsidiaries, investment products, and building property investments. The self-assessment teams represent different aspects of our business operations, products and services. In conducting the assessment at an asset level, we consider a broad range of climate impacts, including carbon emissions, water and energy consumption, business continuity and green building standards in our corporate and investment properties, regulatory impacts and weather extremes on investments, and stakeholder requests on carbon management.

We prioritize our climate change risks and opportunities on a regular basis based on the magnitude of the impact and the likelihood of occurrence on our operations and business products and services. Where relevant, we also consider the velocity of the risk to understand how quickly the climate risk could impact business operations.

The results of the risks and opportunities assessments are communicated to the corporate risk management office for review and consideration. Where material issues are identified, control policies and management programs are established to ensure the risks and opportunities are being addressed through consistent guidelines and standards.

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Through our climate-related risk assessments, we take into consideration current GHG regulations, carbon pricing, and building energy requirements. Through the assessment of our corporate and investment properties, we are not substantively impacted by climate regulations and pricing given our limited GHG emissions footprint and procurement spend on utilities. We conducted a sensitivity analysis of carbon pricing on our owner-occupied and investment properties throughout Canada. While the risk is marginal, the analysis allows us to adequately plan for minor rate escalations in the future. Furthermore, our subsidiary, GWLRA, quantifies the GHG emissions of our global owner-occupied offices, as well as our corporate and regional offices and third-party investment management properties across Canada. In 2017, these properties were not subject to GHG reporting regulatory thresholds, carbon markets or pricing requirements. The impact of climate-related regulations are also considered in the context of our investments. While we have some risk exposure, the impacts in our investments are inherently limited given the diversification of our business, which enables us to limit our exposure to sectors and regions subject to climate-related regulations. We maintain a high quality, diversified investment portfolio with sufficient liquidity to meet the demands of policy holder and financing obligations under normal and stressed conditions. For example, in the Bonds investments portfolio for 2017, no individual sector accounted for more than 10% of our invested assets. This diversification of assets better positions us to face fluctuations from regulatory carbon related risk exposure. Furthermore, the total percentage of assets invested in sectors that could be highly exposed to carbon taxes and / or cap and trade schemes, such as the energy sector, transportation and utilities, amounted to approximately 20% of invested bond assets in 2017. From a consolidated basis and considering the diversification of our portfolio, any such climate-related risks are not considered substantive to our business.

	Relevance & inclusion	Please explain
Emerging regulation	Relevant, always included	Through our climate-related risk assessments, we assess relevant emerging regulatory requirements, including carbon market and pricing expectations. For example, in 2017, we reviewed the climate change regulatory landscape that is emerging through the Pan-Canadian Framework on Clean Growth and Climate Change. As part of the Framework, the Canadian Federal government has proposed to impose an explicit price-based carbon pricing system on Canadian provinces that do not meet the carbon pricing benchmark by the end of 2018. We reviewed the possible impacts related to the acquisition and ongoing management of our corporate and investment properties, loans secured by real property and investments in equity and fixed income securities. For example, through the assessment of our corporate and investment properties, we determined we are not substantively impacted by these emerging climate pricing regulations given the limited GHG emissions from our operations. While, carbon pricing is expected to impact the procurement of utilities at our office locations as well as the general costs of goods and services, we anticipate the costs on our business to be marginal. Additionally, we have conducted an in-depth sensitivity analysis and assessment of the impact of provincial carbon pricing on our owner-occupied and investment properties throughout Canada. While this risk has been considered marginal, this will allow the Company to adequately plan for any minor rate escalations due to emerging regulations. From an investment standpoint, our exposure to sectors and regions impacted by carbon pricing is further minimized through the diversification of our business and assets. For example, in 2017, no individual sector accounted for than 10% of our invested assets, and total percentage of assets invested in sectors that could be highly exposed to carbon pricing mechanisms. For example, together, the energy, transportation and utilities sectors, amounted to approximately 20% of invested bond assets in 2017. Additionally, the level of exposure to environmental risk varies significantly. The U.S., for example, emphasizes investments in regulated Transmission and Distribution-only regulated utilities due to the reduced risk of stranded generating assets. Furthermore, the U.S. has increased its exposure to renewable power generators in order to enhance asset-exposure diversification.
Technology	Relevant, always included	Through our climate risk assessments, we assess the impacts of technology developments, including costs associated with transitioning to lower emission and smarter technologies, potential reduced demands for services, capital investments into technology developments, and costs to deploy new practices and processes. For example, over the past year, within our property management services carried out by our subsidiary GWL Realty Advisors, we have been assessing costs and capital investments to transition towards smarter more efficient buildings that optimize energy efficiency and take advantage of big data and technological innovations. While important, these costs are not expected to generate a substantive change to our business operations, revenue or expenditures given the expenditures and revenues associated with GWL Realty Advisors. For example, in 2017, the fee income from GWL Realty Advisor's real estate management services represented less than 0.5% of our overall net income, and is not considered substantive to Great-West Lifeco as a business risk/opportunity. Furthermore, from an investment standpoint, we also look at the ability of investments in high energy intensive sectors to transition to lower emissions and smarter technologies. For example, 95% of utility investments in the U.S. have mandated green energy requirements, which we consider when making investments in the energy and utilities sectors. In certain circumstances, we will not invest in a utility where they are not technologically advanced to meet high renewable energy standards. And, in certain instances, we will not participate in fossil fuel-based, long-term corporate debt placements (e.g., long-term debt for coal-powered energy generation) due to the regulatory and technological risks from a stranded asset perspective .
Legal	Relevant, sometimes included	Through our climate risk assessments, we assess the impacts of exposure to litigation as a result of climate change on our business operations and investment portfolio. For example, in 2017, a number of litigation lawsuits against oil and gas and energy companies have been brought to the courts on climate change impacts. While important, the impacts of possible litigation in our investments are limited given the diversification of our asset allocation, geographies and sectors. Specifically, in 2017, no individual sector accounted for more than 10% of our invested assets, and the percentage of assets in the energy sector that could be highly exposed to litigation lawsuits amounted to less than 5% of invested assets in bonds or equities.
Market	Relevant, always included	Through our climate risk assessments, we assess the impacts of exposure to litigation as a result of climate change on our business operations and investment portfolio. For example, in 2017, a number of litigation lawsuits against oil and gas and energy companies have been brought to the courts on climate change impacts. While important, the impacts of possible litigation in our investments are limited given the diversification of our asset allocation, geographies and sectors. Specifically, in 2017, no individual sector accounted for more than 10% of our invested assets, and the percentage of assets in the energy sector that could be highly exposed to litigation lawsuits amounted to less than 5% of invested assets in bonds or equities.
Reputation	Relevant, always included	Through our climate-related risk assessments, we consider the reputation of Great-West Lifeco on climate-related impacts from our stakeholders, including customers, governments, investors, NGOs, among others. We recognize that with increasing public and investor concerns over climate change, a lack of disclosure on how we identify and manage climate change risks could expose us to potential reputational risk. For example, over the past few years, there has been an increase in investor interest on environmental, social and governance factors, which includes responding to and mitigating climate risks. As a result, we have been strengthening the transparency and credibility of the information we publish publicly on climate-related issues, including with respect to governance, risks, opportunities and performance. However, when considered generally in the context of our overall business and other types of reputational risks we do not consider climate-related reputational risks to have a substantive impact on our business, revenues or expenditures.
Acute physical	Relevant, always included	Through our climate-related risk assessments, we consider exposure to increased severity of extreme weather events, such as cyclones, hurricanes and floods in our reinsurance business. Our assessments are based on worst-case scenarios (peak peril modeling) and indicate these events would not result in a substantive impact to our business. For example, in 2017, Great-West Lifeco established reserves of \$175 million for claims relating to losses from hurricanes Harvey, Irma and Maria combined. While important, the financial losses did not have a substantive impact on our business and are not considered a substantive inherent risk to Great-West Lifeco's overall earnings potential. Furthermore, it is important to note that reinsurance is designed to attach for very significant claim events for the underlying cedants, and there are contractual limits which cap exposure on the portfolio. We license the latest modeling from an industry leading provider to help us calculate loss probabilities for our portfolios by geographic region. Furthermore, reinsurance contracts are renegotiated annually, which allows for an opportunity to revisit risk exposures and limits on an ongoing basis. Therefore, any impacts from acute weather-related events would not have a substantive impact on our business operations, revenue or expenditures over the long-term. We also have a maximum claim amount for all such contracts, limiting our risk exposure .

	Relevance & inclusion	Please explain
Chronic physical	Relevant, always included	Through our climate related risk assessments, we consider exposure to changes in chronic physical impacts, including changes in precipitation patterns, extreme variability in weather patterns, rising mean temperatures, and rising sea levels. For example, in terms of our life and health insurance businesses, we have not identified substantive risks from changes in physical climate parameters and health impacts on both morbidity and mortality rates. We diversify our morbidity and mortality risks limiting concentrations in any one specific region or geography. Furthermore, research and analysis is done regularly to provide the basis for establishing pricing and valuation assumptions that properly reflect the insurance market, including potential climate-related health impacts. At Great-West Lifeco, over the past few years, we have not experienced notable changes in insurance claims as result of climate-related health impacts. We also monitor ongoing research as it relates to the potential impacts of climate change on the life/health insurance sector. For example, we review research from leading industry associations such as the International Actuarial Association (IAA), which recently released a discussion paper entitled 'Climate Change and Mortality' (Nov. 2017). The paper noted that "modeling the possible impacts of climate change on different future climate scenarios on future levels of mortality present formidable challenges. Due to the uncertain extent of the effects on climate change and the attribution under future conditions, including the extent and success of future mitigation and adaption efforts. It is something that demands further research and consideration".
Upstream	Relevant, sometimes included	Through our climate related risk assessments, we consider exposure to upstream impacts, including the sourcing of products and services from third parties in our supply chain. For example, through our subsidiary GWL Realty Advisors, we consider the risks associated with sourcing sustainable materials and the impact of climate-related events on our supplier base. We are committed to reducing the environmental impacts that could occur from the services and products procured from third party contractors and suppliers. Specifically, we assess the potential costs associated with sourcing cleaner, renewable energy sources and sustainable materials to ensure the efficiency and climate resilience of our assets under management. While important, these expenditures are not considered substantive to our overall business, given that fee income and related expenses represent less than 0.5% of our overall net income.
Downstream	Relevant, always included	Through our climate-related risk assessments, we consider the downstream impacts and risks related to the use of our products and services. For example, we have assessed the risks of not using low carbon products in our business offering (such as electronic applications and eClaim services), as well as providing our clients' with responsible investment options that include environmental and climate-related screening criteria. Already, Great-West Lifeco's subsidiary GLC Asset Management and Putnam Investments are signatories to the UNPRI, demonstrating a strong commitment to the development of a more sustainable global financial system. A number of their investment products undergo environmental, social and governance assessments, which include reviews of significant ESG risks (such as climate change, among others) and require that identified risks be addressed in the investment theses for invested equities. While these initiatives contribute to supporting even greater growth within our business, the risk of not having these products and services is not considered substantive given our diversified businesses and extensive distribution reach. Specifically, in 2017, the fee income from responsible investment options represented less than 0.1% of our overall net income.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

The effective management of risk is integral to the success of our business. We have a prudent and measured approach to risk management built on a strong risk culture and guided by our integrated Enterprise Risk Management (ERM) Framework. Our ERM Framework facilitates the alignment of business strategy with risk appetite, informs and improves the deployment of capital, and supports the identification, mitigation and management of exposure to possible operational surprises, losses and risks, which can include climate-related issues, where relevant.

Our reinsurance business provides a good example of how we manage physical climate-related risks. On an annual basis we conduct scenario modelling on climate-related events and the impact on our reinsurance business. Using robust weather models, we model peak perils at the worst locations to assess the likelihood, severity and velocity of extreme weather events, including windstorms, hurricanes and cyclones. The information from these scenario models enables us to assess how much of a loss we will take, which in turn informs our pricing models. Based on this modelling of two worst-case scenarios, we determined it would not result in a substantive impact on our business. For example, in 2017, Great-West Lifeco established reserves of \$175 million for claims relating to losses from hurricanes Harvey, Irma and Maria combined in the third quarter of the year, which did not result in a substantive impact to the business. Furthermore, we manage these inherently lower risks by setting contractual limits and cap exposure on the portfolio, and by ensuring we renegotiate our reinsurance contracts annually so that we can revisit our risk exposures and limits on an ongoing basis.

Our investment business provides a good example of how we manage transition risks relating to the exposure to sectors that may be impacted by climate-related policies, regulations, and technological risk. The impact of climate-related risks to our investments is limited given the diversification of our business. Diversification is an inherent part of our business strategy, which enables us to limit our exposure to sectors and regions that may be subject to climate-related regulations. For example, in 2017, no individual sector accounted for more than 10% of our invested assets. We further limit our relatively low inherent risks by establishing investment thresholds within specific sectors, asset types/allocations, and geographies, and conducting extensive due diligence to ensure climate-related risks are managed. For instance, in the U.S., when investing in the energy and utility sector, an important consideration in our assessments is the investee's ability to meet state level policy requirements on renewable or less carbon-intensive energy and to manage potential climate-related physical risks. As another example, with regard to commercial mortgage finance, we undertake environmental compliance due diligence for all new investments, ensure that adequate all-perils insurance is in place (which includes risks associated with extreme events), and give consideration to green building certifications (e.g. Leadership in Energy and Environmental Design, which incorporates aspects of climate resiliency among other environmental sustainability issues).

Our corporate strategy teams at the various business levels, representing operations, insurance and investments, conduct ongoing scans of existing and emerging trends that could have the potential to positively or negatively impact revenues and growth markets in products and services. The information is then used to inform an assessment of opportunities from a financial and technical perspective, which in turn influence our corporate strategic planning process for the following year.

As an example of a climate-related transition opportunity, we continue to assess growth markets in our investment strategy. Through environmental scans at the business level, we have identified the renewable energy sector to be a potential growth market driven by increasing incentives and financing from governments. Specifically, in Canada, our GWL Bond Investment Group continues to support provincial green bond programs in Canada by participating in purchases of Ontario and Quebec green bonds. For example, in 2017, GWL's Private Debt Investments group in Canada invested over \$880 million in renewable energy projects, which included wind, solar, and hydro energy projects, investments in publically-issued green bonds, as well as investments in transit-oriented and LEED certified P3 projects.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

No

C2.3b

(C2.3b) Why do you not consider your organization to be exposed to climate-related risks with the potential to have a substantive financial or strategic impact on your business?

	Primary reason	Please explain
Row 1	Risks exist, but none with potential to have a substantive financial or strategic impact on business	We assess climate related-risks taking into consideration both physical and transition risk. With respect to physical risks we conduct scenario modelling on climate-related impacts on our reinsurance business. Using weather models, we model peak perils at the worst locations to assess the likelihood, severity and velocity of extreme weather, including windstorms, hurricanes and cyclones, which in turn informs our pricing models. Based on this modelling of two worst-case scenarios, we determined it would not result in a substantive impact on our business. In 2017, Great-West Lifeco established reserves of \$175 million for claims relating to losses from hurricanes Harvey, Irma and Maria combined which did not result in a substantive impact. In terms of life and health insurance, we have not experienced notable changes in insurance claims resulting from climate-related health impacts. We inherently diversify our morbidity and mortality risks, with the intent of limiting concentrations in any one specific region or geography... Further, research and analysis is done to provide the basis for establishing pricing assumptions that properly reflect the insurance market, including climate-related impacts. . Regarding transition risks, we review regulatory risks, including GHG regulations, carbon pricing,, and building requirements. Our managed corporate and investment properties are not subject to GHG regulations, and we limit investments in exposed sectors through our inherent diversification strategy. For example, in 2017, assets invested in sectors exposed to climate-related regulations, such as the energy and utilities, represented 12.3% of invested assets. While important, these risks are not substantive to our business given our inherently diversified business. We assess fluctuating socio-economic conditions from society's exposure to weather-related losses We modelled potential lapse rates from severe weather and determined such events had a limited impact on insurance affordability and customer retention rates. we recognize that public and investor concerns on climate change disclosure could expose us to potential reputational risks. However, these risks when considered in the context of our overall business and other types of reputational risks would not be substantive on our business.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

No

C2.4b

(C2.4b) Why do you not consider your organization to have climate-related opportunities?

	Primary reason	Please explain
Row 1	Opportunities exist, but none with potential to have a substantive financial or strategic impact on business	We assessed climate-related opportunities focusing on resource efficiency, cleaner energy , and products and services. With respect to clean energy, we determined that green government incentives would have a limited impact, given our utility spend represents less than 1% of overall expenditures. We are also taking advantage of investments in the renewable energy market, having invested over \$880 million in wind, solar, and hydro energy project investments, publicly issued green bonds and transit-oriented and LEED certified P3 projects, through GWL's Private Debt Investment Group. While important, these investments are not substantive given that less than 1% of our asset value is tied to investments in renewable energy markets. With respect to products and services, we have strengthened the carbon efficiency of our property management services carried out by our subsidiary GWL Realty Advisors. Since 2013, GWLRA achieved approximately 30,003 tonnes of CO2e emission reductions for the managed portfolio.. Furthermore, GWLRA has established an internal Sustainability Benchmarking and Conservation Program (SBCP) – with five-year (2013-2018) targets for GHG emissions, energy, water, and waste. When considered in the context of our overall business, this product / service positioning is not substantive to our business, given that the fee income of our real estate management services represents less than 0.5% of our overall income (as of 2017). We also use low carbon products, such as electronic and eClaim services, and provide responsible investment options with climate-related criteria. Currently, our subsidiary GLC asset management and Putnam are signatories to the UNPRI. While these products and services contribute to supporting even greater growth within our business, the benefits are not considered substantive given our diversified businesses and extensive distribution reach. For example, in 2017, the income from responsible investment options represented less than 0.1% of our overall net income. With respect to resource efficiency, we support energy efficiency upgrades in the ongoing management of our corporate and investment properties. With our owner occupied properties representing less than 1% of our overall expenditures, the energy efficiency opportunities are limited.

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	We have not identified any risks or opportunities	We have started using low carbon products in our business offering (such as electronic applications and eClaim services), as well as providing our clients' with responsible investment options that include environmental and climate-related screening criteria. Already, Great-West Lifeco's subsidiary GLC Asset Management and Putnam Investments are signatories to the UNPRI, demonstrating a strong commitment to the development of a more sustainable global financial system. While these initiatives contribute to supporting even greater growth within our business, we have not identified risks and opportunities of not having these products and services to be substantive given our diversified businesses and extensive distribution reach. Specifically, in 2017, the income from responsible investment options represented less than 0.1% of our overall net income.
Supply chain and/or value chain	We have not identified any risks or opportunities	We have not identified any inherent risks in our value chain that have impacted our business, including fluctuating socio-economic conditions from society's exposure to weather-related losses, changing stakeholder requests for greater disclosure and the impact on our reputation and the exposure of climate-related regulations on the companies with whom we invest. With respect to fluctuating socio-economic conditions from society's exposure to weather-related losses, we concluded that lapse rates from extreme weather events, such as Hurricane Katrina, were not severe and had limited impact on insurance affordability and customer retention rates. With respect to reputational risks, we recognize that increasing public and investor concerns over climate change and a lack of disclosure could expose us to potential reputational risks. However, these risks when considered in the context of our overall business and other types of reputational risks would not be substantive on our business, revenues and expenditures. With respect to our investments in companies that could be exposed to climate-related risks and opportunities, we have a highly diversified investment strategy that limits our exposure to any one sector or region. For example, in 2017, the percentage of assets invested in sectors highly exposed to climate-related regulatory pressures, such as the energy and utility sectors, amounted to 12.3% of our invested assets. While important, these risks are not substantive and do not impact our business given our diversified investment business and extensive distribution reach.
Adaptation and mitigation activities	We have not identified any risks or opportunities	Within our property management services carried out by our subsidiary GWL Realty Advisors, we have been assessing costs and capital investments to transition towards smarter more efficient buildings that optimize energy efficiency and take advantage of big data and technological innovations. While important, we have not identified risks and opportunities given that these costs are not expected to generate a substantive change to our business operations, fee income, and expenditures given the overall expenditures and revenues associated with GWL Realty advisors. Specifically, in 2017, the fee income from our real estate management services represented less than 0.5% of our overall net income, and therefore not considered a substantive opportunity to our business.
Investment in R&D	We have not identified any risks or opportunities	We have not identified any climate-related risks or opportunities that have impacted our investments in research and development. Within our property management services carried out by our subsidiary GWLRA, many capital investments are made in energy efficiency projects. Furthermore, we also conduct regular research and analysis to provide for the basis for establishing pricing and valuation assumptions that properly reflect the insurance market. Research on climate related health impacts is limited for our business, as we have not experience notable changes in insurance claims as a result of climate-related health impacts.
Operations	We have not identified any risks or opportunities	We continue to optimize operations to improve the efficiency of our property management services. For example, since 2013, GWLRA achieved approximately 30,003 tonnes of CO2e of emissions reductions for the managed portfolio, which includes both GWL-owned assets and those owned by third-party clients (e.g., pension funds). Furthermore, GWLRA participates in various climate-related engagement initiatives, including GWLRA's internal Sustainability Benchmarking and Conservation Program (SBCP) – a national initiative that has established five-year (2013-2018) targets for GHG emissions energy, water, and waste. When considered in the context of our overall business, however, these opportunities are not substantive and have not impacted our operations. For example, in 2017, the fee income from our real estate management services represented less than 0.5% of our overall net income, and therefore the opportunity would not be substantive to our business and impact our operations.
Other, please specify	Not evaluated	N/A

C2.6

(C2.6) Describe where and how the identified risks and opportunities have factored into your financial planning process.

	Relevance	Description
Revenues	We have not identified any risks or opportunities	While climate related events do not pose any inherent risks or opportunity from a revenue standpoint that could be substantive to our business, we do consider potential revenue losses in our financial planning process in the context of our reinsurance business. Using robust weather models, we model peak perils at the worst locations to assess the likelihood, severity and velocity of extreme weather events, including windstorms, hurricanes and cyclones. The information enables us to assess how much of a loss we will take, which in turn informs our pricing models. Based on this modelling of two worst-case scenarios, we determined it would not result in a substantive impact on our business. For example, in 2017, Great-West Lifeco established reserves of \$175 million for claims relating to losses from hurricanes Harvey, Irma and Maria combined in the third quarter of the year, which did not result in a substantive impact to the business. Notably, these extreme weather events resulted in no significant losses in our other lines of business, including our other US operations, products, and services. Furthermore, we place contractual limits, which cap exposure on the portfolio. We also renegotiate our reinsurance contracts annually, which enables us to revisit risk exposures and limits on an ongoing basis. For more information, please refer to the risks and opportunities section of this questionnaire.
Operating costs	We have not identified any risks or opportunities	While climate related events do not pose any inherent risk or opportunity on our operating costs that could be substantive to our business, we do factor energy costs as part of our financial planning process. For example, we have increased investments into more energy efficiency programs in our corporate and investment properties, including building equipment retrofits, data centre optimization and green buildings, which align well with our Scope 1+2 GHG targets for Canadian properties to achieve a 27.3% GHG reduction by 2025 and a 50.4% reduction by 2036, based on a 2013 baseline year. As of 2017, 89% of GWLRA's eligible portfolio by floor area had green certifications (BOMA BEST® and/or LEED®). While these are important efficiency improvements, our energy spend is less than 1% of our overall expenditures, and therefore these are not noticeable increases in our operating costs. For more information, please see the risks and opportunities section of this questionnaire for more information.
Capital expenditures / capital allocation	We have not identified any risks or opportunities	We have not identified any inherent climate related risks and opportunities that could be substantive to our business, and therefore have not had to factor them into capital expenditures as part of our financial planning process. We have resilience built into our owned corporate properties, many of which are located in areas that have relatively lower exposure to climate-related extreme weather patterns. For more information, please see the risks and opportunities section of this questionnaire for more information.
Acquisitions and divestments	We have not identified any risks or opportunities	We have not identified any inherent climate-related risks or opportunities that could be substantive to our business, and therefore have not had to factor them into acquisitions and divestments as part of our financial planning process. Please see the risks and opportunities section of this questionnaire for more information.
Access to capital	We have not identified any risks or opportunities	We have not identified any inherent climate-related risks or opportunities that could be substantive to our business, and therefore have not had to factor them into access to capital considerations as part of our financial planning process. Please see the risks and opportunities section of this questionnaire for more information. It is important to note that Great-West Lifeco engages with various organizations on climate-related requests, and has been ranked highly for carbon management by independent third-parties. Specifically, Great-West Lifeco has attained leadership status on its CDP submissions for the past two years, scored in the top quartile among our global industry peers on MSCI's "Climate Change Vulnerability Performance" ranking on its ESG Scorecard assessment, and our real estate subsidiary GWL Realty Advisors, which manages our corporate head offices and investment assets in Canada, has consecutively attained the highest, 'Green Star', ranking on the Global Real Estate Sustainability Benchmark (GRESB), for the past three years. We believe this performance has enhanced our positioning from a reputational standpoint and possibly indirectly strengthened investor confidence.
Assets	We have not identified any risks or opportunities	While climate related events do not pose any inherent risk or opportunity on our assets that could be substantive to our business, we may sometimes factor climate opportunities into our investment of assets under management as part of our financial planning process. For example, in 2017, GWL's Private Debt Investments group in Canada invested over \$880 million in renewable energy projects, which included wind, solar, and hydro energy projects, investments in publically-issued green bonds from the Ontario and Quebec provincial governments, as well as investments in transit-oriented and LEED certified P3 projects. However, with less than 1% of our overall asset value tied to investments in the renewable energy markets and green bonds, the growth opportunities are currently not considered substantive to the financial or strategy impact on the business. Please see the risks and opportunities section of this questionnaire for more information.
Liabilities	We have not identified any risks or opportunities	We have not identified any inherent climate-related risks or opportunities that could be substantive to our business, and therefore have not had to factor in potential climate-related liabilities into our financial planning process. Please see the risks and opportunities section of this questionnaire for more information.
Other	Not evaluated	N/A

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, qualitative and quantitative

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

Our business objectives and strategy is informed by a broad range of information, including climate change issues relevant to the effective functioning of our business and provision of our products and services. Climate related issues that have influenced our business objectives and strategy cover both internal and external factors. Internal factors include energy performance in our corporate buildings and investment real estate properties to inform energy efficiency cost savings strategies, and extreme weather events at our properties to inform business continuity and climate adaptation strategies. External factors include customer demands that are influencing our responsible investment growth strategies, extreme weather events in our reinsurance and insurance business that influence pricing, underwriting and new product strategies, government incentives in cleaner renewable energy and green infrastructure influencing the growth of our green bond investment portfolios, and stakeholder requests that are our driving carbon reporting strategies. Where relevant, the CSR Lead communicates climate-related information to the executive team for consideration into business strategy decisions.

Specifically, over the past few years, the increase in incentives and financing from governments has influenced our growth strategy into cleaner energy investments that support the transition to a low carbon economy in North America. As a result, we are now investing more to support the transition to a low carbon economy. For example, last year Ontario, Canada, launched its second green bond in the form of a \$759 million 2023 seven-year new issue to finance transit and other low-impact infrastructure projects across the province. Our GWL Bond Investments Group supported this Green Bond program, making purchases of the new issue. The Bond Investments team also made purchases in Quebec's inaugural \$500 million 2017 Green Bond issue, which will be used to finance environmentally friendly projects in accordance with Quebec's Green Bond Framework .

Our business strategy is linked to our emission reduction targets. Specifically, as part of our business strategy we are increasing investments in more energy efficiency initiatives in our corporate and investment properties. For example, we increased investments in building equipment retrofits, data centre optimization and green building certifications ((BOMA BEST® and/or LEED®), which align well with our Scope 1+2 GHG targets for Canadian properties to achieve a 27.3% GHG reduction by 2025 and a 50.4% reduction by 2036, based on a 2013 baseline year. And enables us to meet our green building certification.

An example of a relatively substantial business decision made during 2017 that was influenced by climate change was to continue to grow our property and casualty reinsurance business. We are growing our casualty and property reinsurance business due to increasing demand driven by economic and risk modelling factors. Our short-term strategy covering the current time and the next three years has been influenced by a number of aspects influencing the demand for property catastrophe retrocession opportunities. For example, economic growth driving the number of houses in areas prone to single events (e.g. hurricanes), changes in industry modeled location, occurrence and severity of windstorms, and availability of capital to support these risks have influenced the growth of our property and casualty re-insurance business. Another relatively substantial business decision influenced by climate change, was our investment decisions to support the transition to a low carbon economy. The aspect of climate change that influenced the decision to invest in the low carbon economy was the increase in incentives and financing from governments. For example, last year Ontario, Canada launched its second green bond in the form of a \$759 million 2023 seven-year new issue to finance transit and other low-impact infrastructure projects across the province. Our GWL Bond Investments Group supported this Green Bond program, making purchases of the new issue. The Bond Investments team also participated in Quebec's inaugural \$500 million 2017 Green Bond issue by making a purchase of the new issue, which will be used to finance environmentally friendly projects in accordance with Quebec's Green Bond Framework.

C3.1d

(C3.1d) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios	Details
Other, please specify (Modelling of P&C reinsurance portfolio)	<p>Climate Scenario Analysis Overview and Context: On an annual basis we conduct scenario modelling on climate-related events and the impact on our P&C reinsurance business. Using robust weather models provided by a third party, we model peak perils to assess the likelihood, severity and frequency of extreme weather events, including windstorms, hurricanes and cyclones. The information enables us to assess how much of a loss we would take, which in turn informs our pricing models. A description of the model is presented below. Description and Relevance of the time horizon: The third party model has the capabilities to provide long-term climate event horizons based on specific modeling solutions. For Great-West Lifeco, typically a one year time horizon is considered relevant for our property & catastrophe contracts. This is due to the fact that we manage these inherently lower risks of our reinsurance business by setting contractual limits and cap exposure on the portfolio. We renegotiate our reinsurance contracts annually so that we can revisit our risk exposures and limits on an ongoing basis. Details of the Methodology Used: Inputs: The third party model is derived from best-in-class models built in partnership with the world's leading carriers. The inputs to the models include the frequency and severity of extreme weather events of clients' underlying exposure to climate-related events, including windstorms, hurricanes and cyclones. Assumptions: The assumptions applied are based on various data sources, to determine the risk location, exposure, and hazards. The assumptions are based on the Poisson distribution frequency that expresses the reasonable assumption of the probability of a given number of extreme weather events occurring within a fixed period of time, within a specific area. Analytical Methods: The Great-West Lifeco applies the Monte Carlo simulation methodology to clients exposure files. Changes from the reference scenario considered: Based on our reinsurance business needs, the reference scenario applies over the period of the year in question, which was last done for the period 2017. The Area of the Organization considered for the Scenario Analysis: The scenario analysis is considered for our Property and Catastrophe portfolio, which is used by the Great-West Lifeco Reinsurance Division. Company Specific Description of the Results of conducting Scenario Analysis: Based on internal modelling of two worst-case scenarios, we determined extreme weather events would not result in a substantive impact on our reinsurance business. Specifically, for Great-West Lifeco's reinsurance business, we determined that the location, occurrence and severity of extreme weather events (specifically wind storms, hurricanes and cyclones) in the areas of our reinsurance was coverable by the allocated available capital. Description of how the Results of the scenario informed and directly influenced the Business Objectives and Strategy: Based on the internal modelling of two worst-case scenarios, we determined climate-related events would not result in a substantive impact on our business. For example, in 2017, Great-West Lifeco established reserves of \$175 million for claims relating to losses from hurricanes Harvey, Irma and Maria combined in the third quarter of the year, which did not result in a substantive impact to the business.</p>

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Scope

Scope 1+2 (location-based)

% emissions in Scope

36.8

% reduction from base year

27.3

Base year

2013

Start year

2014

Base year emissions covered by target (metric tons CO2e)

21297

Target year

2025

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% achieved (emissions)

77.5

Target status

Underway

Please explain

This target (2013-2025) applies to Scope 1 and 2 emissions for Great-West Lifeco's owner-occupied and investment properties in Canada. The target excludes Scope 1 + 2 GHG emissions associated with corporate jet fuel use, backup generator diesel fuel use, and refrigerants. The target includes emissions associated with our property-level electricity, natural gas, and steam consumption at our corporate head office and investment properties. The reductions achieved to-date (77.5% towards target completion) are in part due to emissions reduction activities (e.g. energy efficiency focused retrofits and behavioral changes) at our corporate head office and investment properties in scope for this target.

Target reference number

Abs 2

Scope

Scope 1+2 (location-based)

% emissions in Scope

36.8

% reduction from base year

50.4

Base year

2013

Start year

2014

Base year emissions covered by target (metric tons CO2e)

21927

Target year

2036

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% achieved (emissions)

42

Target status

Underway

Please explain

This target (2013-2036) applies to Scope 1 and 2 emissions for Great-West Lifeco's owner-occupied and investment properties in Canada. The target excludes Scope 1 + 2 GHG emissions associated with corporate jet fuel use, backup generator diesel fuel use, and refrigerants. The target includes emissions associated with our property-level electricity, natural gas, and steam consumption at our corporate head office and investment properties. The reductions achieved to-date (42.0% towards target completion) are in part due to emissions reduction activities (e.g. energy efficiency focused retrofits and behavioral changes) at our corporate head office and investment properties in scope for this target.

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1a/b.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	3	
To be implemented*	8	309.3
Implementation commenced*	7	343.9
Implemented*	21	1010
Not to be implemented	1	

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Activity type

Energy efficiency: Building services

Description of activity

Other, please specify (Multiple energy efficiency retrofits)

Estimated annual CO2e savings (metric tonnes CO2e)

1010

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

723876

Investment required (unit currency – as specified in CC0.4)

2469099

Payback period

4 - 10 years

Estimated lifetime of the initiative

11-15 years

Comment

Multiple energy efficiency-focused retrofits at Canadian owner-occupied and investment properties, including: Lighting retrofits (e.g., T8 to LED conversions), building envelope upgrades (e.g., roof replacements), cooling tower retrofits/rebuilds, continuous (monitoring-based) commissioning projects, BAS system upgrades etc. Investment required does not include all energy efficiency projects that resulted in annual monetary savings. Annual monetary savings are estimated and pertain to Canadian owner-occupied and investment properties.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for energy efficiency	At Great-West Lifeco we have a dedicated budget for energy efficiency projects. Each year, an investigation is made into possible energy efficiency projects. The dedicated budget will vary based on the type of projects, return on investment, and overall positive sustainability impact (e.g. GHG emissions reduction potential). In 2017, we dedicated over \$7 Million (CAD) to energy efficiency-focused projects within the international owner-occupied property portfolio.
Financial optimization calculations	Financial optimization calculations are conducted on a project-by-project basis by asset management and property management teams for major capital expenditures at Lifeco corporately-owned properties as well as all investment (segregated fund) properties managed by GWL Realty Advisors.
Employee engagement	Employee engagement is a core component of Great-West Lifeco's sustainability strategy. In 2017, we continued to expand the mandate of the Corporate Properties Sustainability Working Group (CPSWG) and included teams from international owner-occupied properties. The Working Group, consisting of experienced property management and building operations employees, helps to direct sustainability initiatives with a particular focus on greenhouse gas (GHG) reductions at our corporate properties. So far, they have concentrated on retrofits focusing on energy, water and waste reduction, and the sharing of best practices and strategies among our facilities. The Working Group also helps co-ordinate environment-themed employee engagement activities, such as our participation in the longstanding Earth Day and Earth Hour events. Additionally, sustainability initiatives that can lead to emission reductions at the corporate level are run throughout the year as well, including energy awareness programs, waste reduction initiatives (e.g. paper use reduction), and the promotion of sustainable commuting strategies.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

Property management services through our subsidiary GWL Realty Advisors.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (Green buildings (e.g., LEED/BOMA BEST))

% revenue from low carbon product(s) in the reporting year

1

Comment

Through GWL Realty Advisors Inc., we have certified select assets under management as green buildings under LEED certifications and / or BOMA BEST certifications. Furthermore, we are working with building owners and tenants in our office and multi-residential portfolio to minimize the carbon footprint of these assets by prudently managing their overall environmental impact.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1 2013

Base year end

December 31 2013

Base year emissions (metric tons CO2e)

17480

Comment

Scope 2 (location-based)

Base year start

January 1 2013

Base year end

December 31 2013

Base year emissions (metric tons CO2e)

40394

Comment

Scope 2 (market-based)

Base year start

January 1 2013

Base year end

December 31 2013

Base year emissions (metric tons CO2e)

40394

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Row 1

Gross global Scope 1 emissions (metric tons CO2e)

14814

End-year of reporting period

<Not Applicable>

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

Great-West Lifeco does not purchase market-based contractual instruments.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Row 1

Scope 2, location-based

33448

Scope 2, market-based (if applicable)

33448

End-year of reporting period

<Not Applicable>

Comment

Great-West Lifeco does not purchase market-based contractual instruments.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

1820

Emissions calculation methodology

Weight of paper purchased was multiplied by appropriate emissions factor based on % post-consumer content provided by the manufacturer. All paper sources that were not explicitly identified as having Post Consumer Content were assumed to have 0% Post Consumer Content. Emissions factors based upon US average carbon intensity for selected recycled post-consumer waste content levels of uncoated freesheet paper (0%, 10%, 30%, 50%, 100%). All paper consumed is assumed to be recycled or otherwise accounted for in submitted waste stream data. Source: Environmental Paper Network, version 3.2.1, <http://c.environmentalpaper.org> Assuming Uncoated Freesheet Segregated by % Post-Consumer Waste - For Misc. values, 0% is assumed.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

The emissions relate to the procurement of office paper for GWL properties only. Emissions are associated with the production and of paper products used by GWL employees. When considered in the context of the scope 3 emissions from our investments, these emissions are considered to be immaterial.

Capital goods

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

These emissions are from the production of our office buildings assets and infrastructure. When considered in the context of the scope 3 emissions from our investments, these emissions are considered to be immaterial.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

These emissions are from the production of our office buildings assets and infrastructure. When considered in the context of the scope 3 emissions from our investments, these emissions are considered to be immaterial.

Upstream transportation and distribution

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

262

Emissions calculation methodology

The water consumption for each property was multiplied by country or region-specific emissions factors. Uses electricity intensity factor of 1.276 kWh/m³ of water. Maas, Carol. Greenhouse Gas and Energy Co-Benefits of Water Conservation. POLIS Project on Ecological Governance, University of Victoria. March 2009. Canada - Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015 Part 3: Greenhouse Gas Sources and Sinks in Canada. (Ottawa: Environment Canada, 2016.), 94-106. United States: Source: eGRID 2016, released Feb 2018 from [epa.gov/energy/egrid](https://www.epa.gov/energy/egrid) (Annual Total Output Emissions Rate). United Kingdom/Ireland: Source: Department of Energy and Climate Change, UK Government GHG Conversion Factors for Company Reporting, <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting#conversion-factors-2017>.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

The emissions relate to the transport and distribution of products that we purchase to our offices. The emissions we have calculated relate to the distribution of water for consumption in our corporate buildings. When considered in the context of the scope 3 emissions from our investments, these emissions are considered to be immaterial.

Waste generated in operations

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

3589

Emissions calculation methodology

Weight of landfill waste was multiplied by country specific emissions factors. Waste to energy was multiplied by plant specific or country specific emissions factors. Waste to energy and landfill waste emissions were combined. Canada - Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015 Part 2: Greenhouse Gas Sources and Sinks in Canada. (Ottawa: Environment Canada, 2012.), 192-195; York Durham Energy Centre correspondence, Nov 2017 (non-biomass emissions and tonnage only); Metro Vancouver Waste to Energy Plant correspondence, Sept 2017 (non-biomass emissions and tonnage only). United States - Source: https://www.epa.gov/sites/production/files/2016-03/documents/warm_v14_management_practices.pdf page 6-8. Used an average of wet/dry Mixed MSW. https://www.epa.gov/sites/production/files/2016-03/documents/warm_v14_management_practices.pdf. Page 5-4, Mixed MSW (noted per short ton) and non-biomass only as per WARM Background and Overview. United Kingdom/Ireland - Source: Department of Energy and Climate Change, UK Government GHG Conversion Factors for Company Reporting, <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting#conversion-factors-2017>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

This includes emissions related to the waste we generate at our corporate properties that is sent to landfill or waste-to-energy plants. When considered in the context of the scope 3 emissions from our investments, these emissions are considered to be immaterial

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

13267

Emissions calculation methodology

Distance traveled and/or litres of fuel used were multiplied by country-specific emissions factors. Corporate Air Travel (All) - Source: EPA, Optional Emissions from Commuting, Business Travel and Product Transport https://www.epa.gov/sites/production/files/2015-12/documents/emission-factors_nov_2015.pdf Reimbursed Mileage (Gasoline, Canada) - Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015: Greenhouse Gas Sources and Sinks in Canada Part 2. (Ottawa: Environment Canada, 2016.), 240. Reimbursed Mileage (Canada) – Source: Based on average of fuel efficiencies for mid-size, automatic transmission, 6 cylinder, regular gasoline vehicles from Fuel Consumption Ratings Search Tool (NRCan). Rail Travel – Source: Source: U.S. Environmental Protection Agency. Emissions Factors for Greenhouse Gas Inventories. 2015. https://www.epa.gov/sites/production/files/2015-12/documents/emission-factors_nov_2015.pdf Corporate Ground Travel (USA) - Source: EPA, Optional Emissions from Commuting, Business Travel and Product Transport https://www.epa.gov/sites/production/files/2015-12/documents/emission-factors_nov_2015.pdf Vehicle Gasoline (USA) – Source: Source: Emissions Factors for Greenhouse Gas Inventories, Nov 2015, Stationary Combustion Emissions Factors: https://www.epa.gov/sites/production/files/2015-12/documents/emission-factors_nov_2015.pdf Vehicle Gasoline (Ireland) – Source: Source: CH4 and N2O from Department of Energy and Climate Change, UK Government GHG Conversion Factors for Company Reporting, <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting#conversion-factors-2017> CO2 from <https://www.seai.ie/resources/seai-statistics/conversion-factors/>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

This includes emissions generated from both air and ground business travel. When considered in the context of the scope 3 emissions from our investments, these emissions are considered to be immaterial. However there is potential for emissions reductions that could be undertaken or influenced by the company for this source, so the emissions have been deemed relevant.

Employee commuting

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

This includes travel by our employees, such as bus, rail and automobile. When considered in the context of the scope 3 emissions from our investments, these emissions are considered to be immaterial.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

We do not lease assets and therefore it is not relevant.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

We do not produce a product that results in downstream emissions from transportation and distribution.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

We do not sell products that result in the processing of sold products.

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

We do not sell products in our business where the use of the product is relevant in the context of emissions.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

We do not sell products in our business where end of life treatment would be relevant.

Downstream leased assets

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

7900

Emissions calculation methodology

Energy, water and waste data collected from leased properties was multiplied by appropriate emissions factors. Electricity - Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015 Part 3: Greenhouse Gas Sources and Sinks in Canada. (Ottawa: Environment Canada, 2017.), 94-106. Natural Gas - Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015 Part 2: Greenhouse Gas Sources and Sinks in Canada. (Ottawa: Environment Canada, 2017.), 234. Waste – Source: Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015 Part 2: Greenhouse Gas Sources and Sinks in Canada. (Ottawa: Environment Canada, 2017.), 192-195 Water – Source: Uses electricity intensity factor of 1.276 kWh/m³ of water. Maas, Carol. Greenhouse Gas and Energy Co-Benefits of Water Conservation. POLIS Project on Ecological Governance, University of Victoria. March 2009. Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015 Part 3: Greenhouse Gas Sources and Sinks in Canada. (Ottawa: Environment Canada, 2016.), 94-106

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

Downstream leased assets are outside of our financial and operational control. These emissions are associated with Great-West Lifeco external (third-party managed) field offices and other leased area for Great-West Life, London Life, and Canada Life employees in Canada.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

We do not own any franchises.

Investments

Evaluation status

Relevant, calculated

Metric tonnes CO2e

89019

Emissions calculation methodology

Energy, water and waste data from segregated investment fund properties was multiplied by appropriate emissions factors. Electricity - Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015 Part 3: Greenhouse Gas Sources and Sinks in Canada. (Ottawa: Environment Canada, 2017.), 94-106. Natural Gas - Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015 Part 2: Greenhouse Gas Sources and Sinks in Canada. (Ottawa: Environment Canada, 2017.), 234. Waste – Source: Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015 Part 2: Greenhouse Gas Sources and Sinks in Canada. (Ottawa: Environment Canada, 2017.), 192-195 Water – Source: Uses electricity intensity factor of 1.276 kWh/m3 of water. Maas, Carol. Greenhouse Gas and Energy Co-Benefits of Water Conservation. POLIS Project on Ecological Governance, University of Victoria. March 2009. Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015 Part 3: Greenhouse Gas Sources and Sinks in Canada. (Ottawa: Environment Canada, 2016.), 94-106.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

This includes our investment property fund emissions from Canada. We have not included the emissions from other investments.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

No other upstream emissions are considered material.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

No other downstream emissions are considered material.

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO₂e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.00103

Metric numerator (Gross global combined Scope 1 and 2 emissions)

48262

Metric denominator

unit total revenue

Metric denominator: Unit total

47008000

Scope 2 figure used

Location-based

% change from previous year

6

Direction of change

Decreased

Reason for change

Revenue increased by 1.35% and year-over-year GHG emissions decreased in part due to emission reduction activities (energy efficiency measures) at Canadian owner-occupied and investment properties, resulting in a decrease of 2,634 tonnes CO₂e.

Intensity figure

2.07

Metric numerator (Gross global combined Scope 1 and 2 emissions)

48262

Metric denominator

full time equivalent (FTE) employee

Metric denominator: Unit total

23300

Scope 2 figure used

Location-based

% change from previous year

0.6

Direction of change

Decreased

Reason for change

Employee count decreased by 4.1% while emissions decreased in part due to emission reduction activities (energy efficiency measures) at Canadian owner-occupied and investment properties, resulting in a decrease of 2,634 tonnes CO₂e.

Intensity figure

0.00556

Metric numerator (Gross global combined Scope 1 and 2 emissions)

48262

Metric denominator

square foot

Metric denominator: Unit total

8685655

Scope 2 figure used

Location-based

% change from previous year

12.8

Direction of change

Decreased

Reason for change

Decrease due in part to energy efficiency measures (emission reduction activities) throughout the Canadian owner-occupied and investment property portfolio in 2017 (reduction of 2,634 tCO₂e), resulting in reduced emissions and emissions intensity. The area also increased by 737,401 sq. ft. due to the addition of 2 properties this year.

C7. Emissions breakdowns**C7.1****(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?**

Yes

C7.1a**(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).**

Greenhouse gas	Scope 1 emissions (metric tons of CO ₂ e)	GWP Reference
CO ₂	14532	IPCC Fourth Assessment Report (AR4 - 100 year)
CH ₄	8.2	IPCC Fourth Assessment Report (AR4 - 100 year)
N ₂ O	73	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	200	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2**(C7.2) Break down your total gross global Scope 1 emissions by country/region.**

Country/Region	Scope 1 emissions (metric tons CO ₂ e)
Canada	9735
United States of America	1261
United Kingdom of Great Britain and Northern Ireland	569
Ireland	3249

C7.3**(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.**

By facility

By activity

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Oliver Village	1005	53.547272	-113.518677
Concord Tower	307	45.504671	-73.56775
Oxbridge Place	533	53.536013	-113.50512
670 Sovereign Road	258	43.008638	-81.154967
255 Dufferin Avenue	886	42.987168	-81.249506
City Centre Plaza	42	43.596015	-79.641717
Canada Life Place	327	50.448355	-104.612709
180 Queen St	367	43.650747	-79.389931
190 Simcoe St	18	43.651552	-79.390712
330 University	6	43.651758	-79.389572
180 Simcoe St	115	43.651184	-79.39046
College Park	1483	43.660711	-79.38626
Yonge Richmond Centre	444	43.651497	-79.38066
455 René-Lévesque	0	53.517815	-113.49808
433 Main	501	49.28078	-123.101865
560 Broadway	23	49.885343	-97.154095
Winnipeg Data Center	0	49.875361	-97.042264
GWL Centre	1879	49.879174	-97.146911
Block 1, Irish Life Centre	272	53.349264	-6.255672
Block 2, Irish Life Centre	248	53.349461	-6.254703
Block 3A-3B, Lower Abbey Street	1036	53.349772	-6.255334
Block 4, Irish Life Centre	53	53.350347	-6.25571
Block 5/6, Irish Life Centre	141	53.350274	-6.256308
Block 7, Irish Life Centre	95	53.349669	-6.256113
Block A/B, Abbey Court	79	53.349023	-6.256886
Block C, Abbey Court	256	53.34922	-6.257573
Block D/E/F, Abbey Court	483	53.349494	-6.257114
Beresford Court, Beresford Place	243	53.348918	-6.255389
Irish Life Centre (Public Car Park)	322	53.349889	-6.25654
Block 1 Christchurch Square	10	53.342624	-6.272535
Block 2 Christchurch Square	11	53.342782	-6.272558
Great-West Financial Centre - Tower I	114	39.610576	-104.89244
Great-West Financial Centre - Tower II	307	39.61067	-104.89168
Great-West Financial Centre - Tower III	305	39.609958	-104.890738
Great-West Financial Centre - North Building	524	39.611685	-104.890513
Great-West Financial Centre - Parking Garage No. 1	7	39.610677	-104.890684
Great-West Financial Centre - Parking Garage No. 2	4	39.611449	-104.889832
Canada Life Place UK	205	51.693241	-0.179321
Maple House	100	51.692877	-0.179663
Lombard Street	247	51.51284	-0.088884
Canada Life Residential Flats	16	51.692855	-0.178693
Corporate Jet (GWLL)	707	49.9098	-97.2365
Corporate Jet (GWLI)	835	49.9098	-97.2365

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Jet Fuel	1542.42
Heating Fuels (e.g., natural gas)	11267.91
Back-up Generator Fuels (e.g., diesel)	94.33
Refrigerants	199.89
Vehicle Fuels (e.g., gasoline, diesel)	1709.37

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Canada	8713	8713	116923	110850
United States of America	16440	16440	26325	0
United Kingdom of Great Britain and Northern Ireland	2152	2152	6120	0
Ireland	6143	6143	12647	0

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

- By facility
- By activity

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2 location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Oliver Village	848	848
Concord Tower	308	308
Oxbridge Place	1880	1880
670 Sovereign Road	60	60
255 Dufferin Avenue	383	383
City Centre Plaza	152	152
Canada Life Place	1471	1471
180 Queen St	171	171
190 Simcoe St	1011	1011
330 University	374	374
180 Simcoe St	180	180
College Park	1586	1586
Yonge Richmond Centre	206	206
455 René-Lévesque	10	10
433 Main	9	9
560 Broadway	1	1
Winnipeg Data Center	28	28
GWL Centre	34	34
Block 1, Irish Life Centre	813	813
Block 2, Irish Life Centre	445	445
Block 3A-3B, Lower Abbey Street	1431	1431
Block 4, Irish Life Centre	131	131
Block 5/6, Irish Life Centre	350	350
Block 7, Irish Life Centre	231	231
Block A/B, Abbey Court	113	113
Block C, Abbey Court	361	361
Block D/E/F, Abbey Court	685	685
Beresford Court, Beresford Place	411	411
Irish Life Centre (Public Car Park)	962	962
Block 1 Christchurch Square	114	114
Block 2 Christchurch Square	96	96
Great-West Financial Centre - Tower I	4424	4424
Great-West Financial Centre - Tower II	4424	4424
Great-West Financial Centre - Tower III	2766	2766
Great-West Financial Centre - North Building	4301	4301
Great-West Financial Centre - Parking Garage No. 1	261	261
Great-West Financial Centre - Parking Garage No. 2	265	265
Canada Life Place UK	1294	1294
Maple House	286	286
Lombard Street	568	568
Canada Life Residential Flats	4	4

C7.6c

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

Activity	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Electricity	32326.4	32326.4
Steam	1121.48	1121.48

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	N/A
Other emissions reduction activities	1010	Decreased	2	Various efficiency retrofits, operational changes, and behavioral programs instituted throughout the international owner-occupied and Canadian investment portfolios. Calculation is as follows: $(-1010/50643)*100 = -2.0\%$
Divestment	0	No change	0	N/A
Acquisitions	0	No change	0	N/A
Mergers	0	No change	0	N/A
Change in output	496	Decreased	1	Slight decrease in vehicle miles of 50 tCO2e. The majority of this reduction was due to decreased business travel by car, by Irish Life employees in 2017 (reduction of 47 tCO2e). The other 3 tCO2e was due to a slight reduction in business travel by GWF/Putnam employees. The corporate jet used 172,852 fewer liters in 2017 for corporate travel, than in 2016, resulting in a decrease in emissions of 446 tCO2e. Calculation is as follows: $(-496\text{ tCO}_2\text{e}/50643\text{tCO}_2\text{e})*100 = -1.0\%$
Change in methodology	375	Decreased	0.7	GHG emissions factor changes resulted in a decrease of 370 t CO2e in the UK, an increase of 3 t CO2e in Ireland, and a decrease of 8 t CO2e in Canada. Overall the variance attributable to year-over-year changes to GHG emissions factors was a decrease of 375 t CO2e. Calculation as follows: $(-375/50643)*100 = -0.7\%$
Change in boundary	0	No change	0	N/A
Change in physical operating conditions	1392	Decreased	2.7	Weather and occupancy changes in the Canadian corporate buildings resulted in a net decrease in emissions of 1,392 tCO2e. The majority of the change was noted in natural gas (-1103 tCO2e), while electricity showed a 109 tCO2e decrease and steam showed a 180 tCO2e decrease. Calculation was as follows: $(-1392 / 50643) * 100 = -2.7\%$
Unidentified	898	Increased	1.8	Once all other possible analyses had been completed, the remaining change, that cannot be accounted for and is attributable to the Canadian head office and investment property portfolio was 898 tCO2e. Calculation was as follows: $(898/50643)*100 = 1.8\%$
Other	6	Decreased	0	While Canadian Corporate properties showed a reduction in refrigerant use in 2017 of 40 tCO2e, GWF/Putnam properties showed an increase of 108 tCO2e. This resulted in a net increase of 69 tCO2e. Diesel use decreased overall by 74 tCO2e, due to no 2017 usage by Canada Life UK (reduction of 37 tCO2e), a 74 tCO2e reduction by Canadian Corporate Properties and small increases by Irish Life and GWF/Putnam of 28 tCO2e and 9 tCO2e respectively. Overall Calculation was as follows: $((-74+69)/50643\text{tCO}_2\text{e})*100 = 0.01\%$

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	No

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	73521	73521
Consumption of purchased or acquired electricity	<Not Applicable>	104711	51165	155876
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	6139	0	6139
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	110850	124686	235536

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Aviation Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

5758

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

6875

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

60755

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Petrol

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

133

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Aviation Gasoline

Emission factor

0.00258

Unit

metric tons CO₂e per liter

Emission factor source

Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015: Greenhouse Gas Sources and Sinks in Canada Part 2. (Ottawa: Environment Canada, 2017.), 240.

Comment

Canadian aviation turbo fuel emissions factor

Diesel

Emission factor

0.00279

Unit

metric tons CO₂e per liter

Emission factor source

Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015: Greenhouse Gas Sources and Sinks in Canada Part 2. (Ottawa: Environment Canada, 2017.), 235, 240; Greenhouse Gas Inventory Guidance. Direct Emissions from Stationary Combustion Sources. EPA, Jan 2016; Department of Energy and Climate Change, UK Government GHG Conversion Factors for Company Reporting, <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting#conversion-factors-2017>

Comment

This is an average of Canadian, US and Irish Diesel Emissions factors.

Natural Gas

Emission factor

0.00201

Unit

metric tons CO₂e per m³

Emission factor source

Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2015 Part 2: Greenhouse Gas Sources and Sinks in Canada. (Ottawa: Environment Canada, 2017.), 234; Greenhouse Gas Inventory Guidance. Direct Emissions from Stationary Combustion Sources. EPA, Jan 2016; Department of Energy and Climate Change, UK Government GHG Conversion Factors for Company Reporting, <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting#conversion-factors-2017>;

Comment

This is an average of Canadian provincial natural gas emissions factors (ON, SK, MB, AB, QC) as well as the US, UK and Irish natural gas emissions factors.

Petrol

Emission factor

0.00244

Unit

metric tons CO₂e per liter

Emission factor source

EPA, Emissions Factors for Greenhouse Gas inventories (November 2015); Department of Energy and Climate Change, UK Government GHG Conversion Factors for Company Reporting, <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting#conversion-factors-2017>

Comment

This is an average of US and Irish light duty vehicle gasoline emissions factors.

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

Basis for applying a low-carbon emission factor

Other, please specify (Other (Ontario Steam, Enwave))

Low-carbon technology type

Other low-carbon technology, please specify (Low carbon district steam)

MWh consumed associated with low-carbon electricity, heat, steam or cooling

6139

Emission factor (in units of metric tons CO₂e per MWh)

0.1827

Comment

Great-West Lifeco purchases district steam for our Toronto owner-occupied office locations. This source produces lower emissions per MWh compared to traditional fossil fuel-based heating sources.

Basis for applying a low-carbon emission factor

Grid mix of renewable electricity

Low-carbon technology type

Hydropower

MWh consumed associated with low-carbon electricity, heat, steam or cooling

21357

Emission factor (in units of metric tons CO₂e per MWh)

0.0034

Comment

Electricity purchased from Manitoba Hydro for our owner-occupied and investment properties in Manitoba comes predominantly (99.6% of grid mix) from low carbon energy sources, such as utility-scale hydro and other renewables.

Basis for applying a low-carbon emission factor

Grid mix of renewable electricity

Low-carbon technology type

Solar PV

Wind

Hydropower

Nuclear

Biomass (including biogas)

MWh consumed associated with low-carbon electricity, heat, steam or cooling

75034

Emission factor (in units of metric tons CO₂e per MWh)

0.04

Comment

Electricity purchased in Ontario for our owner-occupied and investment properties comes predominantly (85% of grid mix) from low carbon energy sources including utility-scale hydro, nuclear, wind, solar, and other renewables.

Basis for applying a low-carbon emission factor

Grid mix of renewable electricity

Low-carbon technology type

Hydropower

MWh consumed associated with low-carbon electricity, heat, steam or cooling

8319

Emission factor (in units of metric tons CO2e per MWh)

0.0012

Comment

Electricity purchased in Quebec for our corporate property comes predominantly from low carbon energy sources, including hydropower.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.**Description**

Waste

Metric value

3589

Metric numerator

tCO2e

Metric denominator (intensity metric only)**% change from previous year**

0.4

Direction of change

Decreased

Please explain

Waste generation from the Canadian Corporate and International properties decreased from 2016 to 2017 by 13 tCO2e.

Description

Other, please specify (Seg Fund Investment Properties GHGs)

Metric value

89019

Metric numerator

tCO2e

Metric denominator (intensity metric only)**% change from previous year**

2.2

Direction of change

Decreased

Please explain

Emissions from the Canadian Segregated Fund properties decreased by 2,030 tCO2e. This was due to large reductions in electricity usage (2,027 tCO2e) as well as landfill waste (1,672 tCO2e). These reductions were countered by a large increase in natural gas (1,454 tCO2e) which was likely weather related.

Description

Other, please specify (Lifeco Leased Properties (Canada) GHGs)

Metric value

7900

Metric numerator

tCO2e

Metric denominator (intensity metric only)

% change from previous year

10.3

Direction of change

Increased

Please explain

Emissions from Canadian Leased properties increased by 738 tCO₂e, largely due to significant increases in waste emissions (2,242 tCO₂e). This was countered, in part, by a large reduction in electricity of 1,521 tCO₂e.

Description

Other, please specify (Water Consumption GHG Emissions)

Metric value

262

Metric numerator

tCO₂e

Metric denominator (intensity metric only)

% change from previous year

3.4

Direction of change

Decreased

Please explain

Water emissions in Canadian Corporate and International properties has decreased by 9 tCO₂e.

Description

Other, please specify (Business Travel GHG Emissions)

Metric value

13267

Metric numerator

tCO₂e

Metric denominator (intensity metric only)

% change from previous year

14.7

Direction of change

Decreased

Please explain

Business Travel emissions were reduced by 2,277 tCO₂e, due to reductions in car travel (278 tCO₂e), air travel (983 tCO₂e) and rail travel (19 tCO₂e)

Description

Other, please specify (Paper Use GHG Emissions)

Metric value

1820

Metric numerator

tCO₂e

Metric denominator (intensity metric only)

% change from previous year

13.1

Direction of change

Decreased

Please explain

Paper emissions were reduced by 274 tCO₂e due to a decrease in paper usage at Canadian Corporate offices.

Description

Energy use

Metric value

235536

Metric numerator

kWh

Metric denominator (intensity metric only)

% change from previous year

4

Direction of change

Decreased

Please explain

Absolute energy usage in the corporate properties was reduced by 9,795 MWH. This was largely due to reductions in electricity usage of 8,315 MWH and jet fuel of 1,666 MWH.

Description

Energy use

Metric value

27.12

Metric numerator

kWh

Metric denominator (intensity metric only)

ft²

% change from previous year

12.1

Direction of change

Decreased

Please explain

As a result of decreases in electricity and jet fuel usage (primarily), energy Intensity in the Corporate properties decreased by 12% or 3.75 kWh/ft².

Description

Other, please specify (Water Use)

Metric value

580711

Metric numerator

m³

Metric denominator (intensity metric only)

% change from previous year

4.5

Direction of change

Decreased

Please explain

Water consumption was decreased by 27,188 m³ as a result of a 5.4% decrease in the Canadian Corporate properties consumption and a 37.8% decrease in Canada Life UK's water usage.

Description

Other, please specify (Water Use Intensity)

Metric value

67

Metric numerator

litres

Metric denominator (intensity metric only)

ft2

% change from previous year

12.6

Direction of change

Decreased

Please explain

Water Use Intensity decreased by 10 litres/ft2 due to the reduction in consumption at both the Canadian Corporate and Canada Life UK properties. In addition, there was an increase in area between 2016 and 2017 of 737,401 ft2.

Description

Waste

Metric value

2264

Metric numerator

metric tonnes

Metric denominator (intensity metric only)

% change from previous year

0.8

Direction of change

Increased

Please explain

Total waste generation increased by 17 metric tonnes, due to a 16% increase from the US properties and a 32.1% increase from the UK properties. Waste to landfill decreased by 172 tonnes, while waste to waste-to-energy plants increased by 189.2. From our research and discussions with Canadian waste-to-energy plants, waste to energy emissions are significantly lower than those emitted from landfills.

Description

Waste

Metric value

52

Metric numerator

%

Metric denominator (intensity metric only)

% change from previous year

15

Direction of change

Decreased

Please explain

The waste diversion rate decreased due to a reduction in recycling from the US properties of 17.6 tonnes, alongside an increase in waste generation of 37 tonnes. Likewise, the UK properties reduced recycling by 67.4 tonnes while increasing waste by 21 tonnes.

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 and/or Scope 2 emissions and attach the relevant statements.

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

GWL_PwC Report on GHG Statement FY17_Signed.pdf

Page/ section reference

See pgs. 3-4 of document. Verification conducted by PwC to a limited level of assurance.

Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

GWL_PwC Report on GHG Statement FY17_Signed.pdf

Page/ section reference

Pages 3-4 of document. PwC completed a limited level assurance of all Scope 2 GHG emissions.

Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope

Scope 3- at least one applicable category

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

GWL_PwC Report on GHG Statement FY17_Signed.pdf

Page/section reference

See pg. 3-4 of attached document. Scope 3 GHG emissions related to all investment properties have been assured to a limited level by PwC.

Relevant standard

ISAE 3410

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C6. Emissions data	Year on year change in emissions (Scope 1)	ISAE 3410	The waste diversion rate decreased due to a reduction in recycling from the US properties of 17.6 tonnes, alongside an increase in waste generation of 37 tonnes. Likewise, the UK properties reduced recycling by 67.4 tonnes while increasing waste by 21 tonnes.
C6. Emissions data	Year on year change in emissions (Scope 2)	ISAE 3410	PwC verified the year on year change in emissions for Scope 1, Scope 2, and Scope 3. See attached PwC Assurance Statement.
C6. Emissions data	Year on year change in emissions (Scope 1 and 2)	ISAE 3410	PwC verified the year on year change in emissions for Scope 1, Scope 2, and Scope 3. See attached PwC Assurance Statement.
C6. Emissions data	Year on year change in emissions (Scope 3)	ISAE 3410	PwC verified the year on year change in emissions for Scope 1, Scope 2, and Scope 3. See attached PwC Assurance Statement.

GWL_PwC Report on GHG Statement FY17_Signed.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, and we do not anticipate being regulated in the next three years

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Stakeholder expectations

GHG Scope

Scope 1
Scope 2

Application

The price is applied to all owner-occupied and investment properties in Canada by our subsidiary GWLRA.

Actual price(s) used (Currency /metric ton)

30

Variance of price(s) used

CAD \$30-\$50/tCO₂e We currently reference a carbon price of \$30 per tonne as a proxy, which corresponds with the carbon tax price per tonne of CO₂e in British Columbia (British Columbia's Carbon Tax Act [SBC 2008] Chapter 40, B.C. Reg. 125/2008 O.C. 386/2008. We also use a proxy carbon price of \$50 per tonne, as per Canada's national approach to pricing carbon pollution, the "Pan-Canadian Framework".

Type of internal carbon price

Implicit price

Impact & implication

We use carbon prices for informational purposes – to determine the level of opportunity that our business may have to monetize carbon through potential cap and trade systems (e.g. GHG offset origination for commercial energy efficiency projects). Over time, we will be exploring how to integrate carbon costs into the investment decision-making process for our retrofit (and other) projects.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

- Yes, our suppliers
- Yes, our customers
- Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Innovation & collaboration (changing markets)

Details of engagement

Other, please specify (Collaboration with suppliers)

% of suppliers by number

2

% total procurement spend (direct and indirect)

13

% Scope 3 emissions as reported in C6.5

100

Rationale for the coverage of your engagement

We specifically engage with those suppliers of products and services that can reduce the environmental footprint of our buildings, operations, and processes. This includes suppliers that support us in improving the sustainability of our real estate assets,, as well as other products and services that enable us to reduce energy, water, and material consumption (e.g. building equipment retrofits, utility providers, data centre optimization LED lighting, paper, and building materials). By working collaboratively with these suppliers to encourage alternative and green products and services, it enables us to meet our green building certification targets as well as our GHG Scope 1+2 reduction target for Canadian properties to achieve a 27.3% GHG reduction by 2025 and a 50.4% reduction by 2036, based on a 2013 baseline year. Please note that the data provided for this question relates to our Canadian operations only.

Impact of engagement, including measures of success

By engaging with our suppliers to provide products and services that reduce our environmental footprint, we have been able to achieve our green building certification targets for our corporate head offices and investment properties. Specifically, as of 2017, 88% of Great-West Lifeco's Canadian real estate portfolio by floor area has achieved a green building certification (BOMA BEST® and/or LEED®). Furthermore, the use of more environmentally friendly products and services from our suppliers has contributed to our targeted GHG reductions for Canadian properties. Specifically, in 2017, we achieved a 77.5% reduction in the GHG scope 1 and 2 emissions since 2013, which surpasses our target of 27.3% GHG reduction by 2025 for Canadian properties.

Comment

Based on Great-West Lifeco's response to question 6.5, the Company engages with 100% of its Scope 3 suppliers, which include the waste management companies, water utilities, paper suppliers, and corporate travel suppliers who provide the necessary information for Great-West Lifeco to calculate the environmental impact (e.g., GHG emissions) of its operations.

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Education/information sharing

Details of engagement

Run an engagement campaign to education customers about your climate change performance and strategy

Size of engagement

100

% Scope 3 emissions as reported in C6.5

100

Please explain the rationale for selecting this group of customers and scope of engagement

Through our subsidiary, GWL Realty Advisors, we engage with the tenants, residents, and occupants of our downstream real estate assets under management, to better understand their changing needs, to enhance our services, and to endeavor to exceed their expectations, including with respect to energy management. For example, GWLRA engages to share information on sustainability-related metrics such as green building certification status, energy performance (e.g., energy reductions), water use efficiency, waste production and GHG emissions of the property. GWLRA commercial and multi-residential property managers continue to engage tenants on topics of interest. GWLRA holds monthly tenant meetings, interact through green teams, workshops and education events, issue newsletters, and host building events to encourage tenant participation in activities, such as Earth Hour, Earth Day/Week, and National Waste Reduction Week. Please note these Scope 3 emissions are specifically associated with the categories "Waste generated in operations" and "Investments" listed in question 6.5

Impact of engagement, including measures of success

On an ongoing basis, GWLRA conducts tenant and resident engagement (satisfaction) surveys to inform our continuous improvement efforts at both our commercial and multi-residential properties under management. Results from these satisfaction surveys are tied to the internal performance metrics of property management teams. Issues and follow-ups pertaining to the surveys are addressed by property and asset management teams, as required. By engaging with the occupants of its buildings, GWLRA is able to contribute to the continuous improvement of the efficiency of its assets under management. For example, engagement by GWLRA staff can lead tenants to adopt and install higher efficiency equipment for their spaces. In 2017, GWLRA achieved a 15.6% GHG emissions across its office and multi-residential portfolio, compared to its 2013 baseline, in part due to the efforts of tenants and residents.

C12.1c

(C12.1c) Give details of your climate-related engagement strategy with other partners in the value chain.

Method of engagement - We interact with communities through ongoing dialogue and face-to-face meetings to explore opportunities to support community-based needs on a wide range of sustainability issues, including but not limited to climate change.

Strategy for prioritizing engagements – Engagements are prioritized based on the needs identified by the community organizations and our specific focus areas. Within our environment focus, we prioritize organizations that are supporting carbon mitigation and adaptation strategies.

Measures of Success – We measure our success by the number of community projects and their associated impacts in addressing climate change issues. For example, in 2017, we continued our support for the International Institute for Sustainable Development (IISD). As part of this partnership, we were the catalyst funder for the Prairie Climate Centre – a joint venture between the IISD and the University of Winnipeg. The Centre provides research, advice and policy development on climate change.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

- Trade associations
- Funding research organizations
- Other

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

Canadian Institute of Actuaries (CIA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The CIA supports the advancement of knowledge into better understanding the impact of climate change and has developed a Climate Change and Sustainability Committee. Part of the Institute's role is to raise awareness of climate change and environmental sustainability with both members and the public.

How have you, or are you attempting to, influence the position?

Through the membership of our employees on the CIA, we are engaging within the industry to better understand how climate change could impact insurance pricing and valuation models.

Trade association

American Academy of Actuaries

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The American Academy of Actuaries supports knowledge and raises awareness among policymakers and the public at large of the increasing risks from extreme weather events. It aims to evaluate and help manage exposure to these risks from an insurance perspective, by combining current climate science knowledge with actuarial experience.

How have you, or are you attempting to, influence the position?

As members of the American Academy of Actuaries, we support and are increasing our own knowledge of climate risks.

Trade association

Chartered Financial Analyst (CFA) Institute

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The mission of CFA Institute is served by generating value for core investment management professionals and engaging with the core investment management industry to advance ethics, market integrity, and professional standards of practice, which collectively contributes value to society. The CFA Institute provides knowledge on climate change risks, pricing and management.

How have you, or are you attempting to, influence the position?

As members of the CFA Institute, we support and are increasing our own knowledge of climate risks.

Trade association

REALPAC (Real Property Association of Canada)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

REALPAC recognizes the significant economic, environmental, social, governance (EESG) impact of Canada's commercial real estate sector, and the need for an industry-driven approach toward supporting national and provincial strategies on greenhouse gas reduction (climate change action), the importance of reasoned discourse with political and policy officials, and the value of persuasive arguments for sustainable economic growth. The Association also recognizes the need for industry-wide "green" benchmarking data and shared best practices, and is working with its constituents and its national and international counterparts to help to responsibly ensure the sector is well positioned for a sustainable future.

How have you, or are you attempting to, influence the position?

As members of REALPAC, as well as REALPAC's Environmental, Social and Governance (ESG) Committee, we support initiatives to increase awareness on energy improvements and increase government incentives towards energy efficient existing and new commercial real estate.

Trade association

Building Owners and Managers Association (BOMA) and its regional chapters

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

BOMA is the voice of the Canadian commercial real estate industry, addressing issues of national concern, and promotes excellence in the industry through information, education advocacy and recognition, including on issues of carbon and energy efficiency. BOMA Canada implements timely, responsible and consistent policy positions on issues of critical importance to the Canadian commercial real estate industry (including climate change-related legislation).

How have you, or are you attempting to, influence the position?

Through our Board membership with BOMA, we support initiatives to increase awareness of energy and climate change issues, and incentives to increase building energy and carbon efficiency investments.

Trade association

Canada Green Building Council (CaGBC)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The CaGBC mission is to "Lead and accelerate the transformation to high-performing, healthy green buildings, homes and communities throughout Canada". This includes the adoption of green building practices that ultimately lead to reduced greenhouse gas emissions. The CaGBC is working with federal, provincial and municipal leaders and government officials to support the development and implementation of green building policies and sustainability practices across Canada and is working with CaGBC members and stakeholders to set and report against ambitious targets and action plans that will contribute to COP21 goals.

How have you, or are you attempting to, influence the position?

Through our membership with the CaGBC, we support initiatives to increase the adoption of green building practices, participation in green building certification systems, and incentives to increase energy and carbon efficiency investments.

Trade association

NAIOP (Commercial Real Estate Development Association)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

NAIOP is an organization for developers, owners, and investors of office, industrial, retail and mixed-use real estate. They provide strong advocacy, education and business opportunities on a range of issues. The organization is committed to providing its members with education and resources that encourage environmentally-responsible choices, as well as issuing policy statements that promote the utilization of sustainable building practices. Energy efficiency is a legislative priority for NAIOP and "NAIOP supports the advancement of higher levels of energy efficiency for commercial buildings through solutions that incorporate federal incentives, and realistic time frames for the financial recoupment of efficiency investments through utility savings."

How have you, or are you attempting to, influence the position?

Through our membership on the NAIOP, we support initiatives to increase awareness of energy and climate change issues as part of a broader mandate for real estate operations.

Trade association

Urban Land Institute (ULI)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

ULI is the oldest and largest network of cross-disciplinary real estate and land use experts in the world. The Urban Land Institute provides leadership in the responsible use of land and in creating and sustaining thriving communities worldwide. One of the ULI's six commitments is to "Exploring issues: Of urbanization, conservation, regeneration, land use, capital formation, and sustainable development". ULI also maintains a Centre for Sustainability and Economic Performance that is "dedicated to creating healthy, resilient, and high performance communities around the world. Through the work of its Greenprint and Urban Resilience programs, the Center provides leadership and support to land use professionals to invest in energy performance and portfolio resilience while reducing risks due to a changing climate."

How have you, or are you attempting to, influence the position?

Through our membership in ULI, we support initiatives and research focused on responsible and sustainable land use planning and development, including issues related to building resilience, energy conservation and climate change adaptation/mitigation.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

We engage with various organizations to support climate change awareness and management, and encourage our staff and distribution associated to get involved in these causes. Recent examples include the International Institute for Sustainable Development (IISD), Pollution Probe's Health Communities Campaign, and the Canadian Institute for Energy Training (CIET).

International Institute for Sustainable Development (IISD):

Method of Engagement – We are engaged with the IISD to promote research and knowledge of the risks associated with climate change.

Topic of Engagement - The topic of engagement is focused on understanding the risk of climate change and how we can anticipate the risk to increase community resilience.

Nature of Engagement – We are the catalyst funder for Prairie Climate Centre – a joint venture between the IISD and the University of Winnipeg. The Centre provides research, advice and policy development.

Actions Advocated – Through our engagement with the IISD we are supporting coordinated research, advice and policy development on climate change. The IISD and the University of Winnipeg established the Prairie Climate Centre to provide leadership on climate adaptation issues through climate and data research, communication and outreach, and planning and development. In 2016, our continued support of the IISD helped to launch the Prairie Climate Atlas. The Centre facilitates cutting-edge climate research and policy recommendations, helping governments, businesses and community members understand the impacts of climate change and respond effectively. In 2017, the Prairie Climate Centre released an internationally recognized research series, *Building a Climate-Resilient City*, which outlines innovative risk management approaches that can help cities adapt to climate change and ensure communities are safe and healthy for families. Throughout the year, their expert advice continued to shape key policy decisions by government and business, including assisting the Government of Manitoba in holding consultations and developing its Climate and Green Plan.

Pollution Probe's Healthy Communities Campaign:

Method of Engagement – We engage with Pollution Probe at a group level through ongoing dialogue and as a major sponsor of the organization's national, year-round Healthy Communities Campaign.

Topic of Engagement - We engage with Pollution Probe on focused e-waste recycling, which helps to divert waste from landfills and ultimately reduce carbon emissions.

Nature of Engagement – As both the Presenting Sponsor and an active corporate Participant, we made an early commitment to register an e-waste recycling drive. This year, our employees have continued to drop off electronic waste TVs, monitors, microwaves, audio equipment and phones – in special recycling bins set up in our Winnipeg buildings.

Actions Advocated –Through our engagement with Pollution Probe, we are supporting healthier sustainable behaviour. By diverting e-waste from landfills, we are supporting initiatives to protect both the environment and the health and safety of people from substances of concern like mercury and lead within electronics.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

An annual review of our direct and indirect activities that influence public policy, including both financial and non-financial engagements with voluntary sector organizations, is conducted by our Community Relations Department to ensure relevancy, efficacy and consistency of approach and strategy.

Where relevant, this process includes a review of our direct and indirect activities that influence public policy, which are assessed for consistency with our overall climate change strategy. This includes our support of organizations addressing climate change strategies and sustainability, including finding practical solutions to address energy and carbon management issues at a policy, business and personal level. New opportunities to support such endeavours are measured against annual strategic objectives.

In addition, the executive-led Corporate Social Responsibility (CSR) Committee provides perspective on the alignment of the community investment approach with the CSR strategy, which includes climate-related matters.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports

Status

Complete

Attach the document

2017-public-accountability-statement-en.PDF

Content elements

Strategy

Emissions figures

Emission targets

Other metrics

C14. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Deputy Chief Financial Officer, Chief Accounting and Control Officer	Chief Financial Officer (CFO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to
I am submitting my response	Public	Investors

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