Module: Introduction

Page: Introduction

CC0.1

Introduction
Please 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, Europe and Asia through Great-West Life, London Life, Canada Life, Irish Life, Great-West Financial and Putnam Investments. As of December 31, 2016, Great-West Lifeco and its companies had $1.2 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.

CC0.2

Reporting Year
Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.
We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.
Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Fri 01 Jan 2016 - Sat 31 Dec 2016

CC0.3

Country list configuration

Please select the countries for which you will be supplying data. If you are responding to the Electric Utilities module, this selection will be carried forward to assist you in completing your response.

Select country
Canada
United States of America
Ireland
United Kingdom

CC0.4

Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

CAD ($)

CC0.6

Modules
As part of the request for information on behalf of investors, companies in the electric utility sector, companies in the automobile and auto component manufacturing sector, companies in the oil and gas sector, companies in the information and communications technology sector (ICT) and companies in the food, beverage and tobacco sector (FBT) should complete supplementary questions in addition to the core questionnaire.
If you are in these sector groupings, the corresponding sector modules will not appear among the options of question CC0.6 but will automatically appear in the ORS navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.
If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below in CC0.6.

Further Information

Module: Management

Page: CC1. Governance

CC1.1

Where is the highest level of direct responsibility for climate change within your organization?

Board or individual/sub-set of the Board or other committee appointed by the Board

CC1.1a

Please identify the position of the individual or name of the committee with this responsibility

The highest level of direct responsibility for climate change has been 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-related issues, including climate change related matters, on a periodic basis by the Deputy Chief Financial Officer, Great-West Lifeco, who 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.

CC1.2

Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

CC1.2a

Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
Chief Financial Officer (CFO)	Recognition (non-monetary)	Emissions reduction target	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.
Other: CSR Committee	Recognition (non-monetary)	Emissions reduction target	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.
Other: VP, Corporate Properties	Monetary reward	Emissions reduction target	The Vice President, Corporate Properties variable compensation bonus structure includes executing on initiatives to achieve our carbon reduction target.
Corporate executive team	Monetary reward	Other: Climate change-related risks in the reinsurance business	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.
Facility managers	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project	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

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
		Energy reduction target Efficiency project Efficiency target Environmental criteria included in purchases	bonus structures for progress being made towards energy reduction targets at buildings.

Further Information

Page: CC2. Strategy

CC2.1

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Annually	Board or individual/sub-set of the Board or committee appointed by the Board	Our risk assessment process considers Canada, the U.S., UK, Europe and Asia.	> 6 years	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 business, changes in energy prices and green building standards on our building operations, and changing stakeholder expectations on our reporting.

CC2.1b

Please describe how your risk and opportunity identification processes are applied at both company and asset level

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, 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.

CC2.1c

How do you prioritize the risks and opportunities identified?

We prioritize our climate change risks and opportunities on an annual 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 assessment 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.

CC2.1d

Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment

CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

Our business 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. For example, we consider climate change risks and opportunities, performance and management strategies in our corporate and investment properties, insurance investment experience impacted by changing physical parameters, and stakeholder requests for greater disclosure. This information is consolidated by our CSR Committee through various corporate and subsidiary teams, including the risk assessment office. Where relevant, the CSR Lead communicates climate-related information to the executive team for consideration into business strategy decisions.

Climate change aspects that have influenced our 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 influencing the growth of our green bond investment portfolios, and stakeholder requests that are driving carbon reporting strategies.

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, which has increased by 14% since 2015. We are growing our casualty and property reinsurance business due to increasing demand driven by economic and risk modelling factors. In 2016, our business grew steadily, and is expected to grow incrementally over the next few years.

We are also now investing more to support the transition to a low carbon economy, in part due to increasing 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, purchasing $10 million of the new issue.

Furthermore, we are also now increasing investments into more energy efficiency programs in our corporate and investment properties. For example, we increased investments in 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 2016, we have 23 LEED® certified buildings, totalling nearly 11 million square feet, under GWL Realty Advisors' management, and more than 96% of the commercial portfolio is certified to the BOMA BEST® standard.

The most important components of our long-term strategy influenced by climate change, covering the next 5-10 years, is to pay even more attention to our experience with the risks associated with climate-related events and ensure it is being effectively integrated in pricing products and insurance contract liabilities. While not currently an issue, we are monitoring research and analysis on the potential climate-related health impacts on morbidity and mortality rates. We are also now working on improving our processes to integrate environmental, social and governance criteria, including climate-related events, into our products and services. For example, many of our subsidiaries are now UNPRI signatories, including Putnam Investments, Irish Life Investment Managers and GLC Asset Management. In 2016, we submitted our first UNPRI report for GLC Asset Management; communicating our approach to integrating environmental, social and governance factors into the investment process.

Overall, we believe that the integration of climate-related considerations into our business strategy has continued to enable us to run a financially solid and responsible company. Climate-related considerations are contributing to our strategic advantage over competitors through:

- market competitiveness in the real estate property management service from greener and more sustainable building service offerings;
- cost efficiencies from energy efficient programs;
- customer loyalty and trust through efficient, convenient, low carbon and responsible products and services;
- return on investment from renewable energy sector markets;
- attraction, retention and engagement of employees by encouraging our staff and distribution associates to get involved with the environmental causes we support as an organization, including those that address climate change such as Pollution Probe's Healthy Communities campaign; and,
- prudent risk management processes that enable us to limit our overall exposure to climate-related insurance and investment market losses by maintaining a diversified product and service portfolio, which is unique when compared to many of our peers in the industry.

An example of a substantial business decision made during 2016 influenced by climate change included:

- In 2016, GWL's Private Debt Investments group in Canada invested over $375 million in renewable energy projects, which included wind, solar, and hydro energy projects. The Private Debt Investments group also placed nearly $400 Million in transit-oriented and LEED® certified P3 (public-private-partnership) projects

CC2.2b

Please explain why climate change is not integrated into your business strategy

CC2.2c

Does your company use an internal price on carbon?

Yes

CC2.2d

Please provide details and examples of how your company uses an internal price on carbon

Within the GHG Inventory Report developed for GWL Realty Advisors' managed portfolio, which includes all head office and investment properties within the Great-West Lifeco reporting boundary, we put a price on carbon to understand how much GHG emissions reductions would potentially represent in monetary value.

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".

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.

CC2.3

Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Trade associations
Funding research organizations
Other

CC2.3a

On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution

CC2.3b

Are you on the Board of any trade associations or provide funding beyond membership?

Yes

CC2.3c

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
Canadian Institute of Actuaries (CIA)	Consistent	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	Through the membership of our employees on the CIA, we are engaging within the industry to better understand how climate change could impact

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
		role is to raise awareness of climate change and environmental sustainability with both members and the public.	insurance pricing and valuation models.
American Academy of Actuaries	Consistent	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.	As members of the American Academy of Actuaries, we support and are increasing our own knowledge of climate risks.
Chartered Financial Analyst (CFA) Institute	Consistent	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.	As members of the CFA Institute, we support and are increasing our own knowledge of climate risks.
REALPAC (Real Property Association of Canada)	Consistent	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.	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.
Building Owners and Managers Association (BOMA) and its regional chapters	Consistent	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).	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	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
Canada Green Building Council (CaGBC)	Consistent	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 ambitions targets and action plans that will contribute to COP21 goals.	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.
NAIOP (Commercial Real Estate Development Association)	Consistent	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."	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.

CC2.3d

Do you publicly disclose a list of all the research organizations that you fund?

Yes

CC2.3e

Please 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.

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.

Building Operator Certification Program
Method of Engagement – We engage with the Canadian Institute for Energy Training (CIET) to provide training and skills development for GWL Realty Advisors' staff as part of the Building Operator Certification Program.
Topic of Engagement - The topics of engagement are related to energy efficiency and the overall performance of the buildings GWL Realty Advisors manages.
Nature of Engagement - The program is an internationally recognized, nine-day training and certification program offered by the Canadian Institute for Energy Training. It offers facilities professionals training and skills development to improve the comfort, energy efficiency and overall operational performance of the buildings GWL Realty Advisors manages.
Actions Advocated – We support educational programs to increase the skills and training for building operators related to energy efficiency and the overall performance of buildings.

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.

CC2.3g

Please explain why you do not engage with policy makers

Further Information

Page: CC3. Targets and Initiatives

CC3.1

Did you have an emissions reduction or renewable energy consumption or production target that was active (ongoing or reached completion) in the reporting year?

Absolute target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
Abs1	Scope 1+2 (location-based)	33.2%	27.3%	2013	21322	2025	No, but we anticipate setting one in the next 2 years	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.
Abs2	Scope 1+2 (location-based)	33.2%	50.4%	2013	21322	2036	No, but we anticipate setting one in the next 2 years	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.

CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment

CC3.1c

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment

CC3.1d

Please provide details of your renewable energy consumption and/or production target

ID	Energy types covered by target	Base year	Base year energy for energy type covered (MWh)	% renewable energy in base year	Target year	% renewable energy in target year	Comment

CC3.1e

For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
Abs1	25%	72%	Great-West Lifeco has achieved 2013 to 2016 Scope 1 and 2 GHG emission reductions of 19.6% for its corporate head office and investment properties in scope for this target. These reductions 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.
Abs2	13%	39%	Great-West Lifeco has achieved 2013 to 2016 Scope 1 and 2 GHG emission reductions of 19.6% for its corporate head office and investment properties in scope for this target. These reductions 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.

CC3.1f

Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

CC3.2

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

CC3.2a

Please 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	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
Group of products	Property management services through our subsidiary GWL Realty Advisors.	Low carbon product	Other: N/A	1%	Less than or equal to 10%	Through GWL Realty Advisors Inc., 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.

CC3.3

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

Yes

CC3.3a

Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	3	
To be implemented*	18	653.2
Implementation commenced*	8	314.3
Implemented*	19	253.4
Not to be implemented	1	

CC3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Energy efficiency: Building services	1) Lighting-Focused Retrofits (multiple locations): Oxbridge Place, London Life RAM Centre, London Life HO, Mackenzie Financial, Canada Life Place, Yonge Richmond Centre; 2) BAS/controls upgrades at Canada Life Place HO; 3) Other energy (Scope 2) efficiency-focused	253	Scope 2 (location-based)	Voluntary	170173	377534	1-3 years	6-10 years	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

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	projects at Canadian owner-occupied and investment properties.								investment properties only.

CC3.3c

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 2016, we dedicated approximately CAD $1.8 Million to do energy efficiency projects at our owner occupied properties in Canada.
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.
Employee engagement	Employee engagement is a core component of Great-West Lifeco's sustainability strategy. In 2016, we continued working on GHG reduction initiatives through our Corporate Properties Sustainability Working Group (CPSWG). 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

Method	Comment
	strategies.

CC3.3d

If you do not have any emissions reduction initiatives, please explain why not

Further Information

Page: CC4. Communication

CC4.1

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	Status	Page/Section reference	Attach the document	Comment
In mainstream reports (including an integrated report) but have not used the CDSB Framework	Complete	16-20	https://www.cdp.net/sites/2017/90/7690/Climate Change 2017/Shared Documents/Attachments/CC4.1/2016 PAS_layout_EN_2 - Low Res for web FINAL.pdf	See page 20 for GHG emissions data disclosure.

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

Have you identified any inherent climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

CC5.1a

Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

CC5.1b

Please describe your inherent risks that are driven by changes in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

CC5.1c

Please describe your inherent risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

CC5.1d

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

We do not consider climate-related regulatory risks to have a substantive impact on our business in terms of our operations, revenues and expenditures. Through our risk assessment process, we assessed our climate-related risks over a 6 year timeline, taking into consideration various regulatory requirements including GHG reporting regulations, carbon market and pricing expectations, building energy requirements, and carbon taxes. We reviewed 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.

With respect to the acquisition and ongoing management of our corporate and investment properties, we are not directly impacted by any climate-related regulations. For example, on an annual basis, our subsidiary, GWLRA. quantifies the GHG emissions of our corporate and regional offices across Canada, as well as our third-party investment management properties. In 2016, these properties were not subject to Canadian GHG reporting regulatory thresholds, carbon markets or pricing in Canada.

The impact of climate-related regulations was also considered in the context of our investments. We recognize that we may be exposed to some sectors in our investments that could be impacted by climate related regulations. However, the impacts of climate related regulations in our investments are inherently 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 2016, no individual sector accounted for more than 5% of our invested assets. This diversification of assets better positions our Company to face fluctuations from exposure to regulatory carbon related risk exposure. Furthermore, the total percentage of assets invested in sectors that could be highly exposed to regulatory pressures related to carbon taxes and / or cap and trade schemes, such as the energy sector, amounted to approximately 5% of invested assets in 2016. In considering the diversification of our portfolio, any such climate-related risks would not be considered substantive to our business.

CC5.1e

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

While we do have exposure to weather-related property insurance claims in our reinsurance business, it represents a relatively small part of our overall business. For example, the losses of two worst-case scenarios would not result in a substantive impact on our business. Furthermore, it is important to note that the 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 weather related events would not have a substantive impact on our business operations, revenue or expenditures. We also have a maximum claim amount for all such contracts, further limiting our inherent risk exposure.

In our investment business, we have always carried a wide range of diversified funds limiting our risk exposure to any one particular sector and / or market, including those affected by changes in physical climate parameters. We also conduct in depth assessments on investment companies in sectors that rely on physical parameters, and adjust our investment decisions accordingly.

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. For example, over the past few years, we have not experienced notable changes in insurance claims as result of climate-related health impacts.

Finally, diversification has always been an inherent part of our business strategy, which enables us to limit our exposure to sectors, markets, and regions that may be impacted by climate-related physical parameters.

CC5.1f

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

We do not consider risks driven by changes in other climate-related developments to have a substantive impact on our business in terms of our operations, revenues and expenditures.

We assess changes in other climate-related developments over a 6 year time-frame. Through our assessment, we consider fluctuating socio-economic conditions that could result in direct or indirect loss of the Company’s financial results, operations or reputation, as well as changing stakeholder requests for greater disclosure.

Through our assessment, we do not consider fluctuating socio-economic conditions that result from society's exposure to weather-related losses to have a substantive impact on our business. We use prudent policy termination assumptions, which take into account recent Company and industry experience and the latest research on expected future trends, including with respect to fluctuating socio-economic conditions. For example, lapse rates from extreme weather events, such as Hurricane Katrina, are not considered to be severe and have had limited impact on insurance affordability and customer retention rates.

From a stakeholder standpoint, 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. 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.

Based on the above, we are not, at this time, exposed to risks driven by changes in other climate-related developments that have the potential to generate a substantive change in our business operations, revenues or expenditure.

Further Information

Page: CC6. Climate Change Opportunities

CC6.1

Have you identified any inherent climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

CC6.1a

Please describe your inherent opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

CC6.1b

Please describe your inherent opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

CC6.1c

Please describe your inherent opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

CC6.1d

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

We assessed climate-related opportunities over a 6 year time-line, taking into consideration various regulatory requirements including cap and trade schemes, green building government incentives, as well as government subsidies/financing that support growth in the renewable energy market and low carbon economy. We reviewed 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, we did not consider government incentives to support cleaner more energy efficient upgrades to provide a substantive opportunity in light of the fact that spend on utilities at our owner occupied properties represents less than 1% of our overall expenditures. While GHG reductions have been achieved, we do not yet see opportunities to benefit substantively from GHG-related regulations given the limited impact of our buildings.

We also considered the possible investment opportunities in renewable energy markets and the low carbon economy that are increasing, in part due to government incentives. For example, in 2016, GWL's Private Debt Investments group in Canada invested over $375 million in renewable energy projects, which included wind,

solar, and hydro energy projects. The Private Debt Investments group also placed nearly $400 Million in transit-oriented and LEED® certified P3 (public-private-partnership) projects. Furthermore, 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 environmentally friendly infrastructure projects across the province. Our GWL Bond investments supported this Green Bond program purchasing 10 million of the new issue. Despite these commitments, the opportunities from these investments are currently not considered substantive to our business. Our Bond Investments group continues to monitor the green bond market and future government incentive drivers in the renewable energy and low carbon economy. At this time, less than 1% of our overall asset value is invested in renewable energy markets and therefore any growth in this sector would not be substantive to our overall business.

CC6.1e

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

We do not consider climate-related opportunities driven by changes in physical parameters to have a substantive impact on our business in terms of our operations, revenues and expenditures.

We assessed climate-related opportunities driven by changes in physical parameters over a 6 year timeline, given the unpredictability of weather patterns. In particular, we considered the possible opportunities associated with general warming temperatures and the associated energy reduction costs during the winter periods on our corporate and investment properties.

In our review, any potential opportunities from warming temperatures would not have a substantive impact on the operating costs of our business. Given the geographic diversity of our operations, cost savings from warming temperatures would be offset by expenditures during extreme cold weather. Furthermore, any benefits that accrue from energy cost savings from physical weather changes would not be substantive for our business. For example, in 2016, our overall spend on utilities for our owner-occupied properties represented less than 1% of overall expenditures, limiting any substantive impacts on our business operations, expenditures and revenues.

In our investment business, we have always carried a wide range of diversified funds limiting our risk exposure to any one particular sector, market or geography, including those affected positively by changes in physical climate parameters. This diversification of assets limits the opportunities from specific sectors impacted by physical climate events.

Based on the above, we have not, at this time, identified opportunities driven by changes in physical parameters to generate a substantive change in our business operations, revenue or expenditure

CC6.1f

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

We do not consider climate-related opportunities driven by changes in other climate-related developments to have the potential to generate a substantive impact on our business in terms of our operations, revenues and expenditures. We assessed other climate-related opportunities over a 6 year timeline, taking into consideration the opportunities related to new products and services, building customer trust and loyalty and reducing operational costs.

In terms of enhancing our reputation with our customers, we considered the property management services carried out by our subsidiary GWLRA. For example, since 2013, GWLRA achieved approximately 16,803 tonnes of CO2e emission 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 would not generate a substantive change to our business operations, expenditures or revenue. For example, in 2016, the fee income from our real estate management services represented less than 1% of our overall net income, and therefore the opportunity would not be substantive to our business.

We also considered the impact of using low carbon products in our business offering (such as electronic applications and eClaim services), as well as our clients' responsible investment options that include environmental and climate-related screening criteria. Currently, Great-West Lifeco's subsidiary GLC asset management and Putnam are signatories to the UNPRI, demonstrating our commitment to the development of a more sustainable global financial system. While these initiatives contribute to supporting even greater growth within our business, the benefits are not considered to generate a substantive change to our business given our diversified businesses and extensive distribution reach. For example, in 2016, the income from responsible investment options represented less than 0.1% of our overall net income, and therefore the opportunity would not be substantive to our business.

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Tue 01 Jan 2013 - Tue 31 Dec 2013	18182
Scope 2 (location-based)	Tue 01 Jan 2013 - Tue 31 Dec 2013	45989
Scope 2 (market-based)	Tue 01 Jan 2013 - Tue 31 Dec 2013	45989

CC7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

CC7.2a

If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

CC7.3

Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	IPCC Fourth Assessment Report (AR4 - 100 year)

CC7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference

Further Information

Attachments

https://www.cdp.net/sites/2017/90/7690/Climate Change 2017/Shared Documents/Attachments/ClimateChange2017/CC7.EmissionsMethodology/Great-West Lifeco - Emissions Factors-FINAL.xlsx

Page: CC8. Emissions Data - (1 Jan 2016 - 31 Dec 2016)

CC8.1

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Financial control

CC8.2

Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e

14919

CC8.3

Please describe your approach to reporting Scope 2 emissions

Scope 2, location-based	Scope 2, market-based	Comment
We are reporting a Scope 2, location-based figure	We are reporting a Scope 2, market-based figure	

CC8.3a

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e

Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
40189	40189	Great-West Lifeco does not purchase market based contractual instruments.

CC8.4

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

CC8.4a

Please provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure

Source	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded

CC8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	Less than or equal to 2%	Data Gaps Assumptions Extrapolation	Data was sourced from supplier invoices and spreadsheet files provided by property managers. The spreadsheet files had to be taken as is and assumed to be correct. Where supplier data was missing, spreadsheet data was used to fill in the gaps and where neither of these data sources were available, manual estimations were made.
Scope 2 (location-based)	More than 5% but less than or equal to 10%	Data Gaps Assumptions Extrapolation	Data was sourced from smart meter data, supplier invoices and spreadsheet files provided by property managers. The spreadsheet files had to be taken as is and assumed to be correct. Where smart meter data was not available, supplier invoices were used, and in their absence, spreadsheet data fill in the gaps. Where none of these data sources were available, manual estimations were made.
Scope 2 (market-based)	More than 5% but less than or equal to 10%	Data Gaps Assumptions Extrapolation	Data was sourced from smart meter data, supplier invoices and spreadsheet files provided by property managers. The spreadsheet files had to be taken as is and assumed to be correct. Where smart meter data was not available, supplier invoices were used, and in their absence, spreadsheet data fill in the gaps. Where none of these data sources were available, manual estimations were made.

CC8.6

Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

Third party verification or assurance process in place

CC8.6a

Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2017/90/7690/Climate Change 2017/Shared Documents/Attachments/CC8.6a/GWL_PwC Report on GHG Statement FY16_FINAL - May 16, 2017.pdf	pgs. 3-6	ISAE 3410	100

CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emission Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission

CC8.7

Please indicate the verification/assurance status that applies to at least one of your reported Scope 2 emissions figures

Third party verification or assurance process in place

CC8.7a

Please provide further details of the verification/assurance undertaken for your location-based and/or market-based Scope 2 emissions, and attach the relevant statements

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Location-based	Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2017/90/7690/Climate Change 2017/Shared Documents/Attachments/CC8.7a/GWL_PwC Report on GHG Statement FY16_FINAL - May 16, 2017.pdf	pgs. 3-6	ISAE 3410	100

CC8.8

Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment
Year on year change in emissions (Scope 1)	PwC verified the year on year change in emissions for Scope 1, Scope 2, and Scope 3. See attached PwC Assurance Statement.
Year on year change in emissions (Scope 2)	PwC verified the year on year change in emissions for Scope 1, Scope 2, and Scope 3. See attached PwC Assurance Statement.
Year on year change in emissions (Scope 1 and 2)	PwC verified the year on year change in emissions for Scope 1, Scope 2, and Scope 3. See attached PwC Assurance Statement.
Year on year change in emissions (Scope 3)	PwC verified the year on year change in emissions for Scope 1, Scope 2, and Scope 3. See attached PwC Assurance Statement.

CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

Further Information

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2016 - 31 Dec 2016)

CC9.1

Do you have Scope 1 emissions sources in more than one country?

Yes

CC9.1a

Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e
Canada	7990
United States of America	1055
United Kingdom	546
Ireland	3335

CC9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By facility
By GHG type
By activity

CC9.2a

Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)

CC9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
Oliver Village	955	53.547272	-113.518677
Oxbridge Place	430	53.536013	-113.505120
670 Sovereign Road	338	43.008638	-81.154967
255 Dufferin Avenue	832	42.987168	-81.249506

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
City Centre Plaza	59	43.596015	-79.641717
Canada Life Place	296	50.448355	-104.612709
180 Queen St	341	43.650747	-79.389931
190 Simcoe St	17	43.651552	-79.390712
330 University	3	43.651758	-79.389572
180 Simcoe St	165	43.651184	-79.390460
College Park	1471	43.660711	-79.386260
Yonge Richmond Centre	473	43.651497	-79.380660
433 Main	697	49.280780	-123.101865
560 Broadway	14	49.885343	-97.154095
Winnipeg Data Center	90	49.875361	-97.042264
GWL Centre	1808	49.879174	-97.146911
Block 1, Irish Life Centre	280	53.349264	-6.255672
Block 2, Irish Life Centre	255	53.349461	-6.254703
Block 3A-3B, Lower Abbey Street	1043	53.349772	-6.255334
Block 4, Irish Life Centre	54	53.350347	-6.255710
Block 5/6, Irish Life Centre	145	53.350274	-6.256308
Block 7, Irish Life Centre	98	53.349669	-6.256113
Block A/B, Abbey Court	81	53.349023	-6.256886
Block C, Abbey Court	264	53.349220	-6.257573
Block D/E/F, Abbey Court	497	53.349494	-6.257114
Beresford Court, Beresford Place	257	53.348918	-6.255389
Irish Life Centre (Public Car Park)	331	53.349889	-6.256540
Block 1 Christchurch Square	13	53.342624	-6.272535
Block 2 Christchurch Square	16	53.342782	-6.272558
Great-West Financial Centre - Tower I	60	39.610576	-104.89244
Great-West Financial Centre - Tower II	252	39.610670	-104.89168
Great-West Financial Centre - Tower III	252	39.609958	-104.890738
Great-West Financial Centre - North Building	478	39.611685	-104.890513
Great-West Financial Centre - Parking	8	39.610677	-104.890684

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
Garage No. 1			
Great-West Financial Centre - Parking Garage No. 2	4	39.611449	-104.889832
Canada Life Place UK	248	51.693241	-0.179321
Maple House	77	51.692877	-0.179663
Lombard Street	207	51.512840	-0.088884
Canada Life Residential Flats	14	51.692855	-0.178693
Corporate Jet (GWLL)	1170		
Corporate Jet (GWLI)	824		

CC9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)
CO2	14706
CH4	13
N2O	79
HFCs	121

CC9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)
Jet Fuel	1994
Natural Gas	10881
Back-up generators	166
Refrigerants	121
Vehicle Fuels	1758

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2016 - 31 Dec 2016)

CC10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

CC10.1a

Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes 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	9357	9357	116215	

Country/Region	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes 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)
United States of America	22081	22081	27826	
United Kingdom	2549	2549	6185	
Ireland	6204	6204	13200	

CC10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By facility
By activity

CC10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)

CC10.2b

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
Oliver Village	829	829
Oxbridge Place	1999	1999
670 Sovereign Road	66	66
255 Dufferin Avenue	421	421
City Centre Plaza	168	168
Canada Life Place	1884	1884
180 Queen St	176	176
190 Simcoe St	1075	1075
330 University	408	408
180 Simcoe St	189	189
College Park	1739	1739
Yonge Richmond Centre	329	329
433 Main	10	10
560 Broadway	1	1
Winnipeg Data Center	28	28
GWL Centre	34	34
Block 1, Irish Life Centre	774	774
Block 2, Irish Life Centre	450	450
Block 3A-3B, Lower Abbey Street	1428	1428
Block 4, Irish Life Centre	154	154
Block 5/6, Irish Life Centre	393	393
Block 7, Irish Life Centre	259	259
Block A/B, Abbey Court	112	112
Block C, Abbey Court	360	360
Block D/E/F, Abbey Court	683	683
Beresford Court, Beresford Place	401	401
Irish Life Centre (Public Car Park)	960	960
Block 1 Christchurch Square	121	121
Block 2 Christchurch Square	107	107

Facility	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
Great-West Financial Centre - Tower I	5988	5988
Great-West Financial Centre - Tower II	5988	5988
Great-West Financial Centre - Tower III	3498	3498
Great-West Financial Centre - North Building	5730	5730
Great-West Financial Centre - Parking Garage No. 1	439	439
Great-West Financial Centre - Parking Garage No. 2	438	438
Canada Life Place UK	1532	1532
Maple House	376	376
Lombard Street	637	637
Canada Life Residential Flats	4	4

CC10.2c

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
Electricity	38995	38995
Steam	1194	1194

Further Information

Page: CC11. Energy

CC11.1

What percentage of your total operational spend in the reporting year was on energy?

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

CC11.2

Please state how much heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	MWh
Heat	
Steam	6541
Cooling	

CC11.3

Please state how much fuel in MWh your organization has consumed (for energy purposes) during the reporting year

72601

CC11.3a

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh

Fuels	MWh
Aviation gasoline	7424
Natural gas	58792
Diesel/Gas oil	777
Motor gasoline	5608

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the market-based Scope 2 figure reported in CC8.3a

Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Emissions factor (in units of metric tonnes CO2e per MWh)	Comment
Contract with suppliers or utilities, with a supplier-specific emission rate, not backed by electricity attribute certificates	6541	0.1830	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.
Contract with suppliers or utilities, with a supplier-specific emission rate, not backed by electricity attribute certificates	21298	0.0034	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.
Contract with suppliers or utilities, with a supplier-specific emission rate, not backed by electricity attribute certificates	82381	0.0410	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.

CC11.5

Please report how much electricity you produce in MWh, and how much electricity you consume in MWh

Total electricity consumed (MWh)	Consumed electricity that is purchased (MWh)	Total electricity produced (MWh)	Total renewable electricity produced (MWh)	Consumed renewable electricity that is produced by company (MWh)	Comment
156886	156886	0	0	0	Great-West Lifeco does not produce its own electricity.

Further Information

Page: CC12. Emissions Performance

CC12.1

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

Decreased

CC12.1a

Please 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

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Emissions reduction activities	0.46	Decrease	Various efficiency retrofits, operational changes, and behavioral programs instituted throughout the Canadian owner-occupied and investment property portfolio. Reductions have been calculated by looking at completed project listings and ruling out other factors such as corporate jet usage, weather, occupancy, acquisitions and scope 1 & 2 GHG emissions year-over-year variance due to backup generator diesel fuel use and refrigerant top-ups. This year, 253 t CO2e from Scope 2 emissions were reduced due to emission reduction activities, and our total Scope 1 and Scope 2 emissions in the previous year (2015CY) was 55,224 t CO2e. Therefore we arrived at a decrease of 0.46% through the following calculation: (253 / 55,224) * 100 = 0.46% decrease.
Divestment		No change	
Acquisitions		No change	
Mergers		No change	
Change in output	0.78	Increase	Slight increase in transportation (jet and vehicle) miles resulting in an increase of 77 tonnes CO2e year-over-year, as well as a total increase in electricity emissions of 356 tCO2e in 2016 over 2015. This occurred mainly in the international properties located in the US, UK and in Ireland and corresponded to an 8% increase in occupancy throughout the global company portfolio due to organic growth: (433 / 55,224) * 100 = 0.78%.
Change in methodology		No change	
Change in boundary		No change	
Change in physical operating conditions	0.89	Decrease	Weather and occupancy changes in the Canadian buildings resulted in a net decrease in emissions of 493 tCO2e. The majority of the change was noted in natural gas (-402 tCO2e), while electricity showed a 36 tCO2e increase, and steam showed a 128 tCO2e decrease. Our total Scope 1 and Scope 2 emissions in the previous year (2015CY) were 55,224 t CO2e. The net decrease in GHG emissions attributable to changes in physical operating conditions was 493 tonnes CO2e. Therefore the calculation used was as follows: (493 / 55,224) * 100 = 0.89%
Unidentified		No change	
Other	0.13	Decrease	Fewer refrigerant top-ups in 2016, compared to 2015 and less diesel used for back-up gneerator purposes. GHG emissions from these sources decreased from 286 tCO2e in 2015 to 213 tCO2e in 2016. Therefore, the net GHG emissions decrease due to refrigerants and diesel was 73 tonnes CO2e. Our total Scope 1 and Scope 2 emissions in the previous year (2015CY) were 55,224 t CO2e. Calculation as follows: (73 / 55,224) *100 = 0.13%

CC12.1b

Is your emissions performance calculations in CC12.1 and CC12.1a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

CC12.2

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
1.19	metric tonnes CO2e	46381	Location-based	27.2	Decrease	Revenue increased by 37% 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 253 tonnes CO2e.

CC12.3

Please provide any additional intensity (normalized) metrics that are appropriate to your business operations

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
2.27	metric tonnes CO2e	full time equivalent (FTE) employee	24300	Location-based	7.60	Decrease	Employee count increased by 8% 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 253 tonnes CO2e.
6.93	metric tonnes CO2e	Other: 1000 ft2 (thousand square feet)	7948	Location-based	0.21	Decrease	Decrease due in part to energy efficiency measures (emission reduction activities) throughout the Canadian owner-occupied and investment property portfolio in 2016 (reduction of 253 t CO2e), resulting in reduced emissions and emissions intensity.

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

No, and we do not currently anticipate doing so in the next 2 years

CC13.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership

CC13.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

CC13.2

Has your organization originated any project-based carbon credits or purchased any within the reporting period?

No

CC13.2a

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits canceled	Purpose, e.g. compliance

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Not relevant, calculated	2308	Weight of paper purchased was multiplied by appropriate emissions factor based on % post consumer content.	100%	The emissions relate to the procurement of office paper for GWL properties. 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	Not relevant, explanation provided				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)	Not relevant, explanation provided				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	Not relevant, calculated	218	Indirect measurement using provincial emission factors. Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2014 Part 1: Greenhouse Gas Sources and Sinks in Canada.	100%	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 buildings. When considered in the context of the scope 3 emissions from our investments, these emissions are considered to be immaterial.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Waste generated in operations	Not relevant, calculated	3492	Indirect measurement using provincial emission factors. Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2014 Part 1: Greenhouse Gas Sources and Sinks in Canada.	100%	This includes emission related to the waste we generate at our corporate head office and investment properties, and sent to landfill. When considered in the context of the scope 3 emissions from our investments, these emissions are considered to be immaterial
Business travel	Relevant, calculated	13777	For Air Travel: Calculated using vendor provided air travel data and calculated using emissions factors from: EPA, Optional Emissions from Commuting, Business Travel and Product Transport For Reimbursed Employee Mileage: Calculated using an average fuel efficiency rating of 0.098L/km with emissions factors from: Environment Canada.	100%	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	Not relevant, explanation provided				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	Not relevant, explanation provided				We do not lease assets and therefore it is not relevant.
Downstream transportation and distribution	Not relevant, explanation provided				We do not produce a product that results in downstream emissions from transportation and distribution.
Processing of sold products	Not relevant, explanation provided				We do not sell products that result in the processing of sold products.
Use of sold	Not relevant,				We do not sell products in our business where

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
products	explanation provided				the use of the product is relevant in the context of emissions.
End of life treatment of sold products	Not relevant, explanation provided				We do not sell products in our business where end of life treatment would be relevant.
Downstream leased assets	Not relevant, calculated	7265	Indirect measurement using provincial emission factors. Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2014 Part 1: Greenhouse Gas Sources and Sinks in Canada.	100%	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	Not relevant, explanation provided				We do not own any franchises.
Investments	Relevant, calculated	90202	Indirect measurement using provincial emission factors. Source: Environment Canada. Greenhouse Gas Division, National Inventory Report 1990–2014 Part 1: Greenhouse Gas Sources and Sinks in Canada.	100%	This includes our investment property fund emissions from Canada. We have not included the emissions from other investments.
Other (upstream)	Not relevant, explanation provided				No other upstream emissions are considered material.
Other (downstream)	Not relevant, explanation provided				No other downstream emissions are considered material.

CC14.2

Please indicate the verification/assurance status that applies to your reported Scope 3 emissions

Third party verification or assurance process in place

CC14.2a

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 3 emissions verified (%)
Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2017/90/7690/Climate Change 2017/Shared Documents/Attachments/CC14.2a/GWL_PwC Report on GHG Statement FY16_FINAL - May 16, 2017.pdf	pgs. 3-6	ISAE 3410	80

CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Purchased goods & services	Change in methodology	16.3	Increase	Although there were significant reductions in the use of paper from 2011 through 2015, emissions associated with the purchase of paper increased in 2016 due to a change in methodology from one of our suppliers in providing total paper volume. We're now making further incremental improvements as digital alternatives help us eliminate internal reports and reduce printing of many client and advisor materials. Our business areas are providing more data electronically to our clients.
Upstream transportation & distribution	Emissions reduction activities	3.2	Decrease	Decrease partially attributable to water use reduction activities (e.g., installation of high efficiency fixtures) at corporate properties.
Waste generated in operations	Change in physical operating conditions	3.4	Increase	Increased waste generated by Canadian, US and Irish properties.
Business travel	Change in physical operating conditions	8.9	Increase	Due to increase in business-related travel.
Downstream leased assets	Emissions reduction activities	3.8	Decrease	Decrease due in part to efficiencies in consolidating third-party leased office space.
Investments	Emissions reduction activities	1.7	Decrease	Efficiency conservation measures taken at various locations within the investment portfolio (e.g., lighting retrofits, BAS upgrades etc.) have resulted in energy reductions in both electricity and natural gas.

CC14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

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

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

Other Partners - Community Organizations

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 2016, 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 and successfully launched the Prairie Climate Atlas centre in 2016.

CC14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Type of engagement	Number of suppliers	% of total spend (direct and indirect)	Impact of engagement
Collaboration/innovation	20	3%	We work collaboratively with our suppliers to encourage innovative products and services that can reduce our environmental impact, including GHG emissions. The Great-West Life Assurance Company in Canada actively pursues opportunities with our Suppliers to incorporate environmental friendly processes and products from the sourcing of FSC paper to the selection of environmentally friendly textiles and office supplies. Through these collaborations, we are now sourcing more sustainable products from many of our suppliers in Canada. For example, we have upgraded our buildings with LED lighting and efficient equipment, installed efficient printing and data centres, included greener specifications in our supplier Request for Services, are using more environmentally friendly janitorial services, and have moved towards recycled and sustainable paper. Please note that the data provided for this question relates to our Canadian operations only.

CC14.4c

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Charles Henaire	Deputy Chief Financial Officer, Chief Accounting and Control Officer	Chief Financial Officer (CFO)

Further Information

CDP