2017
Low-Carbon Economy Progress Report

Executive Summary

Through our corporate citizenship platform, The Ready Commitment, we aim to help to create a more inclusive and sustainable tomorrow so that individuals feel more confident in their ability to participate and succeed in a changing world. As part of this we are targeting a total of $100 billion by 2030 to help support the transition to a low-carbon economy through our lending, financing, asset management, and internal corporate programs.

We feel that in North America we are in the early stages of the transition to a low-carbon economy. In light of this, our approach is balanced, taking into consideration the energy needs and economic realities of today. This will require major capital investment across all areas of the economy. As a Top 10 North American bank based on assets and deposits, TD has a vital role to play in supporting the transition to a low-carbon economy.

This report describes our approach to supporting the transition to a low-carbon economy and provides our first year of progress towards our financial target of a total of $100 billion by 2030. We have focused our efforts on three low-carbon drivers, measured across a range of market sectors.

LOW-CARBON DRIVERS

• Low-carbon power generation

• Energy efficiency and management

• Green infrastructure and sustainable land use

MARKET SECTORS

• Energy

• Real estate

• Recycling

• Sustainable land use

• Auto & transportation

• Multi-sector (can be applied across multiple industries)

In 2017, TD contributed $22 billion in support of the transition to a low-carbon economy through our lending, financing, asset management, and internal corporate programs. Low-carbon energy transactions, which include power generation, energy and utilities, represents the largest market sector at 32% of the total. Much of this activity is directed towards the ongoing greening of North American electricity supply and distribution. Green bond underwriting represents 34% of our total, demonstrating the importance of green bonds in directing global capital flows towards the low-carbon economy. Results from the analysis of our asset management business show a significant interest by institutional investors in companies that are contributing to the transition to a low-carbon economy, representing 20% of our 2017 low-carbon financial total.

We also undertook a preliminary assessment of the environmental and economic impacts of our activities. We estimated that 611,000 tonnes of greenhouse gas (GHG) emissions were avoided. From an economic perspective we have estimated that our financing activities have supported more than 51,000 jobs and contributed $8.8 billion to GDP, demonstrating that support of the low-carbon economy can reduce GHG emissions and generate economic benefit.

While TD is still in the early stages of our low-carbon journey, these results show that there is significant capital flow across multiple market sectors, demonstrating increased demand for products and services that create business value, while contributing to environmental health. We hope this trend will accelerate as governments, businesses and communities join together to facilitate and help sustain a low-carbon economy, helping to empower people of all backgrounds and abilities to participate meaningfully in their communities and succeed with confidence in a changing world.

1.0 **Introduction**

In March 2018, TD launched a new global corporate citizenship platform called The Ready Commitment. This is a multi-year, enterprise initiative aimed at helping to create a more inclusive and sustainable tomorrow. We aspire to link our business, philanthropy and human capital to help create the opportunities people need to feel more confident – not just about their finances, but also in their ability to succeed and fully participate in a changing world. As part of this, we are committed to helping efforts to improve the quality of the environment to help people and economies to thrive. This includes a focus on supporting the transition to a low-carbon economy.
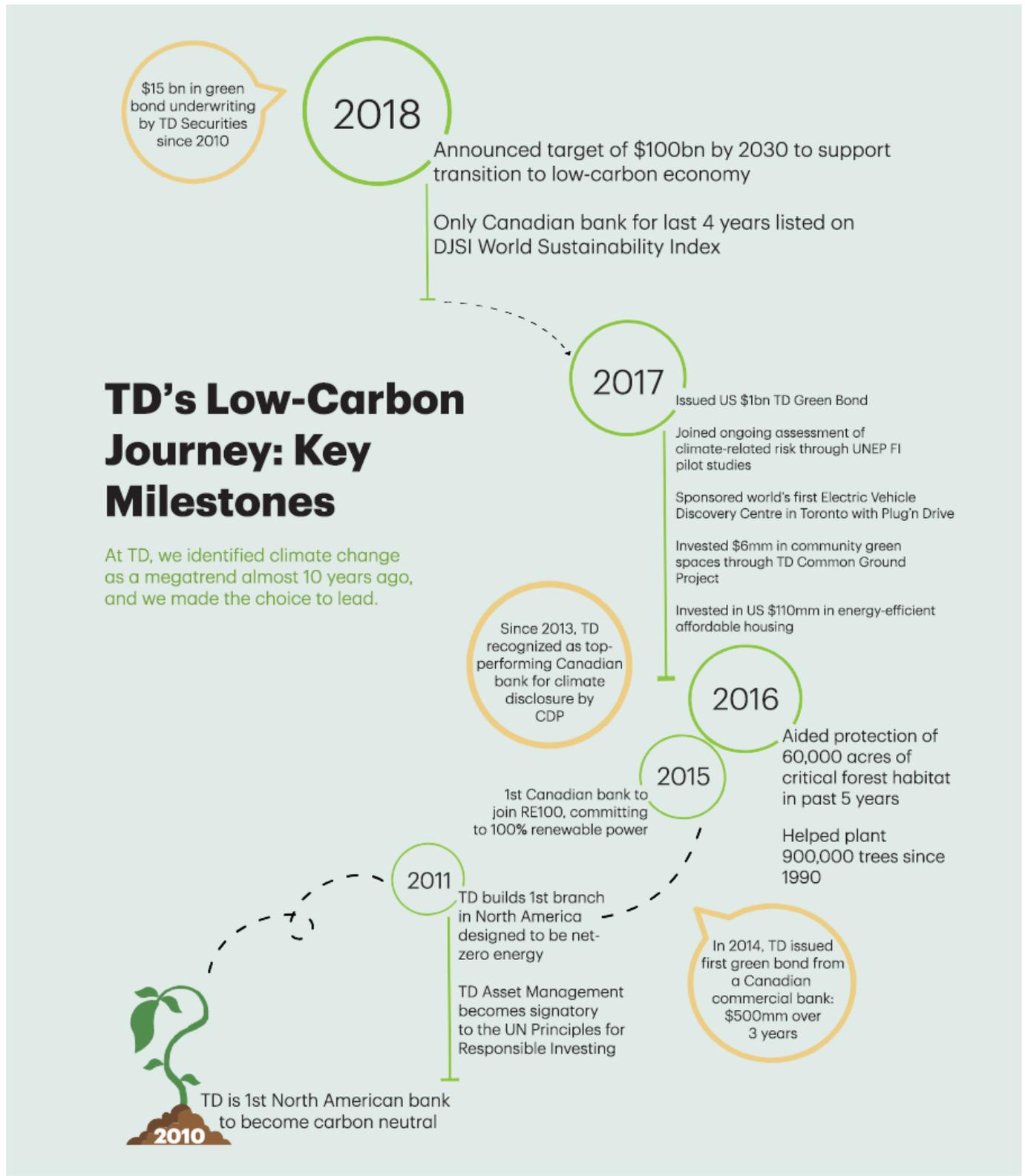
In 2008, TD identified climate change as an environmental and economic megatrend that would have a growing impact on communities, businesses and the economy over the next 50 years and more. Since then we have been working to understand the potential implications of climate change to our customers, our business, and broader society. It is acknowledged by the Intergovernmental Panel on Climate Change (IPCC) that reducing the impacts of climate change means transitioning to a low-carbon economy.[1] TD's approach recognizes that this transition must be balanced, taking into consideration the energy needs and economic realities of today while building for the future.

In 2017, we launched a commitment to support the transition to a low-carbon economy through our lending, financing, asset management and internal corporate programs – anchored by a target of $100 billion in total by 2030. This report describes our progress. In it we include:

- An understanding of the low-carbon economy;

- Our approach to assessing TD's performance against this target;

- How we will measure the environmental and economic impact of low-carbon lending, financing, asset management, and internal corporate programs;

- Results for fiscal year 2017, our baseline reporting year;

- Our learnings and next steps.

1   https://www.ipcc.ch/sr15/

TD's Low-Carbon Journey: Key Milestones

At TD, we identified climate change as a megatrend almost 10 years ago, and we made the choice to lead.

2018

$15 bn in green bond underwriting by TD Securities since 2010

Announced target of $100bn by 2030 to support transition to low-carbon economy

Only Canadian bank for last 4 years listed on DJSI World Sustainability Index

2017

Issued US $1bn TD Green Bond

Joined ongoing assessment of climate-related risk through UNEP FI pilot studies

Sponsored world's first Electric Vehicle Discovery Centre in Toronto with Plug'n Drive

Invested $6mm in community green spaces through TD Common Ground Project

Invested in US $110mm in energy-efficient affordable housing

Since 2013, TD recognized as top-performing Canadian bank for climate disclosure by CDP

2016

Aided protection of 60,000 acres of critical forest habitat in past 5 years

Helped plant 900,000 trees since 1990

2015

1st Canadian bank to join RE100, committing to 100% renewable power

2011

TD builds 1st branch in North America designed to be net-zero energy

TD Asset Management becomes signatory to the UN Principles for Responsible Investing

In 2014, TD issued first green bond from a Canadian commercial bank: $500mm over 3 years

2010

TD is 1st North American bank to become carbon neutral

2.0 Understanding the Low-Carbon Economy

DEFINING THE CHALLENGE

The Environmental Dimension

Through organizations such as the Intergovernmental Panel on Climate Change (IPCC), the environmental impacts of climate change have been the subject of scientific study for several decades and have become a topic of global concern[2]. As described by these scientific studies, impacts arise from increasing concentrations of greenhouse gases in the atmosphere, which result in global warming. Global warming creates a wide range of environmental impacts – such as changing weather patterns, rising sea levels, and regional severe weather impacts ranging from flooding to increased wildfires. These in turn have the potential to impact food crops and natural resources, industrial and municipal infrastructure and natural ecosystems. Impacts of global warming are occurring today and will continue to occur for many decades to come.

The Economic Dimension

The social and economic impacts of climate change are being felt across an increasing number of cities and communities that are being severely impacted by severe weather events, flooding or wildfires. In 2020, the long-term financial impact of natural catastrophes is estimated[3] to cost Canadians $5 billion per year and between $21 and $43 billion by 2050. In addition, many Canadian businesses are experiencing economic disruption through a wide range of impacts, such as power outages and supply chain impacts[4]. Within 15 years, it is estimated that the average annual cost of coastal storms in North America will increase by over $10 billion to an estimated $35 billion due to higher sea levels, storm surges and an increase in hurricane activity[5].

Approximately 80% of GHG emissions are associated with the combustion of fossil fuels used for energy production – coal, oil and natural gas. The remaining 20% of GHG emissions are from land use practices related to agriculture, deforestation or waste management[6]. In order to limit global warming, the IPCC has called for a concerted effort across government, business, and society to reduce GHG emissions[7]. This is a significant undertaking since the supply of abundant and cheap energy underpins our economic growth and prosperity and today almost 80% of our global energy supply is delivered through fossil fuels[8]. Despite efforts to reduce GHG emissions, forecasts show that our growing global population, expected to reach almost 10 billion by 2050, will drive demand for energy, goods and services. For example, global energy demand is forecast to nearly double between 2020 and 2050[19].

2   https://www.ipcc.ch/report/ar4/wg2/
3   https://www.td.com/document/PDF/economics/special/NaturalCatastrophes.pdf
4   https://www.td.com/document/PDF/economics/special/NaturalCatastrophes.pdf
5   https://riskybusiness.org/report/national/
6   Shell Sky Scenario, https://www.shell.com/energy-and-innovation/the-energy-future/scenarios/shell-scenario-sky.html (original data from World Extended Energy Balances © OECD/IEA 2017)
7   https://www.ipcc.ch/sr15/
8   Shell Sky Scenario, https://www.shell.com/energy-and-innovation/the-energy-future/scenarios/shell-scenario-sky.html (original data from World Extended Energy Balances © 9OECD/IEA 2017)
9   IEA World Energy Outlook 2017, https://www.iea.org/weo2017/

Global GHG emissions by economic sector
(adapted from United States Environmental Protection Agency[10])

25%
Electricity and
Heat Production

24%
Agriculture, Forestry
and Other Land Use

14%
Transportation

6%
Buildings

21%
Industry

10%
Other Energy

GLOBAL ACTIONS

Governments around the world have jointly committed to work together to reduce GHG emissions by 2050 in order to limit average global temperature increases to 2 degrees Celsius (or less) above pre-industrial levels. This commitment is spelled out in the Paris Agreement of 2015 that was signed by nearly 200 countries. Many signatory countries have set national, regional or municipal targets that support this global goal (see Table 1).

Table 1: Examples of regional climate change targets[11]

Region	Climate change target
Canada	Emissions reduction target of 80% below 2005 levels by 2050
Quebec, Canada	Emissions reduction target of 20% below 1990 levels by 2020
British Columbia, Canada	Emissions reduction target of 33% below 2007 levels by 2020
California, US	Emissions reduction target to 1990 levels by 2020; further reduction to 40% below 1990 levels by 2030
New York City, US	Emissions reduction target of 80% below 2005 levels by 2050; 40% by 2030

10 https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data
11 Canada and Canadian provinces from: https://www.cbc.ca/news/canada/how-canada-s-provinces-are-tackling-greenhouse-gas-emissions-1.3030535
California from: https://www.c2es.org/document/greenhouse-gas-emissions-targets/
NYC from: https://www1.nyc.gov/site/sustainability/codes/80x50

Public discourse on climate change has been largely focused on environmental outcomes but there are also important social and economic dimensions to climate change that need to be addressed. Surveys show that while citizens are strongly united in seeking a future that achieves a more sustainable and clean environment, this future cannot be at the expense of employment opportunities and economic growth[12].

We hear frequent references to the 'low-carbon economy', but it's not clear what the structure of such an economy would be. For example, how would it be different from today? Would there be major re-alignment of economic sectors? What would be the impact on Gross Domestic Product (GDP) – and the future impact on jobs?

These are some of the questions that TD is working with internal and external stakeholders on as we determine our own actions.

DEFINING THE LOW-CARBON ECONOMY

There is no widely agreed upon standard definition of the low-carbon economy. At TD we have created this simple working definition of what a low-carbon economy is:

A low-carbon economy is one that operates with a goal of minimizing greenhouse gas emissions while achieving sustainable economic growth.

Ideally, in low-carbon economies, there would be a focus on reducing GHG emissions in:

• energy production and use in industrial processes, natural resource development, commercial and consumer usage;

• communities, infrastructure and the built environment;

• commercial goods and services; and

• consumer behaviours.

The transition to a low-carbon economy will require major capital investment across all areas of the economy. Estimates of the global capital needs in order to meet the 2-degree Paris target[13] range up to USD90 trillion over the next 15 years[14].

In its report, 'Greening of the Economy'[15], TD Economics observes that efforts to support a low-carbon economy are occurring across all sectors of the economy through *'the aggregation of consumer, corporate and policy efforts to increase operational efficiency and minimize environmental impact while fostering economic growth, diversification and competition'.* Corporate actions to support the low-carbon economy are broadly categorized in the report as:

1) De-carbonization of carbon-intensive industries: Carbon-intensive industries can achieve significant reductions in their GHG emissions through process improvements and innovations that increase energy efficiency (e.g. certified low-carbon aluminum production through use of hydro power[16], concrete production with an increased proportion of lower impact cement materials[17]).

2) Reduction of embedded carbon: Many industries create end products and services that are not directly associated with GHG emissions but may, in their manufacture and use, generate significant emissions. Examples include digital technologies that rely on electricity and smart products created through advanced materials manufacturing processes (e.g. smart phones). Switching of manufacturing energy supply to lower carbon sources can greatly reduce emissions from these industries.

3) Low-carbon technologies (Cleantech): These consist of industries or products that are specifically designed to reduce or eliminate GHG emissions. The best known of this group is renewable energy but clean technologies are being developed and applied across a wide range of industry sectors, ranging from transportation and waste management through to agriculture and forestry.

12 Canadian Environmental Barometer, Environics Research, 2018

13 At the Paris UN climate conference (COP 21) in December 2015, 195 countries adopted the first ever universal, legally binding climate deal. The agreement sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming to well below 2 degrees Celsius. For more information see: https://ec.europa.eu/clima/policies/international/negotiations/paris_en.

14 New Climate Economy, 2016, 'The Sustainable Infrastructure Imperative' https://newclimateeconomy.report/2016/wp-content/uploads/sites/4/2014/08/NCE_2016Report.pdf.

15 TD Economics, 2013, 'The Greening of the Canadian Economy' and TD Economics, 2013, 'The Greening of the U.S. Economy'.

16 https://www.reuters.com/article/us-aluminium-sales-environment/hydro-powered-smelters-charge-premium-prices-for-green-aluminum-idUSKBN1AI1CF.

17 https://reader.chathamhouse.org/making-concrete-change-innovation-low-carbon-cement-and-concrete#.

As a Top 10 North American bank based on assets and deposits, TD has an important role to play in helping the transition to a low-carbon economy in North America. This is why we have committed to a target of a total of $100 billion in low-carbon lending, financing, asset management and internal corporate programs by 2030.

As we evolve our low-carbon economy program over the next decade, we will seek to provide a 'roadmap' of this transition that provides:

- a practical understanding of the key drivers of the low-carbon economy and how they may evolve over time;

- implications for key business sectors, including both risks and opportunities for innovation; and

- potential impacts to the environment, the economy and jobs.

As of 2018, TD was the only Canadian-based bank, and one of a handful of banks globally, to commit to a low-carbon financing target. This first progress report describes our inclusion criteria and results for our first year of reporting covering fiscal year 2017. Going forward, we intend to publish annual progress updates. The global professional services firm PwC supported TD by providing technical advice on the inclusion criteria, the accounting methodology, and data collection and analysis.

3.0 **Our Approach**

Key elements of the low-carbon economy considered by TD in its 2017 data collection are shown in Table 2.

Table 2: Elements of the low-carbon economy considered

	Description	Categories
Power generation	Technologies that help supply energy from low-carbon sources	• Wind energy • Geothermal energy • Solar energy • Tidal and ocean energy generation • Biomass • Hydropower • Nuclear energy
Energy efficiency and management	Technologies and programs that help reduce energy consumption or help manage and store energy	• Energy reduction through building efficiency (e.g. LEED or BOMA certified properties[18]) • Energy reduction through industrial efficiency • Energy reduction through transportation efficiency • Energy distribution, storage, and management • Climate change and eco-efficient products, production technologies, and processes
Green infrastructure and sustainable land use	Technologies or programs that support conservation, sustainable land, waste or water management and enhance climate resiliency	• Sustainable agriculture and forestry practices (including primary producers and downstream forest products) • Water, wastewater management and treatment • Sustainable waste management • Pollution prevention and control • Conservation

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18 LEED (Leadership in Energy and Environmental Design) is a building certification program run by the U.S. Green Building Council. BOMA (Building Owners and Managers Association of Canada) has a sustainability certification system called BOMA Building Environmental Standards.

The methodology we developed with support from PwC tracks TD's support for the low-carbon economy in relation to TD's businesses and by market sector.

Business lines include:

Retail banking and insurance	Providing banking and insurance products to our retail customers that support the low-carbon economy (e.g. electric vehicle coverage)
Lending	Providing debt or credit to our clients through wholesale and business banking
Investment banking	Providing capital markets advice, access to credit markets, and merger and acquisition support
Asset management	Managing the assets of clients primarily in equity and debt instruments through TD Asset Management (TDAM)
Green bond underwriting	Supporting our clients through green bond underwriting[19]
Corporate programs	TD's corporate spending on environmental programs, energy and water efficiency initiatives within our facilities, and donations to community-based environmental organizations and activities that are designed to help advance the low-carbon economy. This also includes green bonds held within TD's own treasury.

Market sectors include:

Energy	Power utilities, independent power producers, developers of energy storage and smart grid solutions, energy efficiency projects, low-carbon biofuels, and power transmission projects that improve access to low-carbon energy and connect remote communities to cleaner power sources
Real estate	Certified 'green' commercial and residential developments and real estate developers that are developing predominantly certified 'green' buildings
Recycling	Companies that help reduce the need for the environmental impacts associated with extracting virgin materials of many kinds
Sustainable land use	Companies across the forest products value chain that use certified sustainable wood fibre
Auto & transportation	Passenger rail development, low-carbon buses, and purchase or insurance of low-carbon vehicles
Multi-sector	Developing technology and business model solutions that help address the challenges of climate change across many industries including companies listed on the Toronto Stock Exchange CleanTech Index[20]

19 Note: TD's own green bond issuances are captured within our lending businesses
20 Clean Tech index: https://www.tmxmoney.com/en/research/cleantech.html

INCLUSION CRITERIA

TD is engaged in many types of finance and we have sought to include as many parts of our business as possible in this important target. We developed a set of inclusion criteria to determine which transactions we will count towards the low-carbon economy target. While we recognize that these may evolve over time as our knowledge and understanding of the low-carbon economy grows, we also developed a set of underlying principles to help guide our development and application of the inclusion criteria:

Principles in developing and applying the Inclusion Criteria:

- We have included only projects or companies whose activities are aimed at helping to reduce or eliminate GHG emissions (as described in Table 2 on the previous page).

- We have used existing third-party standards for defining the low-carbon economy (e.g. certification schemes) where they exist.

- We have included only projects or companies that clearly meet our inclusion criteria. Where relevant information or data are not available to determine whether our criteria are met, we have not included that project or company.

- We have taken steps to prevent double counting; for example, if an existing financing commitment is increased the following financial year, only the increase will be considered in the low-carbon finance total rather than including the full commitment amount.

- We will revisit our inclusion criteria at a minimum of every three years or if there are significant developments in the global definition of sustainable finance and the low-carbon economy.

3.0 **Our Approach** (continued)

A summary of our inclusion criteria by industry is in Table 3. More information on how we developed our inclusion criteria and accounting methodology can be found in Appendix A.

Table 3: Summary of inclusion criteria

Client		Inclusion criteria
Power and utilities		We include companies if their energy production is from 80% low-carbon sources or higher. We also include project financing where the project will connect low-carbon energy generation capacity to the grid.
Real estate		We include project-specific financing for LEED or BOMA certified buildings, or financing to real estate developer clients with 80% or more of their portfolio as certified green buildings.
Autos		We include financing related to hybrid, electric, or ultra-low emissions vehicles (ULEVs)[21].
Transportation		We only include financing related to urban rail or long-range passenger rail and no or low emission buses.
Forestry and wood product		We include companies where 80% or more of the wood fiber that goes into their products is certified from sustainable sources (i.e. sources certified to FSC, SFI or PEFC standards[22]). We also include financing for environmental conservation projects such as those funded through TD's corporate giving programs.
Recycling		All financing to recycling companies is included.

IMPACT MEASUREMENT

We aim to help support a transition to a low-carbon economy that not only reduces GHG emissions but has positive economic and societal impacts. We have therefore chosen the following metrics to measure the impact of our low-carbon economy program:

- reduction in GHG emissions;
- contribution to economic activity (GDP); and
- jobs supported.

We have used the following widely accepted measurement approaches (for more information see Appendix A):

- GHG emissions avoided: Estimated the GHG emissions avoided through reduced energy consumption or alternative energy production that has been enabled by TD's low-carbon transactions.

- GDP and jobs supported: Used national and provincial economic multipliers to calculate the direct and indirect economic impacts of the industry relevant to the low-carbon company or project.

The impact areas have been estimated based on one year's worth of impact. This is a conservative approach as many of the transactions will finance projects or activities that will continue to have positive impacts into the future. For example, financing the operation of a LEED-certified building will create energy savings and consequent GHG emissions reductions over the lifetime of the building.

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21 Ultra-low emissions vehicles are defined as those that emit less than 75g of CO_2/km. https://www.smmt.co.uk/industry-topics/technology-innovation/ultra-low-emission-vehicles-ulevs/
22 FSC: Forest Stewardship Council, SFI: Sustainable Forestry Initiative, PEFC: Programme for the Endorsement of Forest Certification.

4.0 **Results**

In 2017, TD directed $22 billion toward support of the transition to a low-carbon economy through our lending, finance, asset management and internal corporate programs. Our results show that there is capital flow across multiple market sectors, demonstrating strong market demand for products and services that create business value and at the same time reflect a strong commitment to reducing GHG emissions[23].

Figure 1: TD's 2017 financial support of the low-carbon economy by market sector[24]

36%
Multi-Sector

32%
Energy

9%
Real Estate

1%
Recycling

1%
Sustainable Land Use

21%
Auto and Transportation

23   TD Economics, 2013, 'The Greening of the Canadian Economy' and TD Economics, 2013, 'The Greening of the U.S. Economy'
24   Figure shows market sector breakdown of the $22 billion (CAD) total

Figure 2: TD's 2017 financial support of the low-carbon economy by TD business
(based on inclusion criteria)[25]

$	**28%** Finance		**34%** Green Bond Underwriting
	20% Asset Management		**6%** Retail
	2% Corporate Programs		**10%** Lending

These results yield several important insights:

- Energy (low-carbon power generation, distribution, utilities and energy efficiency) is the largest low-carbon market sector represented in our low-carbon portfolio, representing 32% of the total. TD's lending, finance and asset management businesses all contribute to supporting the capitalization of the low-carbon economy. Much of this activity is directed toward the ongoing greening of North American electricity supply and distribution.

- Green bonds support activities across multiple market sectors. Green bond underwriting represents 34% of our total, demonstrating the importance of green bonds in directing global capital flows towards the low-carbon economy.[26]

- Results from the analysis of our asset management business show a significant interest by institutional investors in companies that are contributing to the transition to a low-carbon economy, representing 20% of our 2017 low carbon total.

- Within our low-carbon book of business, there is strong representation of cleantech companies listed on the Toronto Stock Exchange Clean Tech Index, demonstrating a growing maturity of the cleantech sector.

25   Figure shows TD business breakdown of the $22 billion (CAD) total. TD's own green bond issuances are captured within our lending businesses
26   TD's own green bond issuances are captured within our lending businesses

IMPACT MEASUREMENT RESULTS

We have made a preliminary attempt to measure the impact of TD's support of the low-carbon economy through lending, finance, asset management and corporate programs and philanthropy in terms of both environmental and economic contribution. While the data requirements and methodologies required to do a full analysis of impacts are still in the early stages within the financial sector, our results provide an indication of the potential power of the low-carbon economy to help drive future prosperity.

Our 2017 low-carbon finance transactions have helped to avoid approximately 611,000 tonnes of GHGs, the majority of which come from our low-carbon energy transactions[27]. The estimated GHGs avoided are equivalent to the annual energy use of almost 70,000 North American homes[28]. From an economic perspective, we have estimated that our low-carbon financing activities have supported more than 51,000 jobs[29] and contributed approximately $8.8 billion to GDP[30], demonstrating that support of the low-carbon economy can help reduce GHG emissions AND generate economic benefit. Figure 3 shows a breakdown of jobs supported by market sector.

Figure 3: Breakdown of jobs supported by market sector[31]

55% Energy	**29%** Real Estate
13% Auto & Transportation	**3%** Sustainable Land Use
0.4% Recycling	
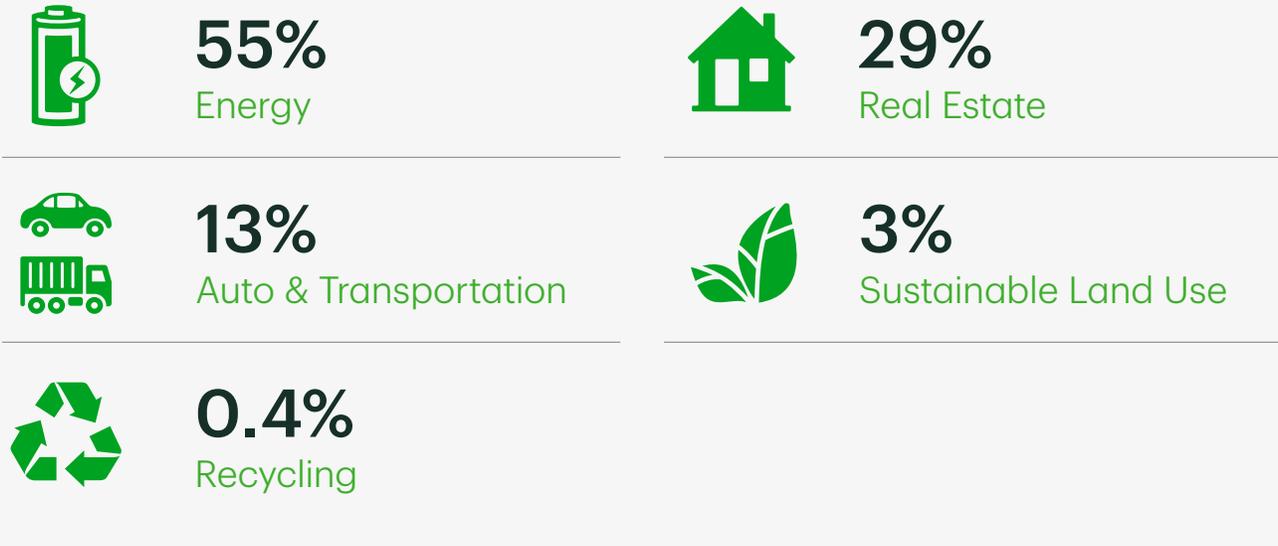
27 PwC analysis. This total only represents a portion of TD's low-carbon transactions. We have not attempted to quantify the GHGs avoided from the bank's transactions in multi-sector or the recycling and sustainable land use market sectors this year due to insufficient data.
28 https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
29 PwC analysis. Number of jobs is measured in full time equivalents (FTE).
30 PwC analysis.
31 The impact of multi-sector transactions could not be estimated using the current methodology as it relies on being able to tag an investment to a specific sector.

These preliminary economic impact results are likely to be an underestimate of our total impact since for our first year of reporting we have only assessed economic contribution to the North American economy (51% of the total low-carbon finance amount).

Of the financing that takes place in North America, we have been able to calculate avoided GHGs for 49% and economic impacts for 84% of the transactions reported. This demonstrates the need within the financial sector to collect data and develop methodologies relevant to environmental and economic impact analysis, including for example:

- Collecting additional detail on projects funded within green bond underwriting;

- Developing a generally accepted approach for attributing the GHG emissions of companies held within our asset management portfolios.

TD is participating in the three UN Environment Programme Financial Initiative (UNEP FI) Taskforce on Climate-related Financial Disclosures (TCFD)[32] pilot studies, related to lending, insurance and asset management, and it is anticipated that a methodology may be developed through these studies that would assist us in estimating this outcome area in the future.

5.0 Where Do We Go from Here?

The results for our first year represent significant progress towards our 2030 target. As we continue to work to understand and help support the transition to a low-carbon economy, we will take a balanced approach that takes into consideration the energy needs and economic realities of today while building for the future. We will share information as we progress through our annual reporting. We will review our approach on a regular basis as methodologies for identifying and reporting on the low-carbon economy continue to evolve. Most importantly, we know that the successful transition to a low-carbon economy will require the concerted efforts of governments, businesses and society, and we'll continue to collaborate with others as we work toward our common goals.

32   http://www.unepfi.org/banking/tcfd/

Disclosures

The information in this document is intended to provide general information on matters of interest to readers. Although the information contained in this document has been obtained from sources that TD believes to be reliable, TD does not guarantee its accuracy, and in certain cases, the information may be incomplete or condensed. All opinions, estimates and other information included in this document constitute TD's judgment as of the date hereof and by their very nature, are based on assumptions made on TD's part and are subject to inherent risks and uncertainties, general and specific, which could cause the information presented in this document to differ materially from that presented herein. Information may change as definitions and methodologies relating to calculating low-carbon impacts continue to evolve. TD may update the information and content included in this document at any time without notifying you, and TD has no duty to update or correct any information or content included in this document. Information, estimates, opinions and assumptions contained in this document are for informational purposes only and are not intended to provide professional advice and should not be relied upon in that regard. To the fullest extent permissible pursuant to applicable law, TD disclaims all warranties, express or implied, including but not limited to implied warranties of fitness for a particular purpose.

Appendix A – Detailed Accounting Methodology

DEVELOPING THE INCLUSION CRITERIA

We started with our Green Bond criteria[33] which include:

- Low-carbon energy sources including solar, wind, geothermal, tidal and ocean power, as well as biomass that doesn't deplete terrestrial carbon pools and hydropower that already exists in temperate zones and new development under 25MW capacity;

- Energy efficiency and management in buildings, industry and transportation, and energy distribution and storage as well as products, processes and production methods that reduce energy consumption;

- Green infrastructure and sustainable land use such as sustainable agriculture and forestry, water and waste management, conservation and pollution prevention and control.

Where the client's activities purely fall into one of the industry codes that are included in the above Green Bond criteria, then we have counted any financing commitments to them. For example, we would count clients whose operations are all described by the NAICS or SIC[34] code for the hydroelectric power generation industry.

Where industry codes alone are not sufficient to identify low-carbon economy clients, we applied additional criteria. Table A1 below gives some examples of these additional criteria by industry:

Table A1: Additional inclusion criteria for financial transactions

Client industry	Inclusion criteria
Diversified utilities	We include companies if their energy production is from 80% low-carbon sources or higher. We also include project financing where the project will connect low-carbon energy generation capacity to the grid.
Real estate	We include real estate developer clients with 80% or more of their portfolio as certified green buildings (e.g. LEED or BOMA). Similarly, if we are providing project-specific finance for a LEED or BOMA certified building then this project would be included (even if general purpose lending to the client would not count).
Autos	We include financing related to hybrid, electric, or ultra-low emissions vehicles (ULEVs)[35].
Transportation	We include financing related to urban rail or long-range passenger rail and zero- or low-emission buses.
Forestry and wood products	We include companies where 80% or more of the wood fibre that goes into their products is certified from sustainable sources (i.e. sources certified to FSC, SFI or PEFC standards[36]). We also include financing for environmental conservation projects such as those funded through TD's corporate giving programs.

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33 https://www.td.com/document/PDF/TD_Green_Bond_Framework.pdf
34 NAICS: North American Industry Classification System, SIC: Standard Industrial Classification.
35 Ultra-low emissions vehicles are defined as those that emit less than 75g of CO2/km. https://www.smmt.co.uk/industry-topics/technology-innovation/ultra-low-emission-vehicles-ulevs/
36 FSC: Forest Stewardship Council, SFI: Sustainable Forestry Initiative, PEFC: Programme for the Endorsement of Forest Certification.

ACCOUNTING CHOICES

- Much of the financing TD provides is direct, and TD is the sole provider. In other instances, TD is one of several providers of capital in a syndicate or in a group of 'book runners'[37]. In these cases, the total financing amount is apportioned by the number of providers in the group or, if possible, by the amount of financing that TD is responsible for.

- Where TD has acted as the sole advisor to a low-carbon deal or acts as a broker for green real estate, we consider TD's role to be key in the growth of the low-carbon economy and so the full financial value of the deal total. Where TD is one of several advisors, the total financing amount is apportioned by the number of advisors in the group.

- We have taken the innovative step of including our asset management business (TD Asset Management [TDAM]) in our low-carbon results. While methodologies for assessing low-carbon investments are still evolving, we believe it is important to attempt to track demand by institutional investors.

The following table explains our approach. Where a company is included, the value of assets under management as of October 31 of the year reported is stated.[38]

Table A2: Inclusion criteria for asset management business (TDAM)

Type of company	Inclusion criteria
Industry is not considered to contribute to the low-carbon economy.	Company not included.
Industry falls within the Green Bond Criteria.	Company included.
Industry does not wholly fit into the Green Bond criteria but has significant low-carbon potential.	Company included only if it achieved a CDP score of A or A-[39].
Parts of the industry can be considered low-carbon. Industry code alone is not sufficient to determine if the client is contributing to the low-carbon economy.	Company included if it fits the inclusion criteria described in Table A1 on previous page.

DEVELOPING THE IMPACT MEASUREMENT APPROACH

Impact area	Measurement approach
Greenhouse gas emissions avoided	• Applied regional electricity grid factors to measure the GHG emissions avoided by a reduction in energy use. • To estimate reduced energy consumption, we created a 'business as usual' scenario and compared this to the low-carbon alternative. For example, if TD is financing a LEED certified building we have estimated the energy consumption of the LEED building and compared it to average energy use of a building of equivalent size and purpose that is not LEED certified.
GDP and jobs supported	• Used standard economic models for Canada (provided by StatsCan) and the US (provided by IMPLAN[40]). • Direct impacts include the number of employees and the revenues of the businesses that directly receive TD's financing. • Indirect impacts arise from the activities of the businesses providing inputs to the business receiving the financing (i.e. the number of employees and revenues of the suppliers). We have not included estimates of the induced impact of our financing. Induced impacts result from consumer spending by employees of the businesses that are supported by direct and indirect expenditures.

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37 A book runner role is where TD is an underwriter in the issuance of a new equity, debt, or security.
38 Includes all holdings, not just those that were newly acquired in 2017
39 CDP: formerly Carbon Disclosure Project. A CDP score of A or A- indicates a high performance in disclosure of GHG emissions, which was used as a proxy for the environmental performance of the company. For more information on the scoring methodology see: https://www.cdp.net/en
40 For more information on IMPLAN modelling please access http://www.implan.com/