

TD's 2018 Natural Capital Valuations

Background

TD Economics¹ has defined natural capital as “the stock of natural resources (finite or renewable) and ecosystems that provide direct or indirect benefits to the economy, our society and the world around us.” Natural capital valuation allows us to understand the true costs, benefits and return on investment of planned activities.

TD has valued the natural capital impact related to reduction of greenhouse gas (GHG) emissions and airborne pollutants of four of its 2018 initiatives. These initiatives are in alignment with our Vibrant Planet driver of the Ready Commitment and its Focus Areas (Green Space and Low-Carbon Economy):

- TD Tree Days
- The Purchase of renewable energy credits (RECs) and carbon offsets
- The TD Green Bond
- TD's Low-Carbon Economy Target

Our natural capital valuations account for benefits accrued only in fiscal 2018 (November 1, 2017, to October 31, 2018), although the impact of these initiatives will span more than one year - for example, the benefits provided by many of the projects funded by the TD Green Bond will extend over a number of years.

Several facts should be kept in mind regarding the natural capital values presented here.

- There is currently no universally agreed on or formalized system for valuing natural capital. In performing our analysis, we have employed conservative assumptions. Our methodology has been reviewed by TruCost, an industry leader in analyzing natural capital impacts.
- Due to current data limitations, our natural capital valuations are based entirely on atmospheric emission benefits and exclude benefits on, for example, water resources and biodiversity.
- We use Environment Canada's estimate of the social cost of carbon. While these values are based on current, state-of-the-art models, they are still open to the criticism that they do not adequately account for certain aspects such as ocean acidification or those related to biodiversity. For other air pollutants, the marginal cost of abatement is used, rather than the social cost, as a clear consensus has not yet formed around the social costs of these pollutants.

Green Space

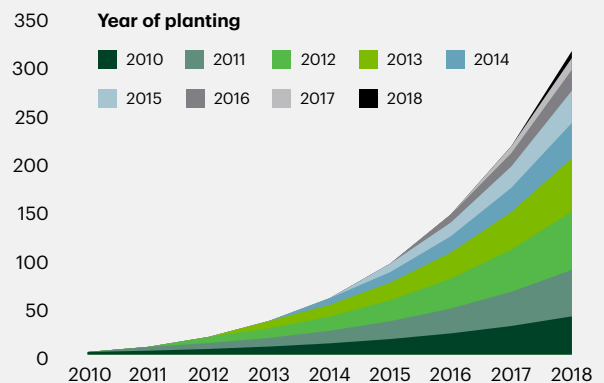
TD Tree Days

	2018	2010-2018
Carbon Captured (tonnes CO ₂ e)	314	891
Natural Capital Value (\$CAD)	\$54,635	\$144,335

2018 marked the ninth year of TD Tree Days, TD's flagship urban greening program, seeing approximately 47,900 trees and bushes planted from coast to coast. Since their start in 2010, over 392,000 trees and bushes have been planted, which continue to grow and sequester carbon. As the graphic shows, despite most plantings being saplings, significant carbon capture is already occurring, with an estimated 314 tonnes of carbon dioxide equivalent (CO₂e) sequestered in 2018, resulting in over \$54,000 in natural capital value².

TD Tree Days Led to Growing Carbon Sequestration

Annual carbon sequestration, tonnes.



Source: TD Bank Group

¹ <https://www.td.com/document/PDF/economics/special/NaturalCapital.pdf>

² Note that these figures are approximate. Figures are not based on timber-cruises or other audits; carbon sequestration is based on ¼ inch growth in diameter-at-breast height per year (1mm ring growth), per tree, with a ½" diameter typical size assumed for time of planting.



TD's 2018 Natural Capital Valuations (continued)

Low-Carbon Economy

Renewable Energy Credits and Carbon Offsets

	2018
Carbon Captured (tonnes CO ₂ e)	564,726
Natural Capital Value (\$CAD)	\$98,211,575

As a carbon neutral bank, TD purchases both renewable energy credits (RECs) and carbon offsets to account for its energy use and carbon emissions. RECs are instruments that track renewable energy, sourced from resources such as solar power and wind, and allow renewable energy to be traded globally. By purchasing RECs equivalent to 100% of TD's electricity use, we are reducing our electricity carbon footprint to zero. Carbon offsets represent greenhouse gas reductions associated with projects that reduce energy use, such as building retrofits, along with initiatives that sequester carbon, such as afforestation projects. Carbon offsets allow TD to neutralize the emissions associated with our direct energy use and travel.

RECs and carbon offsets represent the reduction of carbon dioxide, a key greenhouse gas. TD's 2018 purchase of RECs and carbon offsets resulted in a reduction of over 564,726 tonnes CO₂e^{3,4}. This reduction resulted in a matching decrease in TD's impact on natural capital throughout the United States and Canada. The natural capital value of GHG emission reductions associated with the carbon offsets and RECs TD purchased in fiscal 2018 – based on the lifetime impact the emissions would have had – is approximately \$98million.

TD Green Bond Projects

	2018
Carbon reduced or avoided (tonnes CO ₂ e)	24,337
Natural Capital Value (\$CAD)	\$4,232,379

In March 2014, TD became the first Canadian commercial bank to issue a green bond, underwriting a three-year, \$500 million issuance. In September 2017, TD issued its second green bond, a three-year, \$1 billion (USD) offering. The proceeds of these bonds were used to fund projects that provided a measurable environmental benefit, such as the construction of energy efficient buildings, solar farms, wind power developments and low impact hydroelectric facilities.

The TD Green Bonds not only provide a financial return to investors but also provide an environmental benefit – or return – to society. The value of the natural capital benefits associated with the TD Green Bonds in fiscal 2018 was approximately \$4.2 million⁴. Given that we have excluded the impact from lending for general corporate purposes, and the value of positive impacts on water and other resources, the true natural capital benefit from the TD Green Bonds is likely to be higher.

TD's Low-Carbon Economy Target

	2017-2018
Carbon reduced or avoided (tonnes CO ₂ e)	787,700
Natural Capital Value (\$CAD)	\$134,981,756

In 2017, we launched a commitment to support the transition to a low-carbon economy, anchored by a target of \$100 billion in total by 2030. Since 2017, TD directed \$30.3 billion toward support of the transition to a low-carbon economy through our lending, finance, asset management and internal corporate programs. The environmental impact of this contribution is estimated at approximately 787,700 tonnes of GHG emissions avoided (equivalent to the annual energy use of approximately 94,400 North American homes).^{5,6} From an economic perspective, our financing activities have supported more than 76,000 jobs and contributed approximately \$15.2 billion to the GDP.⁷ The natural capital value calculation for the low-carbon economy target is based on the GHGs avoided, and is inclusive of the value created by TD's Green Bond.

³ The GHG emissions quantified here represent emissions reduction specific to the offset project, or location of the REC.

⁴ FY2018 values make use of an updated methodology that more fully captures the benefit of emissions reduction projects. As such, these values are not comparable with previously published values for prior years.

⁵ PwC Analysis

⁶ <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

⁷ PwC Analysis. The Low-Carbon Economy total impact values (GHG, GDP, Jobs) are inclusive of Green Bond finance impact values. Number of jobs is measured in full time equivalents (FTE).

