

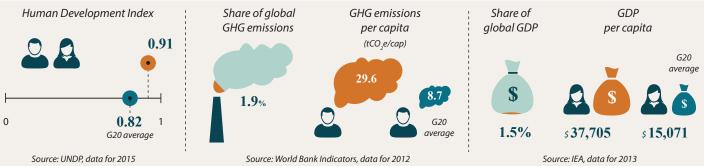
# BROWN TO GREEN: G20 TRANSITION TO A LOW CARBON ECONOMY

Canada

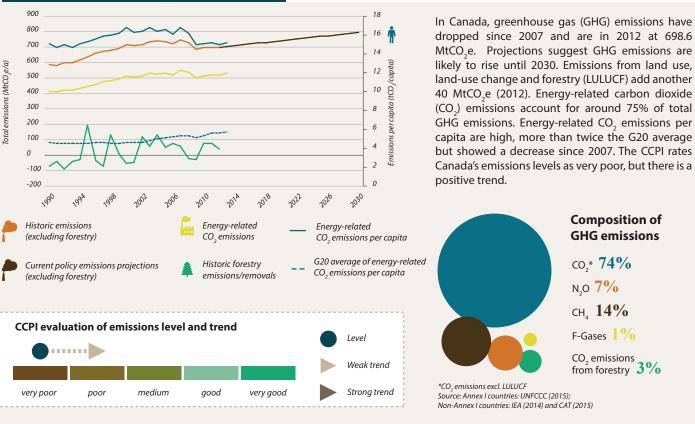
This country profile assesses Canada's past, present and indications of future performance towards a low-carbon economy by evaluating emissions, decarbonisation, climate policy performance and climate finance. The profile summarises the respective findings from, amongst others, the Climate Change Performance Index (CCPI, operated by Germanwatch and Climate Action Network Europe), the Climate Action Tracker (CAT, operated by Climate Analytics, NewClimate Institute, Ecofys and the Potsdam Institute for Climate Impact Research), and analyses from the Overseas Development Institute (ODI).



CLIMATE ACTION



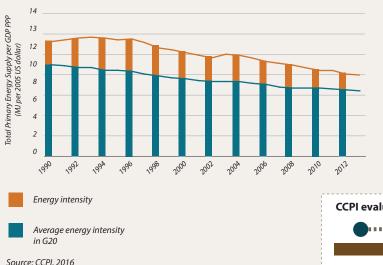
# **GREENHOUSE GAS (GHG) EMISSIONS**



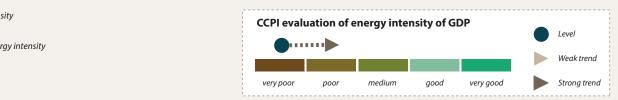
Sources: Past energy related emissions from the Climate Change Performance Index (CCPI); past non-energy and future emissions projections from the Climate Action Tracker (CAT). CCPI calculations are primary based on the most recent IEA data; CAT calculations are based on national policies and country communications.

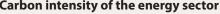
# DECARBONISATION

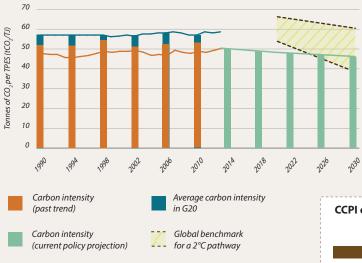
## Energy intensity of the economy



The energy intensity of Canada's economy (TPES/GDP) has declined since 1995 and fell below the G20 average in 2004. The CCPI ranks Canada's energy intensity of the economy as very poor with a positive trend.

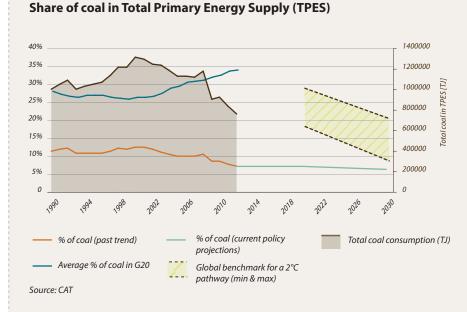






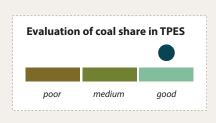
At 50.6 tCO, per TJ, the carbon intensity of Canada's energy sector (CO<sub>2</sub>/TPES) is below the G20 average. If Canada were to maintain its current amount of CO, emissions in the energy sector as projections anticipate, the curve will exceed the minimal value for the 2°C benchmark corridor in 2030. In the CCPI carbon intensity ranking, Canada finds itself in the medium category, with a worsening trend.





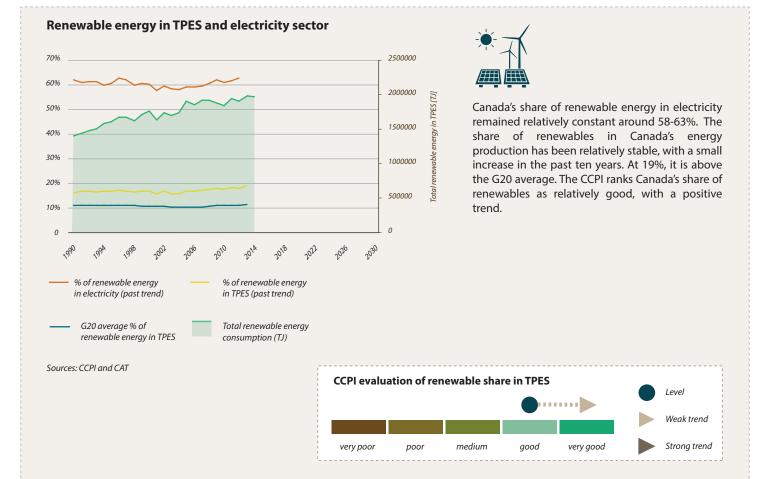


The share of coal in Canada's total primary energy supply (TPES) decreased over recent decades from 12% to7%. Projections to 2030 do not expect a new increase, so the country's share of coal will remain in line with the 2°C compatibility benchmark.



Source: own evaluation

# Carbon intensity of the energy sector

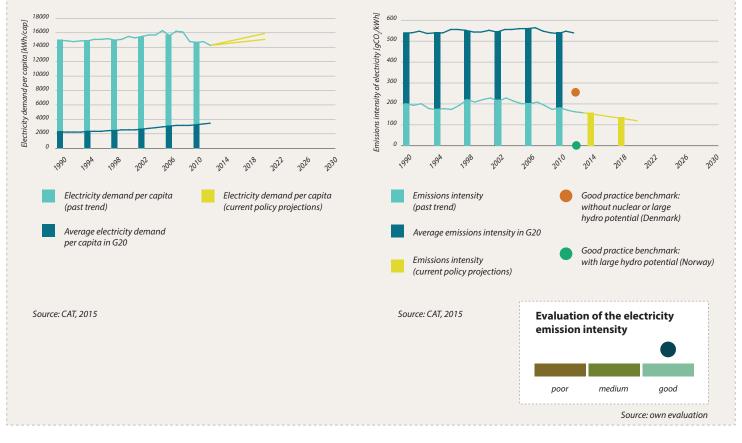


#### **Electricity demand per capita**

The electricity demand of a person living in Canada steadily increased until 2005, when the curve peaked, and has since dropped. Nevertheless, the level of electricity demand is still high compared to other G20 countries.

#### Emissions intensity of the electricity sector

The electricity emissions intensity varied over recent decades, reaching a level of close to 160  $gCO_2/kWh$  in 2013. In comparison to other G20 countries, this value is relatively low and a further decrease can be expected.



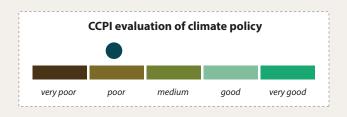
# **CLIMATE POLICY PERFORMANCE**

#### Checklist of the climate policy framework

Low emissions development plan for 2050*	$\bigotimes$
2050 GHG emissions target	$\bigcirc$
Building codes, standards and incentives for low-emissions options	$\bigcirc$
Support scheme for renewables in the power sector	$\bigcirc$
Emissions performance standards for cars	$\bigcirc$
Emissions Trading Scheme (ETS)	$\bigcirc$
Carbon tax	

\* Understood as decarbonisation plans and not specifically as the plans called for in the Paris Agreement

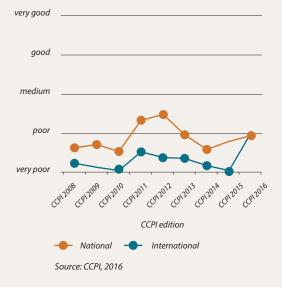
Source: Climate Policy Database, 2016



## **Climate policy evaluation by experts**

Canada has been one of the worst performers in international climate policy, leaving the Kyoto Protocol in 2011 and regularly blocking climate talks. CCPI experts note the November 2015 election of a new liberal government led to hope for more progressive policies. Overall, Canada's climate policy performance is rated poor but the CCPI gave it an improved evaluation after its constructive role in the run-up to COP-21 in Paris.

The CCPI evaluates a country's performance in national and international climate policy through feedback from national energy and climate experts.



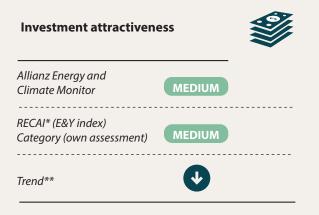
#### 900 800 700 Total emissions (MtCO,e/a) 600 500 400 300 200 Мах 100 0 . Min -100 -200 1990 2010 2030 , 9<sup>9</sup> 2010 Historic emissions Fair emissions reduction range (excluding forestry) in a 2°C pathway Emissions in INDC scenario (min & max) Current policy emissions projections (excluding forestry) Historic forestry emissions/removals **CAT evaluation of Canada's Intended National Determinded Contributions (INDC)** inadequate medium sufficient role model Source: CAT, 2015

Compatibility of national climate targets (INDCs) with a 2°C scenario

Canada submitted its Intended Nationally Determined Contribution (INDC) on 15 May 2015, outlining an economy-wide target to reduce greenhouse gas (GHG) emissions by 30% below 2005 levels in 2030. After accounting for forestry, the Climate Action Tracker (CAT) estimates that this is a reduction of 21% below 2005 levels of industrial GHG emissions, equivalent to a reduction of just 2% below 1990 industrial GHG emissions levels. According to the CAT's effort-sharing principles, this INDC is rated "inadequate". Such a rating indicates that Canada's INDC is inconsistent with various interpretations of an equitable approach to reach a 2°C pathway, meaning that if all governments showed such low ambition levels warming would likely exceed 3-4°C.

Canada's INDC confirms the inclusion of Land Use, Land Use Change and Forestry (LULUCF) accounting (based on a net-net approach) in its 2030 GHG mitigation framework. CAT estimates that net-net accounting in the LULUCF sector is likely to provide credits of 63 MtCO<sub>2</sub>e, and therefore increase the allowed level of industrial GHG emissions in 2030 by the equivalent to about 11% of Canada's 1990 industrial GHG emissions. Under current policy projections, Canada is not expected to meet its targets. In 2030, emissions are projected to increase by 35% above 1990 levels, to 798 MtCO<sub>2</sub>e.

# **FINANCING THE TRANSITION**



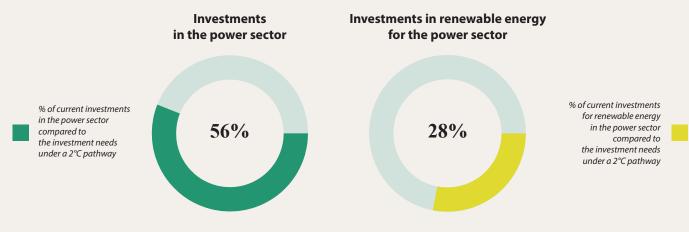
\*Adapted from RECAI and re-classified in 3 categories (low, medium, high) for comparison purposes with Allianz Monitor. \*\*Taken from RECAI issue of May 2016 Climate Transparency rates Canada's investment attractiveness as medium, due to the lack of national renewable energy targets, weak reliability of past political ambition, and a low share of non-hydro renewables in the energy mix. In general, Canada has excellent national investment conditions and has implemented several support policies to promote renewable energy (i.e. tax credits and disincentives for new fossil fuel power generation).

#### Sources: Allianz Energy and Climate Monitor and RECAI reports

The Allianz Energy & Climate Monitor ranks G20 member states on their relative fitness as potential investment destinations for building low-carbon electricity infrastructure. The investment attractiveness of a country is assessed through four categories: Policy adequacy, Policy reliability of sustained support, Market absorption capacity and the National investment conditions. The Renewable Energy Country Attractiveness Index (RECAI) produces score and rankings for countries' attractiveness based on Macro drivers, Energy market drivers and Technology-specific drivers which together compress a set of 5 drivers, 16 parameters and over 50 datasets.

#### Historical investments in renewable energy and investment gap

This section shows Canada's current investments in the overall power sector (including distribution and transmission) as well as in renewable energy expressed as the share of the total annual investments needed to be in line with a 2°C compatible trajectory.



Source: Adapted from WEIO, 2014<sup>(1)</sup>

(1) WEIO (2014) compares annual average investments from 2000 to 2013 with average annual investments needed from 2015 to 2030 under a 2°C scenario

#### **Carbon pricing mechanisms**

#### **Emissions Trading Schemes (ETS)**

An ETS caps the total level of GHG emissions and allows industries to trade allowances based on their marginal abatement cost. By creating a supply and demand for allowances, an ETS establishes a market price for GHG emissions.

#### **Carbon Tax**

A Carbon tax directly sets a price on carbon by defining a tax rate on GHG emissions or – more commonly – on the carbon content of fossil fuels. Unlike an ETS, a carbon tax is a price-based instrument that pre-defines the carbon price, but not the emissions reduction outcome of a carbon tax.

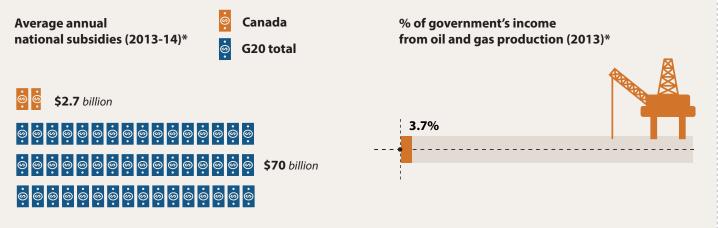
Sources: World Bank and Ecofys, 2016; other national sources

In Canada, carbon pricing has long been a key instrument for emission reductions at the sub-national level. Quebec's ETS, which covers 85% of its emissions, officially began its first compliance period in 2013. In 2015, Manitoba and Ontario also announced plans to introduce a sub-national ETS, and are currently exploring opportunities to link these systems with Quebec's ETS under the Western Climate Initiative. British Columbia introduced a carbon tax in 2008, which covers 70% of its emissions and another is planned for Alberta in 2017, which will cover 45% of its emissions.



## **Fossil fuel subsidies**

In line with its G20 commitment, Canada has initiated phasing out of a number of income tax preferences for fossil fuels between 2011 and 2013. The Accelerated Capital Cost Allowance (CCA) for oil sands, which allowed companies to deduct 100% of asset costs at an estimated revenue cost of US\$300 million, was phased out between 2011 and 2015. Several other tax exemptions for oil, gas and mining are expected to be phased out between 2016 and 2020. At the provincial level, tax breaks amount to at least US\$979 million each year, mostly for oil and natural gas exploration. Canada also provides a few budgetary transfers to producers of oil, gas and coal.



#### Source: ODI, 2015

\*The indicators above refer only to subsidies for fossil fuel production, and include direct spending (e.g. government budget expenditure on infrastructure that specifically benefits fossil fuels), tax expenditure (e.g. tax deductions for investment in drilling and mining equipment) and other support mechanisms (e.g. capacity mechanisms).

#### **Public climate finance**

Canada is the second smallest G20 contributor of climate finance. It has also made the second smallest pledge to the GCF. Canada's bilateral finance for climate-related projects - above and beyond those planned before the Copenhagen Accord - are included in its climate finance contribution. Canada's contribution includes export credits to support Canadian companies to invest in developing countries.

