ASSESSING CLIMATE PROTECTION PERFORMANCE: G20 COUNTRY PROFILE

Canada

This Country Profile assesses Canada’s past and present actions to help mitigate climate change, and its Intended Nationally Determined Contribution (INDC) towards future global action. The profile summarises the respective findings of the Climate Change Performance Index (CCPI) and Climate Action Tracker (CAT)².

COUNTRY CHARACTERISTICS

**KEY INDICATORS***

<table>
<thead>
<tr>
<th>Key Indicator</th>
<th>Canada</th>
<th>G20</th>
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<tbody>
<tr>
<td>Population [million]</td>
<td>34</td>
<td>4,587</td>
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<tr>
<td>GDP per capita (PPP) [US$]</td>
<td>37,017</td>
<td>14,505</td>
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<tr>
<td>Share of global GHG emissions</td>
<td>1.4%</td>
<td>74.2%</td>
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<tr>
<td>Share of global GDP</td>
<td>1.6%</td>
<td>80.3%</td>
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<tr>
<td>Share of global population</td>
<td>0.5%</td>
<td>64.7%</td>
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<tr>
<td>GHG per capita [t CO₂e/cap]</td>
<td>21.2</td>
<td>7.2</td>
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<tr>
<td>Energy intensity of the economy (TPES/GDP [MJ/US$])</td>
<td>8.3</td>
<td>6.6</td>
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<tr>
<td>Carbon intensity of energy supply (CO₂/TPES [t CO₂/TJ])</td>
<td>50.8</td>
<td>63.1</td>
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<tr>
<td>Carbon intensity of the economy (CO₂/GDP [kg CO₂/US$])</td>
<td>0.41</td>
<td>0.42</td>
</tr>
<tr>
<td>Share of fossil fuels in primary energy supply</td>
<td>73.4%</td>
<td>83.4%</td>
</tr>
<tr>
<td>Share of coal in electricity production</td>
<td>10.0%</td>
<td>35.7%</td>
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<tr>
<td>Share of renewables in primary energy supply</td>
<td>18.3%</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

*year 2012 (unless stated otherwise)

GDP = gross domestic product
GHG = greenhouse gas emissions (net emissions including sinks from agriculture, forestry, and other land uses)
TPES = total primary energy supply
PPP = purchasing power parity in prices of 2005

EMISSIONS AND EMISSIONS TRENDS

**COMPOSITION OF GHG – CANADA 2012**

- F-Gases
- N₂O
- CH₄
- CO₂ from LULUCF
- CO₂ excl. LULUCF* from Energy & Industry
- **including LULUCF**

Total: 739 Mt

**ENERGY-RELATED CO₂-EMISSIONS – CANADA**

Source: UNFCCC 2015

Source: IEA 2014
In Canada, carbon dioxide (CO₂) accounts for three quarters of greenhouse gas (GHG) emissions. Both total energy-related CO₂ emissions and per capita CO₂ emissions are at a high level, compared with other countries. Per capita emissions are more than double the G20 average. On a positive note, both indicators have fallen slightly compared with 2007 levels. Canada's emission level is ranked very poor by the CCPI, in comparison with other G20 countries. There is a weak trend towards lower emissions in the last five years.

**CCPI EVALUATION OF CANADA’S EMISSIONS**

![CCPI Evaluation of Canada's Emissions](source: CCPI 2015)

Decarbonisation of the global economy will be a crucial element for staying below the 2°C threshold. Two important steps towards achieving such decarbonisation are a shift from fossil fuels to renewable energy sources, and a reduction in carbon and energy intensity.

**RENEWABLE ENERGY**

**RENEWABLE ENERGIES IN CANADA**

![Renewable Energies in Canada](source: IEA 2014)

Total annual renewable energy production has increased gradually over the past several decades. The share of renewables has been relatively stable, with a small increase in the past decade. Canada is ranked as a medium performer with a slightly positive trend.

**CCPI EVALUATION OF CANADA’S RENEWABLE ENERGY**

![CCPI Evaluation of Canada's Renewable Energy](source: CCPI 2015)

The measurement of carbon and energy intensity uses macroeconomic data. A country’s progress towards decarbonisation is indicated by decoupling of its GDP growth from growth in carbon and energy intensity. The latter are measured as CO₂ emissions per unit of Primary Energy Supply (CO₂/TPES) and Primary Energy Supply per unit of GDP (TPES/GDP) respectively.

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**ii** Climate Change Performance Index is jointly published by Germanwatch and Climate Action Network Europe, a coalition of over 120 member organizations. The Index is 80% based on objective indicators of emissions trend and level, renewable energies and energy efficiency and 20% on national and international climate policy assessments by more than 300 experts from the respective countries. www.germanwatch.org/en/ccpi

**iii** Another indicator is energy efficiency. However, energy efficiency is complex to measure, requiring a sector by sector analysis, where comparable data sources across G20 countries are not available at present.
There have not been visible changes in the carbon intensity of Canada's energy supply (CO₂/TPES). Since 1992, the indicator has remained at a level of about 50 tonnes of CO₂ per terajoule (TJ), which is just below the G20 average. The energy intensity of the economy (TPES/GDP) is declining in line with the G20 average. Canada's energy and carbon intensity is ranked as poor with a slightly positive trend.

Canada's climate policy performance on both the national and international levels is ranked as very poor to poor by the CCPI country experts. Canada left the Kyoto Protocol in 2011. In the following years, there have been no positive developments. Performance at the national level is slightly better, but still ranges between poor and very poor. Positive developments can be observed on a regional level.
Canada submitted its Intended Nationally Determined Contribution (INDC) on 15 May 2015, communicating 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. That is equivalent to a reduction of just 2% below 1990 industrial GHG emissions levels. According to the effort-sharing principles considered in the CAT methodology, this INDC is rated "inadequate". Such a rating indicates that Canada's INDC is not consistent 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 Mt CO₂e, and therefore increase the allowed level of industrial GHG emissions in 2030 by an amount equivalent to about 11% of 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 Mt CO₂e.