

## British Columbia Global Warming Potential Updates

British Columbia has updated the global warming potentials that it uses for:

- the [Emission Offsets Regulation](#),
- the [Carbon Neutral Government Regulation](#),
- the [Reporting Regulation](#),
- the [Renewable and Low Carbon Fuel Requirements Regulation](#), as well as
- the [Provincial Greenhouse Gas Inventory Report](#).

Updates will take effect:

- For Carbon Neutral Government and Reporting Regulation 2014 calendar year emissions reports due in 2015,
- For the Emission Offsets Regulation for project reports completed on or after January 1, 2015, and;
- The Provincial Greenhouse Gas Inventory Report will use the updated global warming potentials starting with the 1990-2013 inventory report tables due in 2015.

What are the updates to the global warming potentials?

- The updates to the GWPs (in CO<sub>2</sub>-equivalent, where CO<sub>2</sub> is equal to 1) are located on the second page of this document.

Why are global warming potentials needed?

- Each greenhouse gas has a unique long-term heat-trapping potential. Global warming potentials allow the comparison of inherent capacity of each greenhouse gas to trap heat in the atmosphere relative to that of carbon dioxide (CO<sub>2</sub>).

Why are global warming potentials being updated?

- The updates to British Columbia's global warming potentials are in parallel with updates made by the United Nations Framework Convention on Climate Change and the Canadian federal government, to GWPs approved by the Intergovernmental Panel on Climate Change (IPCC) [4th Assessment Report](#). The GWP values previously used were those from IPCC's 2<sup>nd</sup> Assessment Report.

How do the updates impact total provincial emissions?

- The revised GWPs retroactively increase B.C.'s CO<sub>2</sub>-equivalent emissions by about 3% (or 1.8 megatonnes) applied for each year from 1990 and onwards, including 2007 (the base year for legislated targets). This means that there is no significant effect on B.C.'s legislated targets.

<b>Column 1 Item</b>	<b>Column 2 Specified Gas</b>	<b>Column 3 Chemical Formula</b>	<b>OLD GWPs Column 4 Global Warming Potential (100 year time horizon)</b>	<b>NEW GWPs Column 4 Global Warming Potential (100 year time horizon)</b>
1	Carbon dioxide	CO <sub>2</sub>	1	<b>1</b>
2	Methane	CH <sub>4</sub>	21	<b>25</b>
3	Nitrous oxide	N <sub>2</sub> O	310	<b>298</b>
4	HFC-23	CHF <sub>3</sub>	11 700	<b>14 800</b>
5	HFC-32	CH <sub>2</sub> F <sub>2</sub>	650	<b>675</b>
6	HFC-41	CH <sub>3</sub> F	150	<b>92</b>
7	HFC-43-10mee	C <sub>5</sub> H <sub>2</sub> F <sub>10</sub>	1 300	<b>1 640</b>
8	HFC-125	C <sub>2</sub> HF <sub>5</sub>	2 800	<b>3 500</b>
9	HFC-134	C <sub>2</sub> H <sub>2</sub> F <sub>4</sub> (CHF <sub>2</sub> CHF <sub>2</sub> )	1 000	<b>1 100</b>
10	HFC-134a	C <sub>2</sub> H <sub>2</sub> F <sub>4</sub> (CH <sub>2</sub> FCF <sub>3</sub> )	1 300	<b>1 430</b>
11	HFC-143	C <sub>2</sub> H <sub>3</sub> F <sub>3</sub> (CHF <sub>2</sub> CH <sub>2</sub> F)	300	<b>353</b>
12	HFC-143a	C <sub>2</sub> H <sub>3</sub> F <sub>3</sub> (CF <sub>3</sub> CH <sub>3</sub> )	3 800	<b>4 470</b>
13	HFC-152a	C <sub>2</sub> H <sub>4</sub> F <sub>2</sub> (CH <sub>3</sub> CHF <sub>2</sub> )	140	<b>124</b>
14	HFC-227ea	C <sub>3</sub> HF <sub>7</sub>	2 900	<b>3 220</b>
15	HFC-236fa	C <sub>3</sub> H <sub>2</sub> F <sub>6</sub>	6 300	<b>9 810</b>
16	HFC-245ca	C <sub>3</sub> H <sub>3</sub> F <sub>5</sub>	560	<b>693</b>
17	Perfluoromethane	CF <sub>4</sub>	6 500	<b>7 390</b>
18	Perfluoroethane	C <sub>2</sub> F <sub>6</sub>	9 200	<b>12 200</b>
19	Perfluoropropane	C <sub>3</sub> F <sub>8</sub>	7 000	<b>8 830</b>
20	Perfluorobutane	C <sub>4</sub> F <sub>10</sub>	7 000	<b>8 860</b>
21	Perfluorocyclobutane	c-C <sub>4</sub> F <sub>8</sub>	8 700	<b>10 300</b>
22	Perfluoropentane	C <sub>5</sub> F <sub>12</sub>	7 500	<b>9 160</b>
23	Perfluorohexane	C <sub>6</sub> F <sub>14</sub>	7 400	<b>9 300</b>
24	Sulphur hexafluoride	SF <sub>6</sub>	23 900	<b>22 800</b>