

**Senate Standing Committee on Environment and Communications  
Legislation Committee**

Answers to questions on notice  
**Environment and Energy portfolio**

**Question No:** 125  
**Hearing:** Additional Estimates  
**Outcome:** Outcome 2  
**Program:** Domestic Emissions Reduction Division (DERD)  
**Topic:** Carbon dioxide  
**Hansard Page:**  
**Question Date:** 2 March 2017  
**Question Type:** Written

**Senator Roberts asked:**

How can carbon dioxide be a pollutant when all life on earth depends on it?

**Answer:**

Carbon dioxide is considered a pollutant when the concentration in the atmosphere results in unintended harm or adverse changes to the functioning of biological processes or the Earth's climate system. The current global concentration of carbon dioxide is over 400 parts per million (ppm), which is much greater than the natural range of the last 800,000 years of between 172 and 300 ppm. Most of this increase is attributed to human activity.

While many pollutants occur naturally, it is not until they reach a certain level of concentration that they are considered harmful. The harmful impacts of increases in carbon dioxide are already being observed, including warming of the Earth's climate system and increasing acidity of the oceans.

Carbon dioxide is only one of the greenhouse gases. The gases that are collectively known as greenhouse gases and reportable in the national greenhouse gas inventory are:

- carbon dioxide, CO<sub>2</sub>
- methane, CH<sub>4</sub>
- nitrous oxide, N<sub>2</sub>O
- hydrofluorocarbons, HFC-23, HFC-32, HFC-41, HFC-43-10mee, HFC-125, HFC-134, HFC-134a, HFC-143, HFC-143a, HFC-152, HFC-152a, HFC-161, HFC-227ea, HFC-236cb, HFC-236ea, HFC-236fa, HFC-245ca, HFC-245fa, HFC-365mfc
- perfluorocarbons, CF<sub>4</sub>, C<sub>2</sub>F<sub>6</sub>, C<sub>3</sub>F<sub>8</sub>, C<sub>4</sub>F<sub>10</sub>, C-C<sub>4</sub>F<sub>8</sub>, C<sub>5</sub>F<sub>12</sub>, C<sub>6</sub>F<sub>14</sub>, C<sub>10</sub>F<sub>18</sub>, C-C<sub>3</sub>F<sub>6</sub>
- sulphur hexafluoride, SF<sub>6</sub>
- nitrogen trifluoride, NF<sub>3</sub>