

## Where do greenhouse gases come from?

Origin, potency, and lifetime of the most important greenhouse gases are compiled here.

### **CO<sub>2</sub> (carbon dioxide)**

- Burning of fossil fuels, but also clearing of forests to obtain agricultural land
- Relative potency is 1 (CO<sub>2</sub> is the benchmark for the other gases)
- Lifetime up to 100 years, removed only by regrowing corresponding amounts of plants

### **CH<sub>4</sub> (methane)**

- From agriculture through livestock farming (ruminants, like cattle) and rice cultivation (anaerobic bacteria in the water), but also from the thawing of permafrost soils
- Potency: 21 times more potent than CO<sub>2</sub>
- Lifetime approximately 12 years

### **N<sub>2</sub>O (nitrous oxide)**

- From agriculture through livestock farming (slurry) and nitrogen-based fertilization
- Potency: 310 times more potent than CO<sub>2</sub>
- Lifetime approximately 120 years

### **C<sub>x</sub>H<sub>y</sub>Hal<sub>z</sub> (chlorofluorocarbons)**

- Solvents, propellants (aerosol cans), refrigerants (air conditioners, refrigerators, etc.)
- Potency: up to 11,000 times more potent than CO<sub>2</sub>
- Lifetime up to 50,000 years

### **SF<sub>6</sub> (sulfur hexafluoride)**

- As arc-quenching agent in high-voltage switches
- Potency: approximately 24,000 times more potent than CO<sub>2</sub>
- Lifetime approximately 3,200 years