



This tool calculates the CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O emissions from the combustion of fuels in boilers, furnaces and other stationary combustion equipment. It can be used by organizations from any sector.

Most of the time, you need only supply information on the type and amount of fuel burnt, as well as the industry sector. Emissions are then automatically calculated using default emission factors, chosen to reflect this information. You must select a sector before the CH<sub>4</sub> and N<sub>2</sub>O emissions can be calculated.



#### Changing the tool

The tool works as is. If you have more specific information, you can supply custom emission factors or change the default global warming potentials on the Settings page.

Other tools can be downloaded from the GHG Protocol website

**GHG Protocol Guide to Definitions**

This tool implements emission factors specific to many different types of fuels and sectors. To help you understand which emission factors most closely meet your needs, browse our definitions for our fuels and sectors:

**Fuels:**

Please select a fuel:

Gas works gas covers all types of gases produced in public utility or private plants, whose main purpose is manufacture, transport and distribution of gas. It includes gas produced by carbonization (including gas produced by coke ovens and transferred to gas works gas), by total gasification with or without enrichment with oil products (LPG, residual fuel oil, etc.), and by reforming and simple mixing of gases and/or air. It excludes blended natural gas, which is usually distributed through the natural gas grid.

**Sectors:**

Please select a sector:

Fuel extraction or energy-producing industries. Examples include public utilities and petroleum refineries, as well as industries that generate secondary and tertiary products, such as charcoal, from solid fuels.

(Source: IPCC 2006 Guidelines for National Greenhouse Gas Inventories)



#### Unit conversions

While this tool automatically converts data amongst different measurement units, it does not cover all possible units. To perform other conversions, the online tool at [www.onlineconversion.com](http://www.onlineconversion.com) may be helpful.



#### A note on heating values

Heating (or calorific) values are important if you input fuel consumption data using energy units (e.g., GJ or mmBtu of fuel burnt). Heating values measure the energy content of fuels and are expressed using either Higher Heating Values (HHVs; also known as Gross Calorific Values) or Lower Heating Values (LHVs; also known as Net Calorific Values). As a general rule, HHVs are used in Canada and the USA, and LHVs are used elsewhere; however, exceptions to this rule may occur. Before emissions can be calculated properly, the fuel consumption data and corresponding emission factors must be expressed in the same way - either on a HHV basis or on an LHV basis, but not both. So, you will be asked to indicate the heating value basis that underlies any energy data you supply. This will not happen when you supply fuel use data on a mass or volume basis.

#### Acknowledgements:

The emission factors used in this tool come from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.



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While the worksheets are largely self explanatory, for questions or suggestions on its contents, please contact the GHG Protocol at: [ghgquestions@wri.org](mailto:ghgquestions@wri.org)



User supplied data							GHG emissions (tonnes)			
Source ID	Sector	Fuel type (e.g., solid fossil)	Fuel	Amount of fuel	Units (e.g., kg or kWh)	Heating value basis	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	All GHGs (tonnes CO <sub>2</sub> e)
Smug Swea	Manufacturing	Liquid fossil	Gas/Diesel oil	33200	litres (l)		88.860	3.598E-03	7.195E-04	89.151
Smug Swea	Manufacturing	Gaseous fossil	Natural gas	224059.27	metre3		422.343	7.528E-03	7.528E-04	422.753
Total GHG emissions from fossil fuels (tonnes CO <sub>2</sub> e):										511.904
Total CO <sub>2</sub> emissions from biomass (tonnes):										0.000



## Revision History

Version	Revision Date	Updated By	Description
4.0	January 1, 2008	GHG Protocol	Initial release
4.1	May 18, 2015	GHG Protocol	Added GWP values from IPCC's Fifth Assessment Report