

## Relative forcings of various GHGs, from Myhre 1998

Table 1. Global-Mean Instantaneous Clear Sky Radiative Forcing Due to Changes in the Mixing Ratios of Several Greenhouse Gases from Pre-Industrial to Present Conditions

	LBL	NBM	BBM	avg	pct
CO2	1.75900	1.79000	1.80000	1.78300	59.62%
CH4	0.62500	0.70200	0.65100	0.65933	22.05%
N2O	0.15000	0.16000	0.15400	0.15467	5.17%
CFC-11	0.08860	0.09110	0.08710	0.08893	2.97%
CFC-12	0.20400	0.19600	0.21100	0.20367	6.81%
CFC-13	0.00140		0.00140	0.00140	0.05%
CFC-113	0.03380		0.03280	0.03330	1.11%
CFC-114	0.00780		0.00820	0.00800	0.27%
CFC-115	0.00230		0.00240	0.00235	0.08%
HCFC-22	0.02300		0.02410	0.02355	0.79%
CCl4	0.02230		0.02350	0.02290	0.77%
CF4	0.00710		0.00770	0.00740	0.25%
SF6	0.00210		0.00220	0.00215	0.07%
<b>sum:</b>	2.92640	2.93910	3.00540	2.99065	100.00%

Table 2. Global-Mean Adjusted Cloudy Sky Radiative Forcing

	NBM	NBM_altered	BBM	avg	pct
CO2	1.37000	1.31300	1.32200	1.33500	57.14%
CH4	0.57800	0.57800	0.50000	0.55200	23.63%
N2O	0.13400	0.13000	0.11900	0.12767	5.46%
CFC-11	0.07570	0.06920	0.06460	0.06983	2.99%
CFC-12	0.16400	0.17100	0.16200	0.16567	7.09%
CFC-13			0.00110	0.00110	0.05%
CFC-113			0.02490	0.02490	1.07%
CFC-114			0.00630	0.00630	0.27%
CFC-115			0.00180	0.00180	0.08%
HCFC-22			0.01860	0.01860	0.80%
CCl4			0.01730	0.01730	0.74%
CH3CCl3			0.00700	0.00700	0.30%
CF4			0.00670	0.00670	0.29%
C2F6			0.00080	0.00080	0.03%
SF6			0.00160	0.00160	0.07%
<b>sum:</b>	2.32170	2.26120	2.25370	2.33627	100.00%
TOT			2.24700		

Source: <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/98GL01908>

Excerpt: [https://sealevel.info/Myhre1997\\_Tables\\_1\\_and\\_2.png](https://sealevel.info/Myhre1997_Tables_1_and_2.png)

**Table 1.** Global-Mean Instantaneous Clear Sky Radiative Forcing (in  $\text{Wm}^{-2}$ ) Due to Changes in the Mixing Ratios of Several Greenhouse Gases from Pre-Industrial to Present Conditions

	LBL	NBM	BBM
CO <sub>2</sub>	1.759	1.790 (1.8)	1.800 (2.3)
CH <sub>4</sub>	0.625	0.702 (12.4)	0.651 (4.2)
N <sub>2</sub> O	0.150	0.160 (6.1)	0.154 (2.6)
CFC-11	0.0886	0.0911 (2.8)	0.0871 (-1.7)
CFC-12	0.204	0.196 (-3.7)	0.211 (3.6)
CFC-13	0.0014		0.0014 (-1.6)
CFC-113	0.0338		0.0328 (-3.0)
CFC-114	0.0078		0.0082 (5.1)
CFC-115	0.0023		0.0024 (4.6)
HCFC-22	0.0230		0.0241 (4.8)
CCl <sub>4</sub>	0.0223		0.0235 (5.4)
CF <sub>4</sub>	0.0071		0.0077 (7.7)
SF <sub>6</sub>	0.0021		0.0022 (1.4)

Relative differences, in %, for the NBM and BBM results relative to the LBL results. The mixing ratios of the WMGG are taken from *IPCC* [1995] and are assumed to be constant throughout the atmosphere.

**Table 2.** Radiative Forcing

CO <sub>2</sub>
CH <sub>4</sub>
N <sub>2</sub> O
CFC-11
CFC-12
CFC-13
CFC-113
CFC-114
CFC-115
HCFC-22
CCl <sub>4</sub>
CH <sub>3</sub> CCl <sub>3</sub>
CF <sub>4</sub>
C <sub>2</sub> F <sub>6</sub>
SF <sub>6</sub>
TOT

Changes in the global-mean instantaneous clear sky radiative forcing due to changes in the mixing ratios of the WMGG from pre-industrial to present conditions. The 'alt' column shows the altered radiative forcing due to changes in the mixing ratios of the WMGG from pre-industrial to present conditions. The 'NBM' column shows the radiative forcing due to changes in the mixing ratios of the WMGG from pre-industrial to present conditions, based on the NBM model. The 'BBM' column shows the radiative forcing due to changes in the mixing ratios of the WMGG from pre-industrial to present conditions, based on the BBM model. The 'TOT' column shows the total radiative forcing due to changes in the mixing ratios of the WMGG from pre-industrial to present conditions. The values in parentheses are relative differences, in %, for the NBM and BBM results relative to the LBL results.

2L MIXED GREENHOUSE GASES

Global-Mean Adjusted Cloudy Sky Radiating (in  $\text{Wm}^{-2}$ )

	NBM	NBM altered	BBM
	1.370	1.313 (-4.2)	1.322 (0.7)
	0.578	0.578 (-0.1)	0.500 (-13.5)
	0.134	0.130 (-2.5)	0.119 (-8.7)
	0.0757	0.0692 (-8.6)	0.0646 (-6.6)
	0.164	0.171 (4.3)	0.162 (-5.3)
			0.0011
1			0.0249
1			0.0063
1			0.0018
2			0.0186
			0.0173
3			0.0070
			0.0067
			0.0008
			0.0016
			2.247

s in the concentrations of the WMGG are as in NBM altered and BBM results include stratosphere of the WMGG.

altered NBM' has been adjusted for the effects of absorption by  $\text{CO}_2$ , decay of the gases in the stratosphere, and the  $\text{CFC-12}$  absorption band strength from HITRAN-96 on results from the BBM. Relative differences, given for the altered NBM results relative to the NBM results and for the BBM results relative to the NBM results.