**Chevron, USA**

**Entity emissions from combustion, venting, flaring, and fugitive methane**

**Entity emi**

Richard Heede
Climate Accountability Institute
7-Jul-19

|  | | Emission factors | 1850s | | | | | | | | | | 1860s | | | | | | | | | | 1870s | | | | | | | | | | 1880s | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | | | 1850 | 1851 | 1852 | 1853 | 1854 | 1855 | 1856 | 1857 | 1858 | 1859 | 1860 | 1861 | 1862 | 1863 | 1864 | 1865 | 1866 | 1867 | 1868 | 1869 | 1870 | 1871 | 1872 | 1873 | 1874 | 1875 | 1876 | 1877 | 1878 | 1879 | 1880 | 1881 | 1882 | 1883 | 1884 |
| **Entity CO2 emissions** | | kg CO2/tCO2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Oil & NGLs | MtCO2 linked | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Natural Gas | MtCO2 linked | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coal | MtCO2 linked | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Combustion total | MtCO2 sum | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Oil & NGLs: Venting | MtCO2 calculated | 3.83 linked | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Oil & NGLs: Flaring | MtCO2 calculated | 15.94 linked | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Own fuel use | MtCO2 calculated | 57.26 linked | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Natural Gas: Venting | MtCO2 calculated | 28.53 linked | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Natural Gas: Flaring | MtCO2 calculated | 1.74 linked | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Venting & Flaring total | MtCO2 sum | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Cement | MtCO2 linked | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total CO2 emissions | MtCO2 sum | row 18+24+26 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Entity methane emissions** | | kg CH4/tCO2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Methane: Oil & NGLs | MtCH4 calculated | 1.92 linked | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Methane: Natural Gas | MtCH4 calculated | 9.88 linked | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Methane: Coal | MtCH4 calculated | 4.03 linked | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total methane emissions | MtCH4 sum | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Entity methane emissions** | | GWP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Methane: Oil & NGLs | MtCO2e calculated | 28 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Methane: Natural Gas | MtCO2e calculated | 28 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Methane: Coal | MtCO2e calculated | 28 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total methane emissions | MtCO2e sum | (per IPCC AR5) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Total attributed emissions** | MtCO2e sum | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **CDIAC CO2 emissions** | MtCO2 Converted to CO2: | 4,595 | 198 | 198 | 209 | 216 | 253 | 260 | 278 | 282 | 286 | 304 | 333 | 348 | 352 | 377 | 410 | 436 | 447 | 476 | 491 | 520 | 539 | 575 | 638 | 674 | 638 | 689 | 700 | 711 | 718 | 769 | 865 | 890 | 938 | 997 | 1,008 |
| Oil, Natural Gas, Coal, Flaring, & Cement | Mt Carbon Sum 1751-1849: | 1,254 | 54 | 54 | 57 | 59 | 69 | 71 | 76 | 77 | 78 | 83 | 91 | 95 | 96 | 103 | 112 | 119 | 122 | 130 | 134 | 142 | 147 | 157 | 174 | 184 | 174 | 188 | 191 | 194 | 196 | 210 | 236 | 243 | 256 | 272 | 275 |
| Entity percent of total CO2 emissions | Percent | | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| **CDIAC/EDGAR methane** | Tg CH4 (MtCH4) | | | | | | | | | | | | 2.22 | 2.35 | 2.34 | 2.51 | 2.73 | 2.89 | 3.04 | 3.26 | 3.22 | 3.34 | 3.41 | 3.80 | 4.13 | 4.41 | 4.3 | 4.4 | 4.5 | 4.6 | 4.6 | 4.8 | 5.3 | 5.7 | 6.1 | 6.5 | 6.5 |
| Entity percent of total methane emissions | Percent | | | | | | | | | | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Stern, D.I., & R.K. Kaufmann (1998) "Annual Estimates of Global Anthropogenic Methane Emissions: 1860-1994," in Trends Online: A Compendium of Data on Global Change, CDIAC, ONRL, http://cdiac.esd.ornl.gov/trends/meth/ch4.htm#flaring.

European Commission's Joint Research Centre (2011) "Global Emissions EDGAR v4.2: Methane Emissions," Emission Database for Global Atmospheric Research (EDGAR), Nov11; edgar.jrc.ec.europa.eu/overview.php?v=42

ssions from combustion, venting, flaring, and fugitive methane

Entity emissions from combustion, venting, flaring, and fugiti

Richard Heede
Climate Accountability Institute
7-Jul-19

Richard Heede
Climate Accountability Institute
7-Jul-19

**Chevron, USA**

| | 1890s | | | | | | | | | | 1900s | | | | | | 1900s | | | 1910s | | | | | | | | | 1920s | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1885 | 1886 | 1887 | 1888 | 1889 | 1890 | 1891 | 1892 | 1893 | 1894 | 1895 | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 |

Row 15: 1912–1925: 2.1, 2.0, 2.4, 1.6, 1.5, 1.2, 1.3, 1.2, 1.5, 1.6, 3.0, 6, 6, 5

Row 18: 1885–1909: – ; 1912–1925: 2, 2, 2, 2, 1, 1, 1, 1, 1, 2, 3, 6, 6, 5

Row 20: 1912–1925: 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

Row 21: 1912–1925: 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

Row 25: 1912–1925: 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

Row 29: 1912–1925: 2, 2, 2, 2, 1, 1, 1, 1, 2, 2, 3, 7, 6, 5

Row 33: 1912–1925: 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

Row 36: 1912–1925: 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

Row 39: 1912–1925: 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

Row 42: 1912–1925: 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

Row 45: 1912–1925: 2, 2, 3, 2, 2, 1, 1, 1, 2, 2, 3, 7, 6, 6

Row 48: 1,019 | 1,033 | 1,081 | 1,198 | 1,198 | 1,304 | 1,359 | 1,370 | 1,356 | 1,403 | 1,488 | 1,535 | 1,612 | 1,700 | 1,861 | 1,957 | 2,026 | 2,074 | 2,261 | 2,286 | 2,433 | 2,594 | 2,869 | 2,744 | 2,876 | 3,001 | 3,060 | 3,221 | 3,459 | 3,115 | 3,071 | 3,298 | 3,503 | 3,430 | 2,953 | 3,415 | 2,942 | 3,096 | 3,554 | 3,525 | 3,573

Row 49: 278 | 282 | 295 | 327 | 327 | 356 | 371 | 374 | 370 | 383 | 406 | 419 | 440 | 464 | 508 | 534 | 553 | 566 | 617 | 624 | 664 | 708 | 783 | 749 | 785 | 819 | 835 | 879 | 944 | 850 | 838 | 900 | 956 | 936 | 806 | 932 | 803 | 845 | 970 | 962 | 975

Row 51: 1885–1911: 0.00% ; 1912–1925: 0.07%, 0.06%, 0.08%, 0.05%, 0.05%, 0.04%, 0.04%, 0.04%, 0.04%, 0.05%, 0.10%, 0.19%, 0.16%, 0.15%

Row 54: 6.4 | 6.4 | 6.8 | 7.4 | 7.5 | 8.0 | 8.3 | 8.4 | 8.2 | 8.5 | 9.0 | 9.3 | 9.7 | 10.2 | 11.2 | 11.8 | 12.1 | 12.4 | 13.6 | 13.7 | 14.4 | 15.5 | 17.1 | 16.3 | 17.0 | 17.8 | 18.1 | 19.1 | 20.4 | 18.4 | 18.1 | 19.5 | 20.6 | 20.3 | 17.9 | 20.6 | 17.7 | 19.0 | 21.3 | 21.1 | 21.2

Row 56: 1885–1911: – ; 1912–1925: 0.00, 0.00, 0.00, 0.00, 0.00, 0.00, 0.00, 0.00, 0.00, 0.00, 0.00, 0.00, 0.00, 0.00

| | CE | CF | CG | CH | CI | CJ | CK | CL | CM | CN | CO | CP | CQ | CR | CS | CT | CU | CV | CW | CX | CY | CZ | DA | DB | DC | DD | DE | DF | DG | DH | DI | DJ | DK | DL | DM | DN | DO | DP | DQ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

**ve methane** — **Entity emissions from combustion, venting, flaring, and fugitive methane**

Richard Heede
Climate Accountability Institute
7-Jul-19

**Chevron, USA**  **Chevron, USA**

| Decade | | | | 1930s | | | | 1930s | | | | 1940s | | | | | 1950s | | | | | | | 1960s | |

| Year | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 20 | 20 | 21 | 24 | 38 | 36 | 37 | 37 | 39 | 45 | 49 | 78 | 89 | 93 | 103 | 103 | 97 | 114 | 141 | 155 | 167 | 178 | 202 | 202 | 241 | 290 | 309 | 325 | 339 | 377 | 412 | 456 | 477 | 506 | 556 | 607 | 661 | 700 | 737 |
| 16 | | | | | | | | | | 0.8 | 1.5 | 2.8 | 3.7 | 4.0 | 8.2 | 11 | 10 | 11 | 13 | 14 | 14 | 16 | 20 | 21 | 26 | 29 | 31 | 38 | 45 | 55 | 59 | 67 | 73 | 81 | 93 | 102 | 113 | 122 | 134 |
| 18 | 20 | 20 | 21 | 24 | 38 | 36 | 37 | 37 | 39 | 46 | 50 | 80 | 93 | 97 | 111 | 114 | 107 | 126 | 154 | 169 | 182 | 195 | 222 | 223 | 267 | 319 | 341 | 362 | 384 | 432 | 472 | 523 | 550 | 587 | 649 | 709 | 774 | 821 | 871 |
| 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| 21 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 5 | 6 | 7 | 7 | 8 | 8 | 9 | 10 | 11 | 11 | 12 |
| 22 | - | - | - | - | - | - | - | - | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 |
| 23 | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 0 | 0 | 4 |
| 24 | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 15 | 16 | 17 | 19 | 21 | 23 | 25 | 26 |
| 29 | 20 | 21 | 21 | 25 | 39 | 36 | 37 | 38 | 40 | 47 | 51 | 82 | 95 | 99 | 113 | 117 | 109 | 129 | 158 | 173 | 186 | 200 | 227 | 229 | 274 | 328 | 350 | 372 | 395 | 444 | 485 | 537 | 566 | 605 | 668 | 730 | 797 | 846 | 897 |
| 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 34 | - | - | - | - | - | - | - | - | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| 39 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 4 | 5 | 5 | 6 | 6 | 5 | 6 | 8 | 8 | 9 | 10 | 11 | 11 | 13 | 16 | 17 | 17 | 18 | 20 | 22 | 25 | 26 | 27 | 30 | 33 | 36 | 38 | 40 |
| 40 | - | - | - | - | - | - | - | - | | 0 | 0 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 15 | 16 | 18 | 20 | 23 | 26 | 28 | 31 | 34 | 37 |
| 42 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 5 | 6 | 6 | 8 | 9 | 9 | 9 | 11 | 12 | 13 | 14 | 16 | 17 | 20 | 24 | 25 | 28 | 31 | 35 | 39 | 43 | 46 | 50 | 56 | 61 | 67 | 71 | 77 |
| 45 | 21 | 22 | 22 | 26 | 41 | 38 | 39 | 40 | 42 | 49 | 54 | 87 | 101 | 105 | 121 | 125 | 117 | 138 | 169 | 185 | 199 | 214 | 244 | 246 | 295 | 351 | 375 | 400 | 425 | 480 | 524 | 580 | 612 | 654 | 723 | 791 | 863 | 917 | 974 |
| 48 | 3,606 | 3,891 | 3,906 | 4,195 | 3,855 | 3,441 | 3,104 | 3,276 | 3,565 | 3,759 | 4,141 | 4,430 | 4,188 | 4,364 | 4,760 | 4,884 | 4,914 | 5,097 | 5,068 | 4,254 | 4,536 | 5,104 | 5,383 | 5,199 | 5,976 | 6,475 | 6,577 | 6,742 | 6,834 | 7,490 | 7,977 | 8,318 | 8,538 | 8,986 | 9,407 | 9,453 | 9,842 | 10,376 | 10,974 |
| 49 | 984 | 1,062 | 1,066 | 1,145 | 1,052 | 939 | 847 | 894 | 973 | 1,026 | 1,130 | 1,209 | 1,143 | 1,191 | 1,299 | 1,333 | 1,341 | 1,391 | 1,383 | 1,161 | 1,238 | 1,393 | 1,469 | 1,419 | 1,631 | 1,767 | 1,795 | 1,840 | 1,865 | 2,044 | 2,177 | 2,270 | 2,330 | 2,452 | 2,567 | 2,580 | 2,686 | 2,832 | 2,995 |
| 51 | 0.55% | 0.53% | 0.54% | 0.59% | 1.00% | 1.05% | 1.21% | 1.16% | 1.11% | 1.24% | 1.24% | 1.85% | 2.27% | 2.28% | 2.38% | 2.39% | 2.23% | 2.53% | 3.12% | 4.07% | 4.10% | 3.91% | 4.22% | 4.41% | 4.59% | 5.06% | 5.31% | 5.51% | 5.77% | 5.93% | 6.08% | 6.46% | 6.63% | 6.73% | 7.10% | 7.72% | 8.09% | 8.15% | 8.18% |
| 54 | 21.2 | 23.0 | 22.8 | 24.4 | 22.3 | 19.9 | 17.9 | 18.8 | 20.4 | 21.0 | 23.3 | 24.8 | 23.4 | 24.8 | 26.2 | 27.0 | 27.0 | 27.4 | 26.9 | 23.5 | 24.7 | 27.6 | 29.2 | 28.1 | 30.4 | 32.2 | 32.7 | 33.1 | 33.1 | 35.9 | 37.7 | 39.7 | 40.9 | 42.7 | 44.6 | 44.3 | 45.1 | 47.1 | 49.4 |
| 56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.06 |

## Entity emissions from combustion, venting, flaring, and fugitive methane

Richard Heede
Climate Accountability Institute
7-Jul-19

**Chevron, USA**

Entity emissions from combustion (continued →) — Climate A...

| Decade | 1960s | | | | | 1970s | | | | | | | | | | 1980s | | | | | | | | | | 1990s | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
| 15 | 813 | 894 | 980 | 1,064 | 1,155 | 1,263 | 1,288 | 1,386 | 1,454 | 1,436 | 1,066 | 1,102 | 1,072 | 990 | 990 | 925 | 878 | 626 | 523 | 390 | 341 | 339 | 324 | 301 | 264 | 255 | 258 | 245 | 245 | 280 | 268 | 282 | 290 | 306 | 301 | 290 | 288 | 280 | 267 |
| 16 | 145 | 167 | 186 | 205 | 225 | 245 | 251 | 263 | 254 | 250 | 231 | 226 | 218 | 209 | 208 | 194 | 178 | 164 | 153 | 171 | 135 | 129 | 134 | 128 | 122 | 131 | 129 | 127 | 123 | 130 | 125 | 128 | 131 | 130 | 129 | 125 | 128 | 121 | 117 |
| 17 | 16 | 17 | 17 | 18 | 15 | 15 | 14 | 14 | 16 | 15 | 14 | 15 | 16 | 17 | 18 | 19 | 31 | 27 | 24 | 26 | 26 | 25 | 24 | 25 | 29 | 29 | 29 | 32 | 38 | 38 | 33 | 31 | 30 | 43 | 29 | 25 | 31 | 27 | 24 |
| 18 | 973 | 1,078 | 1,183 | 1,287 | 1,395 | 1,523 | 1,553 | 1,664 | 1,723 | 1,701 | 1,310 | 1,344 | 1,306 | 1,216 | 1,216 | 1,138 | 1,087 | 817 | 700 | 587 | 502 | 493 | 482 | 453 | 415 | 415 | 415 | 404 | 405 | 448 | 426 | 440 | 450 | 479 | 459 | 440 | 447 | 428 | 408 |
| 20 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 21 | 13 | 14 | 16 | 17 | 18 | 20 | 21 | 22 | 23 | 23 | 17 | 18 | 17 | 16 | 16 | 15 | 14 | 10 | 8 | 6 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 4 |
| 22 | 8 | 10 | 11 | 12 | 13 | 14 | 14 | 15 | 15 | 14 | 13 | 13 | 12 | 12 | 12 | 11 | 10 | 9 | 9 | 10 | 8 | 7 | 8 | 7 | 7 | 8 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 23 | 4 | 5 | 5 | 6 | 7 | 7 | 7 | 8 | 7 | 7 | 7 | 6 | 6 | 6 | 6 | 6 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 |
| 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 29 | 32 | 36 | 39 | 43 | 46 | 47 | 50 | 51 | 50 | 41 | 42 | 40 | 38 | 38 | 35 | 33 | 27 | 24 | 23 | 19 | 18 | 18 | 17 | 16 | 17 | 16 | 16 | 16 | 17 | 16 | 17 | 17 | 17 | 17 | 17 | 17 | 16 | 16 |
| 29 | 1,002 | 1,111 | 1,219 | 1,326 | 1,437 | 1,569 | 1,600 | 1,714 | 1,774 | 1,751 | 1,351 | 1,386 | 1,346 | 1,253 | 1,254 | 1,173 | 1,120 | 844 | 724 | 610 | 520 | 511 | 500 | 470 | 431 | 432 | 432 | 420 | 421 | 465 | 443 | 457 | 467 | 496 | 476 | 457 | 464 | 444 | 423 |
| 33 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 34 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 36 | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 39 | 44 | 48 | 53 | 57 | 62 | 68 | 69 | 75 | 78 | 77 | 57 | 59 | 58 | 53 | 53 | 50 | 47 | 34 | 28 | 21 | 18 | 18 | 17 | 16 | 14 | 14 | 14 | 13 | 13 | 15 | 14 | 15 | 16 | 16 | 16 | 16 | 16 | 15 | 14 |
| 40 | 40 | 46 | 51 | 57 | 62 | 68 | 69 | 73 | 70 | 69 | 64 | 63 | 60 | 58 | 58 | 54 | 49 | 45 | 42 | 47 | 37 | 36 | 37 | 35 | 34 | 36 | 36 | 35 | 34 | 36 | 35 | 35 | 36 | 36 | 36 | 35 | 35 | 33 | 32 |
| 41 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 5 | 3 | 3 | 3 | 3 | 3 |
| 42 | 86 | 96 | 106 | 116 | 126 | 137 | 140 | 149 | 150 | 148 | 123 | 124 | 120 | 113 | 113 | 106 | 100 | 82 | 73 | 71 | 59 | 57 | 57 | 54 | 51 | 53 | 53 | 52 | 51 | 55 | 53 | 54 | 55 | 57 | 55 | 53 | 54 | 52 | 50 |
| 45 | 1,088 | 1,207 | 1,325 | 1,442 | 1,564 | 1,707 | 1,740 | 1,863 | 1,924 | 1,899 | 1,474 | 1,509 | 1,466 | 1,366 | 1,367 | 1,279 | 1,220 | 926 | 797 | 681 | 579 | 568 | 557 | 525 | 482 | 485 | 485 | 472 | 472 | 520 | 496 | 511 | 523 | 554 | 531 | 510 | 519 | 496 | 473 |
| 48 | 11,467 | 12,046 | 12,435 | 13,064 | 13,847 | 14,847 | 15,411 | 16,028 | 16,898 | 16,928 | 16,827 | 17,806 | 18,356 | 18,563 | 19,595 | 19,385 | 18,788 | 18,629 | 18,550 | 19,222 | 19,794 | 20,397 | 20,910 | 21,682 | 22,155 | 22,183 | 22,431 | 22,193 | 22,154 | 22,539 | 23,012 | 23,528 | 23,917 | 23,983 | 23,932 | 24,560 | 25,139 | 25,492 | 26,861 |
| 49 | 3,129 | 3,288 | 3,394 | 3,565 | 3,779 | 4,052 | 4,206 | 4,374 | 4,612 | 4,620 | 4,592 | 4,859 | 5,010 | 5,066 | 5,348 | 5,291 | 5,127 | 5,084 | 5,063 | 5,246 | 5,402 | 5,567 | 5,707 | 5,917 | 6,046 | 6,054 | 6,122 | 6,057 | 6,046 | 6,151 | 6,280 | 6,421 | 6,527 | 6,545 | 6,531 | 6,703 | 6,861 | 6,957 | 7,331 |
| 51 | 8.74% | 9.22% | 9.80% | 10.15% | 10.38% | 10.57% | 10.38% | 10.70% | 10.50% | 10.34% | 8.03% | 7.78% | 7.33% | 6.75% | 6.40% | 6.05% | 5.96% | 4.53% | 3.90% | 3.17% | 2.63% | 2.51% | 2.39% | 2.17% | 1.95% | 1.95% | 1.92% | 1.89% | 1.90% | 2.06% | 1.92% | 1.94% | 1.95% | 2.07% | 1.99% | 1.86% | 1.85% | 1.74% | 1.58% |
| 54 | 51.3 | 53.4 | 54.7 | 57.2 | 60.6 | 60.3 | 60.6 | 62.7 | 66.6 | 66.2 | 65.5 | 69.8 | 70.3 | 72.0 | 73.3 | 72.0 | 68.1 | 69.1 | 69.2 | 70.4 | 72.9 | 74.2 | 75.8 | 78.6 | 79.9 | 80.7 | 81.2 | 80.4 | 78.7 | 79.1 | 81.1 | 83.2 | 83.7 | 83.0 | 82.6 | 85.4 | 86.9 | 88.8 | 94.5 |
| 56 | 0.06 | 0.06 | 0.07 | 0.07 | 0.07 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.07 | 0.06 | 0.06 | 0.06 | 0.06 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.03 | 0.03 | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |

**n, venting, flaring, and fugitive methane**

Richard Heede
Accountability Institute
7-Jul-19

**Chevron, USA**

| to 2015 | to 2016 | to 2017 | to 2018 |

| 2000s | | | | | | 2010s | | | | | | | | | | Cumulative | Entity emissions | | Emission factors | Cumulative | Cumulative | Cumulative | Cumulative |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | MtCO2e | | | | MtCO2e | MtCO2e | MtCO2e | MtCO2e |
| | | | | | | | | | | | | | | | | (except where noted) | V (V = verified) | | | (except where noted) | (except where noted) | (except where noted) | (except where noted) |

**Entity CO2 emissions** — kg CO2/tCO2 — to 2015 / to 2016 / to 2017 / to 2018

| Label | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | Cumulative MtCO2e | unit | | factor | to 2015 | to 2016 | to 2017 | to 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oil & NGLs | 272 | 246 | 250 | 242 | 227 | 254 | 261 | 251 | 239 | 235 | 232 | 236 | 233 | 234 | 242 | | 38,484 V | MtCO2 | linked | | 37,775 | 38,008 | 38,242 | 38,484 |
| Natural Gas | 107 | 83 | 97 | 98 | 100 | 97 | 98 | 96 | 99 | 101 | 101 | 103 | 102 | 118 | 134 | | 9,320 V | MtCO2 | linked | | 8,965 | 9,068 | 9,185 | 9,320 |
| Coal | 20 | 20 | 24 | 23 | 21 | 19 | 15 | 8 | 4 | [n/a] | | | | | | | 1,086 V | MtCO2 | linked | | 1,086 | 1,086 | 1,086 | 1,086 |
| Combustion total | 399 | 348 | 371 | 363 | 349 | 370 | 374 | 356 | 342 | 336 | 332 | 339 | 335 | 351 | 376 | | 48,889 | MtCO2 | sum | | 47,826 | 48,162 | 48,513 | 48,889 |
| Oil & NGLs: Venting | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 147 | MtCO2 | calculated | 3.83 linked | 145 | 146 | 147 | 147 |
| Oil & NGLs: Flaring | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | | 614 | MtCO2 | calculated | 15.94 linked | 602 | 606 | 610 | 614 |
| Own fuel use | 6 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 8 | | 534 | MtCO2 | calculated | 57.26 linked | 513 | 519 | 526 | 534 |
| Natural Gas: Venting | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | | 266 | MtCO2 | calculated | 28.53 linked | 256 | 259 | 262 | 266 |
| Natural Gas: Flaring | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 16 | MtCO2 | calculated | 1.74 linked | 16 | 16 | 16 | 16 |
| Venting & Flaring total | 15 | 12 | 13 | 13 | 13 | 14 | 14 | 13 | 13 | 14 | 13 | 14 | 14 | 15 | 17 | | 1,577 | MtCO2 | sum | | 1,532 | 1,545 | 1,560 | 1,577 |
| Cement | | | | | | | | | | | | | | | | | - | MtCO2 | linked | | | | | |
| Total CO2 emissions | 414 | 360 | 384 | 376 | 362 | 384 | 388 | 369 | 356 | 349 | 346 | 353 | 349 | 366 | 392 | | 50,466 V | MtCO2 | sum | row 18+24+26 | 49,358 | 49,707 | 50,073 | 50,466 |
| summed scope 1 CO2 & CH4 | | | 56 | 56 | 56 | 56 | 57 | 55 | 54 | 54 | 54 | 55 | 54 | 60 | 67 | | | | | | | | | |

**Entity methane emissions** — kg CH4/tCO2

| Label | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | Cumulative | unit | | factor | to 2015 | to 2016 | to 2017 | to 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Methane: Oil & NGLs | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 74 | MtCH4 | calculated | 1.92 linked | 73 | 73 | 74 | 74 |
| Methane: Natural Gas | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 92 | MtCH4 | calculated | 9.88 linked | 89 | 90 | 91 | 92 |
| Methane: Coal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [n/a] | | | | | | | 4 | MtCH4 | calculated | 4.03 linked | 4 | 4 | 4 | 4 |
| Total methane emissions | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | | 170 V | MtCH4 | sum | | 166 | 167 | 169 | 170 |

**Entity methane emissions** — GWP

| Label | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | Cumulative | unit | | GWP | to 2015 | to 2016 | to 2017 | to 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Methane: Oil & NGLs | 15 | 13 | 13 | 13 | 12 | 14 | 14 | 14 | 13 | 13 | 12 | 13 | 13 | 13 | 13 | | 2,073 | MtCO2e | calculated | 28 | 2,035 | 2,047 | 2,060 | 2,073 |
| Methane: Natural Gas | 29 | 23 | 27 | 27 | 28 | 27 | 27 | 27 | 27 | 28 | 28 | 28 | 28 | 33 | 37 | | 2,578 | MtCO2e | calculated | 28 | 2,480 | 2,508 | 2,541 | 2,578 |
| Methane: Coal | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 1 | 0 | - | - | - | - | - | - | | 123 | MtCO2e | calculated | 28 | 123 | 123 | 123 | 123 |
| Total methane emissions | 46 | 38 | 43 | 43 | 42 | 43 | 43 | 41 | 41 | 40 | 41 | 41 | 41 | 45 | 50 | | 4,773 | MtCO2e | sum | (per IPCC AR4) | 4,637 | 4,678 | 4,723 | 4,773 |
| Methane Oil & gas only | | | 36 | 40 | 40 | 40 | 41 | 41 | 40 | 40 | 41 | 40 | 41 | 41 | 45 | 50 | | | | | | | | |
| Total attributed emissions | 460 | 398 | 427 | 419 | 404 | 426 | 431 | 410 | 396 | 390 | 386 | 394 | 390 | 411 | 443 | | 55,239 V | MtCO2e | sum | | 53,995 | 54,385 | 54,796 che | 55,239 |
| CDIAC CO2 emissions | 28,193 | 29,253 | 30,288 | 30,882 | 31,881 | 31,525 | 33,068 | 34,359 | 34,921 | 35,213 | 35,511 | 35,465 | 35,677 | 36,155 | 37,131 | | 1,611,433 V | MtCO2 | | | 1,502,470 | 1,538,147 | 1,574,302 | 1,611,433 |
| Oil, Natural Gas, Coal, Flaring, & Cement | 7,694 | 7,983 | 8,266 | 8,428 | 8,701 | 8,603 | 9,025 | 9,377 | 9,530 | 9,610 | 9,691 | 9,679 | 9,737 | 9,867 | 10,134 | | 439,779 V | Mt Carbon | | | | | | |
| Entity percent of total CO2 emissions | 1.47% | 1.23% | 1.27% | 1.22% | 1.14% | 1.22% | 1.17% | | | | | | | | | | 3.13% | Percent | | | 3.29% | 3.23% | 3.18% | 3.13% |
| CDIAC/EDGAR methane | 99.3 | 103.4 | 107.4 | 110.2 | 115.4 | 113.2 | 120.9 | | | | | | | | | | 5,459 | Tg CH4 | | | 5,459 | 5,459 | 5,459 | 5,459 |
| Entity percent of total CH4 emissions | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | | | | | | | | | | 3.12% | Percent | | | | | | |

CDIAC sums July 2019

3.12%