

| Oil & Gas emissions, sorted and ranked by MtCO2 | | |
|---|----------------------------------|--|
| Richard Heede | | |
| Table 1 | Climate Accountability Institute | |
| 4-Oct-21 | | |

| Emissions |
|-----------------------------|
| Combined oil & gas MtCO2 |
| 2000-2018 |

| Percent |
|--|
| % of global oil, gas & coal emissions |
| 2000-2018 |

Assessable person

| Global Carbon Project / CDIAC data | | | |
|------------------------------------|--------|-------|--|
| 1 | 32,751 | 5.74% | Saudi Aramco, Saudi Arabia |
| 2 | 21,313 | 3.73% | Gazprom, Russian Federation |
| 3 | 16,857 | 2.95% | National Iranian Oil Company (NIOC), Iran |
| 4 | 11,440 | 2.00% | ExxonMobil, USA |
| 5 | 10,946 | 1.92% | Petroleos Mexicanos (PEMEX), Mexico |
| 6 | 10,855 | 1.90% | PetroChina (CNPC), China |
| 7 | 10,332 | 1.81% | Royal Dutch Shell plc, The Netherlands |
| 8 | 9,624 | 1.69% | BP, UK |
| 9 | 8,930 | 1.56% | Abu Dhabi National Oil (ADNOC), UAE |
| 10 | 7,878 | 1.38% | Petroleos de Venezuela, Venezuela |
| 11 | 7,856 | 1.38% | Rosneft, Russian Federation |
| 12 | 7,622 | 1.34% | Chevron, USA |
| 13 | 7,550 | 1.32% | Kuwait Petroleum Corp., Kuwait |
| 14 | 6,928 | 1.21% | Iraq National Oil Company, Iraq |
| 15 | 6,708 | 1.18% | Petroleo Brasileiro (Petrobras), Brazil |
| 16 | 6,626 | 1.16% | Sonatrach, Algeria |
| 17 | 6,504 | 1.14% | TotalEnergies, France |
| 18 | 5,968 | 1.05% | Lukoil, Russian Federation |
| 19 | 5,113 | 0.90% | Qatar Petroleum, Qatar |
| 20 | 5,086 | 0.89% | ConocoPhillips, USA |
| 21 | 5,058 | 0.89% | Nigerian National Petroleum, Nigeria |
| 22 | 4,544 | 0.80% | Equinor, Norway |
| 23 | 4,454 | 0.78% | Petronas, Malaysia |
| 24 | 4,295 | 0.75% | ENI, Italy |
| 25 | 3,489 | 0.61% | Sinopec, China |
| 26 | 3,096 | 0.54% | Petoro, Norway |
| 27 | 3,062 | 0.54% | Libya National Oil Corp., Libya |
| 28 | 2,981 | 0.52% | Repsol, Spain |
| 29 | 2,686 | 0.47% | CNOOC (China National Offshore Oil), China |
| 30 | 2,622 | 0.46% | Oil and Natural Gas Corporation, India |
| 31 | 2,324 | 0.41% | Sonangol, Angola |
| 32 | 2,180 | 0.38% | TurkmenGaz, Turkmenistan |
| 33 | 2,060 | 0.36% | Petroleum Development Oman, Oman |
| 34 | 1,988 | 0.35% | Suncor, Canada |
| 35 | 1,955 | 0.34% | Egyptian General Petroleum, Egypt |
| 36 | 1,931 | 0.34% | Anadarko, USA |
| 37 | 1,835 | 0.32% | Occidental, USA |
| 38 | 1,702 | 0.30% | Canadian Natural Resources, Canada |
| 39 | 1,697 | 0.30% | Ecopetrol, Colombia |
| 40 | 1,688 | 0.30% | Novatek, Russian Federation |
| 41 | 1,620 | 0.28% | Devon Energy, USA |
| 42 | 1,564 | 0.27% | Pertamina, Indonesia |
| 43 | 1,400 | 0.25% | EnCana, Canada |
| 44 | 1,400 | 0.25% | Apache, USA |
| 45 | 1,337 | 0.23% | Yukos, Russian Federation |
| 46 | 1,279 | 0.22% | PetroEcuador |
| 47 | 1,196 | 0.21% | BHP Billiton, Australia |
| 48 | 1,100 | 0.19% | Marathon, USA |
| 49 | 1,026 | 0.18% | Hess, USA |
| 50 | 988 | 0.17% | EOG Resources, USA |
| 51 | 956 | 0.17% | Chesapeake, USA |
| 52 | 867 | 0.15% | Husky, Canada |
| 53 | 865 | 0.15% | Inpex, Japan |
| 54 | 865 | 0.15% | Wintershall, Germany |
| 55 | 853 | 0.15% | YPF, Argentina |
| 56 | 696 | 0.12% | Syrian Petroleum, Syria |
| 57 | 662 | 0.12% | Bahrain Petroleum Corporation |
| 58 | 652 | 0.11% | OMV Group, Austria |
| 59 | 575 | 0.10% | PTTEP, Thailand |
| 60 | 569 | 0.10% | Noble Energy, USA |
| 61 | 556 | 0.10% | Polish Oil & Gas, Poland |
| 62 | 514 | 0.09% | Woodside, Australia |
| 63 | 423 | 0.07% | Murphy Oil, USA |
| 64 | 418 | 0.07% | Southwestern, USA |
| 65 | 411 | 0.07% | Pioneer, USA |
| 66 | 373 | 0.07% | Santos, Australia |
| 67 | 332 | 0.06% | EQT Corporation, USA |
| 68 | 289 | 0.05% | Obsidian / PennWest, Canada |
| 69 | 215 | 0.04% | Antero, USA |
| 70 | 163 | 0.03% | CONSOL Energy, USA |
| 71 | 73 | 0.01% | Sasol, South Africa |
| 72 | | 0.00% | BG Group (British Gas), UK |
| 73 | | 0.00% | Talisman, Canada |

286,774

50.25%

Sum of Carbon Majors

Global Oil, Gas, Coal emissions

| Global Carbon Project / CDIAC | |
|-------------------------------|--------|
| 214,073 | Oil |
| 113,649 | Gas |
| 242,918 | Coal |
| 570,639 | Sum FF |

excludes cement and flaring

| Coal emissions, sorted and ranked by MtCO2 | | |
|--|----------------------------------|--|
| Richard Heede | | |
| Table 2 | Climate Accountability Institute | |
| 4-Oct-21 | | |

| Emissions |
|---------------|
| coal MtCO2 |
| 2000-2018 |

| Percent |
|--|
| % of global oil, gas & coal emissions |
| 2000-2018 |

Assessable person

| | | | |
|----|--------|-------|--------------------------------------|
| 1 | 14,949 | 2.62% | Coal India, India |
| 2 | 7,084 | 1.24% | Peabody Energy, USA |
| 3 | 4,326 | 0.76% | Arch Coal Company, USA |
| 4 | 3,774 | 0.66% | BHP Billiton, Australia |
| 5 | 3,427 | 0.60% | RWE, Germany |
| 6 | 3,396 | 0.60% | Rio Tinto, Australia |
| 7 | 3,304 | 0.58% | Glencore, Switzerland |
| 8 | 3,191 | 0.56% | Contura Energy / ANR, USA |
| 9 | 3,087 | 0.54% | Anglo American, UK |
| 10 | 1,660 | 0.29% | Singareni Collieries, India |
| 11 | 1,594 | 0.28% | CONSOL Energy, USA |
| 12 | 1,552 | 0.27% | Sasol, South Africa |
| 13 | 1,340 | 0.23% | Cloud Peak, USA |
| 14 | 1,265 | 0.22% | Exaro, South Africa |
| 15 | 1,072 | 0.19% | North American Coal Corp., USA |
| 16 | 1,050 | 0.18% | Murray Coal Corporation, USA |
| 17 | 1,048 | 0.18% | Westmoreland Coal, USA |
| 18 | 924 | 0.16% | Alliance Resource Partners, USA |
| 19 | 817 | 0.14% | Vistra Energy, USA |
| 20 | 747 | 0.13% | Kiewit Mining Group, USA |
| 21 | 627 | 0.11% | Teck Resources, Canada |
| 22 | 232 | 0.04% | Chevron Mining / Pittsburgh & Midway |
| 23 | 193 | 0.03% | Whitehaven Coal, Australia |
| 24 | 174 | 0.03% | Vale, Brazil |
| 25 | 55 | 0.01% | Exxon Mobil |
| 26 | 25 | 0.00% | BP Coal, UK |

includes BG

includes Talisman

includes Nexen

60,911 MtCO2

Sum of Carbon Majors

245,164 MtCO2

Global coal emissions 2000-2018 (GCP / CDIAC)

| Global Carbon Project / CDIAC | |
|-------------------------------|--------|
| 214,073 | Oil |
| 113,649 | Gas |
| 242,918 | Coal |
| 570,639 | Sum FF |

excludes cement and flaring

Occidental, USA

Shell Coal, The Netherlands

Oil, Gas, & Coal emissions, sorted and ranked by MtCO2

Table 3

Richard Heede
Climate Accountability Institute
4-Oct-21

| | | | | Assessable person | |
|-----------|--------|---------|---------|-------------------|--|
| | | | | Emissions | Percent |
| | | | | Oil Gas Coal | % of global oil, gas & coal emissions |
| | | | | MtCO2 | 2000-2018 |
| Oil & Gas | Coal | Sum | | 2000-2018 | 2000-2018 |
| 1 | 32,751 | 32,751 | 32,751 | 5.739% | Saudi Aramco, Saudi Arabia |
| 2 | 21,313 | 21,313 | 21,313 | 3.735% | Gazprom, Russian Federation |
| 3 | 16,857 | 16,857 | 16,857 | 2.954% | National Iranian Oil Company (NIOC), Iran |
| 4 | | 14,949 | 14,949 | 2.620% | Coal India, India |
| 5 | 11,440 | 55 | 11,495 | 2.014% | ExxonMobil, USA |
| 6 | 10,946 | | 10,946 | 1.918% | Petroleos Mexicanos (PEMEX), Mexico |
| 7 | 10,855 | | 10,855 | 1.902% | PetroChina (CNPC), China |
| 8 | 10,332 | | 10,332 | 1.811% | Royal Dutch Shell plc, The Netherlands |
| 9 | 9,624 | 25 | 9,649 | 1.691% | BP, UK |
| 10 | 8,930 | | 8,930 | 1.565% | Abu Dhabi National Oil (ADNOC), UAE |
| 11 | 7,878 | | 7,878 | 1.381% | Petroleos de Venezuela, Venezuela |
| 12 | 7,856 | | 7,856 | 1.377% | Rosneft, Russian Federation |
| 13 | 7,622 | 232 | 7,853 | 1.376% | Chevron, USA |
| 14 | 7,550 | | 7,550 | 1.323% | Kuwait Petroleum Corp., Kuwait |
| 15 | | 7,084 | 7,084 | 1.241% | Peabody Energy, USA |
| 16 | 6,928 | | 6,928 | 1.214% | Iraq National Oil Company, Iraq |
| 17 | 6,708 | | 6,708 | 1.176% | Petroleo Brasileiro (Petrobras), Brazil |
| 18 | 6,626 | | 6,626 | 1.161% | Sonatrach, Algeria |
| 19 | 6,504 | | 6,504 | 1.140% | TotalEnergies, France |
| 20 | 5,968 | | 5,968 | 1.046% | Lukoil, Russian Federation |
| 21 | 5,113 | | 5,113 | 0.896% | Qatar Petroleum, Qatar |
| 22 | 5,086 | | 5,086 | 0.891% | ConocoPhillips, USA |
| 23 | 5,058 | | 5,058 | 0.886% | Nigerian National Petroleum, Nigeria |
| 24 | 1,196 | 3,774 | 4,971 | 0.871% | BHP Billiton, Australia |
| 25 | 4,544 | | 4,544 | 0.796% | Equinor, Norway |
| 26 | 4,454 | | 4,454 | 0.780% | Petronas, Malaysia |
| 27 | | 4,326 | 4,326 | 0.758% | Arch Coal Company, USA |
| 28 | 4,295 | | 4,295 | 0.753% | ENI, Italy |
| 29 | 3,489 | | 3,489 | 0.611% | Sinopec, China |
| 30 | | 3,427 | 3,427 | 0.601% | RWE, Germany |
| 31 | | 3,396 | 3,396 | 0.595% | Rio Tinto, Australia |
| 32 | | 3,304 | 3,304 | 0.579% | Glencore, Switzerland |
| 33 | | 3,191 | 3,191 | 0.559% | Contura Energy / ANR, USA |
| 34 | 3,096 | | 3,096 | 0.543% | Petoro, Norway |
| 35 | | 3,087 | 3,087 | 0.541% | Anglo American, UK |
| 36 | 3,062 | | 3,062 | 0.537% | Libya National Oil Corp., Libya |
| 37 | 2,981 | | 2,981 | 0.522% | Repsol, Spain |
| 38 | 2,686 | | 2,686 | 0.471% | CNOOC (China National Offshore Oil), China |
| 39 | 2,622 | | 2,622 | 0.459% | Oil and Natural Gas Corporation, India |
| 40 | 2,324 | | 2,324 | 0.407% | Sonangol, Angola |
| 41 | 2,180 | | 2,180 | 0.392% | TurkmenGaz, Turkmenistan |
| 42 | 2,060 | | 2,060 | 0.361% | Petroleum Development Oman, Oman |
| 43 | 1,988 | | 1,988 | 0.348% | Suncor, Canada |
| 44 | 1,955 | | 1,955 | 0.343% | Egyptian General Petroleum, Egypt |
| 45 | 1,931 | | 1,931 | 0.338% | Anadarko, USA |
| 46 | 1,835 | | 1,835 | 0.322% | Occidental, USA |
| 47 | 163 | 1,594 | 1,757 | 0.308% | CONSOL Energy, USA |
| 48 | 1,702 | | 1,702 | 0.298% | Canadian Natural Resources, Canada |
| 49 | 1,697 | | 1,697 | 0.297% | Ecopetrol, Colombia |
| 50 | 1,688 | | 1,688 | 0.296% | Novatek, Russian Federation |
| 51 | | 1,660 | 1,660 | 0.291% | Singareni Collieries, India |
| 52 | 73 | 1,552 | 1,624 | 0.285% | Sasol, South Africa |
| 53 | 1,620 | | 1,620 | 0.284% | Devon Energy, USA |
| 54 | 1,564 | | 1,564 | 0.274% | Pertamina, Indonesia |
| 55 | 1,400 | | 1,400 | 0.245% | EnCana, Canada |
| 56 | 1,400 | | 1,400 | 0.245% | Apache, USA |
| 57 | | 1,340 | 1,340 | 0.235% | Cloud Peak, USA |
| 58 | 1,337 | | 1,337 | 0.234% | Yukos, Russian Federation |
| 59 | 1,279 | | 1,279 | 0.224% | PetroEcuador |
| 60 | | 1,265 | 1,265 | 0.222% | Exxaro, South Africa |
| 61 | 1,100 | | 1,100 | 0.193% | Marathon, USA |
| 62 | | 1,072 | 1,072 | 0.188% | North American Coal Corp., USA |
| 63 | | 1,050 | 1,050 | 0.184% | Murray Coal Corporation, USA |
| 64 | | 1,048 | 1,048 | 0.184% | Westmoreland Coal, USA |
| 65 | 1,026 | | 1,026 | 0.180% | Hess, USA |
| 66 | 988 | | 988 | 0.173% | EOG Resources, USA |
| 67 | 956 | | 956 | 0.167% | Chesapeake, USA |
| 68 | | 924 | 924 | 0.162% | Alliance Resource Partners, USA |
| 69 | 867 | | 867 | 0.152% | Husky, Canada |
| 70 | 865 | | 865 | 0.152% | Inpex, Japan |
| 71 | 865 | | 865 | 0.152% | Wintershall, Germany |
| 72 | 853 | | 853 | 0.149% | YPF, Argentina |
| 73 | | 817 | 817 | 0.143% | Vistra Energy, USA |
| 74 | | 747 | 747 | 0.131% | Kiewit Mining Group, USA |
| 75 | 696 | | 696 | 0.122% | Syrian Petroleum, Syria |
| 76 | 662 | | 662 | 0.116% | Bahrain Petroleum Corporation |
| 77 | 652 | | 652 | 0.114% | OMV Group, Austria |
| 78 | | 627 | 627 | 0.110% | Teck Resources, Canada |
| 79 | 575 | | 575 | 0.101% | PTTEP, Thailand |
| 80 | 569 | | 569 | 0.100% | Noble Energy, USA |
| 81 | 556 | | 556 | 0.097% | Polish Oil & Gas, Poland |
| 82 | 514 | | 514 | 0.090% | Woodside, Australia |
| 83 | 423 | | 423 | 0.074% | Murphy Oil, USA |
| 84 | 418 | | 418 | 0.073% | Southwestern, USA |
| 85 | 411 | | 411 | 0.072% | Pioneer, USA |
| 86 | 373 | | 373 | 0.065% | Santos, Australia |
| 87 | 332 | | 332 | 0.058% | EQT Corporation, USA |
| 88 | 289 | | 289 | 0.051% | Obidian / PennWest, Canada |
| 89 | 215 | | 215 | 0.038% | Antero, USA |
| 90 | | 193 | 193 | 0.034% | Whitehaven Coal, Australia |
| 91 | | 174 | 174 | 0.030% | Vale, Brazil |
| 286,774 | 60,911 | 347,685 | 347,685 | 60.929% | Sum of Carbon Majors |

| Global Carbon Project / CDIAC | |
|-------------------------------|--------|
| 214,073 | Oil |
| 113,649 | Gas |
| 242,918 | Coal |
| 570,639 | Sum FF |

excludes cement and flaring

Crude oil emissions using EPA crude oil combustion factor

| | |
|---------|----------------------------------|
| Table 4 | Richard Heede |
| | Climate Accountability Institute |
| | 4-Oct-21 |

2000-2018

Emissions

Assessable person

| | |
|----|----------------------|
| Mb | EPA Emissions Factor |
| | 0.43218 |
| | MtCO2/Mb |
| | MtCO2 |

| | | | |
|----------------------|--------|--------|--|
| 1 | 68,838 | 29,750 | Saudi Aramco, Saudi Arabia |
| 2 | 27,526 | 11,896 | National Iranian Oil Company (NIOC), Iran |
| 3 | 21,562 | 9,319 | Petroleos Mexicanos (PEMEX), Mexico |
| 4 | 18,549 | 8,017 | PetroChina (CNPC), China |
| 5 | 16,897 | 7,302 | Abu Dhabi National Oil (ADNOC), UAE |
| 6 | 16,867 | 7,289 | ExxonMobil, USA |
| 7 | 16,371 | 7,075 | Kuwait Petroleum Corp., Kuwait |
| 8 | 16,101 | 6,959 | Petroleos de Venezuela, Venezuela |
| 9 | 15,929 | 6,884 | Rosneft, Russian Federation |
| 10 | 15,561 | 6,725 | Iraq National Oil Company, Iraq |
| 11 | 15,327 | 6,624 | BP, UK |
| 12 | 14,271 | 6,168 | Royal Dutch Shell plc, The Netherlands |
| 13 | 13,433 | 5,806 | Petroleo Brasileiro (Petrobras), Brazil |
| 14 | 12,861 | 5,558 | Chevron, USA |
| 15 | 12,475 | 5,391 | Lukoil, Russian Federation |
| 16 | 10,153 | 4,388 | TotalEnergies, France |
| 17 | 9,508 | 4,109 | Nigerian National Petroleum, Nigeria |
| 18 | 8,073 | 3,489 | Sonatrach, Algeria |
| 19 | 7,747 | 3,348 | ConocoPhillips, USA |
| 20 | 7,208 | 3,115 | Equinor, Norway |
| 21 | 6,837 | 2,955 | Qatar Petroleum, Qatar |
| 22 | 6,836 | 2,954 | Sinopec, China |
| 23 | 6,568 | 2,838 | Gazprom, Russian Federation |
| 24 | 6,455 | 2,790 | ENI, Italy |
| 25 | 6,446 | 2,786 | Libya National Oil Corp., Libya |
| 26 | 5,359 | 2,316 | CNOOC (China National Offshore Oil), China |
| 27 | 5,333 | 2,305 | Sonangol, Angola |
| 28 | 5,031 | 2,175 | Petronas, Malaysia |
| 29 | 4,464 | 1,929 | Petoro, Norway |
| 30 | 4,115 | 1,778 | Suncor, Canada |
| 31 | 3,954 | 1,709 | Oil and Natural Gas Corporation, India |
| 32 | 3,892 | 1,682 | Repsol, Spain / includes Talisman |
| 33 | 3,451 | 1,492 | Occidental, USA |
| 34 | 3,446 | 1,489 | Ecopetrol, Colombia |
| 35 | 2,996 | 1,295 | Yukos, Russian Federation |
| 36 | 2,940 | 1,270 | PetroEcuador |
| 37 | 2,914 | 1,259 | Petroleum Development Oman, Oman |
| 38 | 2,742 | 1,185 | Canadian Natural Resources, Canada |
| 39 | 2,503 | 1,082 | Egyptian General Petroleum, Egypt |
| 40 | 2,489 | 1,076 | Anadarko, USA |
| 41 | 2,159 | 933 | Pertamina, Indonesia |
| 42 | 1,961 | 847 | Apache, USA |
| 43 | 1,844 | 797 | Devon Energy, USA |
| 44 | 1,829 | 791 | Hess, USA |
| 45 | 1,710 | 739 | Marathon, USA |
| 46 | 1,578 | 682 | BHP Billiton, Australia |
| 47 | 1,500 | 648 | Husky, Canada |
| 48 | 1,339 | 579 | Inpex, Japan |
| 49 | 1,298 | 561 | Syrian Petroleum, Syria |
| 50 | 1,279 | 553 | YPF, Argentina |
| 51 | 1,169 | 505 | EOG Resources, USA |
| 52 | 1,071 | 463 | Wintershall |
| 53 | 979 | 423 | EnCana, Canada |
| 54 | 922 | 399 | Polish Oil & Gas, Poland |
| 55 | 920 | 398 | OMV Group, Austria |
| 56 | 910 | 393 | TurkmenGaz, Turkmenistan |
| 57 | 730 | 315 | Murphy Oil, USA |
| 58 | 667 | 288 | Noble Energy, USA |
| 59 | 637 | 275 | Novatek, Russian Federation |
| 60 | 635 | 275 | Pioneer, USA |
| 61 | 556 | 240 | Woodside, Australia |
| 62 | 540 | 233 | Chesapeake, USA |
| 63 | 491 | 212 | PTTEP, Thailand |
| 64 | 451 | 195 | Bahrain Petroleum Corporation |
| 65 | 448 | 194 | Santos, Australia |
| 66 | 421 | 182 | Obsidian / PennWest, Canada |
| 67 | 142 | 61 | Antero, USA |
| 68 | | 36 | EQT Corporation, USA |
| 69 | 74 | 32 | Southwestern, USA |
| 462,368 | | | |
| 199,826 | | | |
| Sum of Carbon Majors | | | |

| Global Carbon Project / CDIAC | |
|-------------------------------|--------|
| 214,073 | Oil |
| 113,649 | Gas |
| 242,918 | Coal |
| 570,639 | Sum FF |

excludes cement and flaring

Natural Gas emissions using EPA natural gas combustion factor

| | |
|---------|----------------------------------|
| Table 5 | Richard Heede |
| | Climate Accountability Institute |
| | 4-Oct-21 |

2000-2018

Emission factor

Assessable person

| | |
|-----|-------------------|
| Bcf | EPA Emissions Hub |
| | 0.05444 |
| | MtCO2/Bcf |
| | MtCO2 |

| | | | |
|-------------------------------------|---------|--------|--|
| 1 | 339,358 | 18,475 | Gazprom, Russian Federation |
| 2 | 91,130 | 4,961 | National Iranian Oil Company (NIOC), Iran |
| 3 | 76,495 | 4,164 | Royal Dutch Shell plc, The Netherlands |
| 4 | 76,237 | 4,150 | ExxonMobil, USA |
| 5 | 57,620 | 3,137 | Sonatrach, Algeria |
| 6 | 55,113 | 3,000 | BP, UK |
| 7 | 55,110 | 3,000 | Saudi Aramco, Saudi Arabia |
| 8 | 52,141 | 2,839 | PetroChina (CNPC), China |
| 9 | 41,866 | 2,279 | Petronas, Malaysia |
| 10 | 39,648 | 2,158 | Qatar Petroleum, Qatar |
| 11 | 38,870 | 2,116 | TotalEnergies, France |
| 12 | 37,906 | 2,064 | Chevron, USA |
| 13 | 32,832 | 1,787 | TurkmenGaz, Turkmenistan |
| 14 | 31,920 | 1,738 | ConocoPhillips, USA |
| 15 | 29,901 | 1,628 | Abu Dhabi National Oil (ADNOC), UAE |
| 16 | 29,885 | 1,627 | Petroleos Mexicanos (PEMEX), Mexico |
| 17 | 27,654 | 1,505 | ENI, Italy |
| 18 | 26,255 | 1,429 | Equinor, Norway |
| 19 | 25,955 | 1,413 | Novatek, Russian Federation |
| 20 | 23,857 | 1,299 | Repsol, Spain / Includes Talisman |
| 21 | 21,438 | 1,167 | Petoro, Norway |
| 22 | 17,947 | 977 | EnCana, Canada |
| 23 | 17,844 | 971 | Rosneft, Russian Federation |
| 24 | 17,433 | 949 | Nigerian National Petroleum, Nigeria |
| 25 | 16,894 | 920 | Petroleos de Venezuela, Venezuela |
| 26 | 16,777 | 913 | Oil and Natural Gas Corporation, India |
| 27 | 16,578 | 903 | Petroleo Brasileiro (Petrobras), Brazil |
| 28 | 16,031 | 873 | Egyptian General Petroleum, Egypt |
| 29 | 15,714 | 855 | Anadarko, USA |
| 30 | 15,119 | 823 | Devon Energy, USA |
| 31 | 14,701 | 800 | Petroleum Development Oman, Oman |
| 32 | 13,271 | 722 | Chesapeake, USA |
| 33 | 11,593 | 631 | Pertamina, Indonesia |
| 34 | 10,586 | 576 | Lukoil, Russian Federation |
| 35 | 10,142 | 552 | Apache, USA |
| 36 | 9,819 | 535 | Sinopec, China |
| 37 | 9,498 | 517 | Canadian Natural Resources, Canada |
| 38 | 9,448 | 514 | BHP Billiton, Australia |
| 39 | 8,869 | 483 | EOG Resources, USA |
| 40 | 8,723 | 475 | Kuwait Petroleum Corp., Kuwait |
| 41 | 8,569 | 467 | Bahrain Petroleum Corporation |
| 42 | 7,384 | 402 | Wintershall, Germany |
| 43 | 7,099 | 386 | Southwestern, USA |
| 44 | 6,790 | 370 | CNOOC (China National Offshore Oil), China |
| 45 | 6,671 | 363 | PTTEP, Thailand |
| 46 | 6,619 | 360 | Marathon, USA |
| 47 | 6,316 | 344 | Occidental, USA |
| 48 | 5,514 | 300 | YPF, Argentina |
| 49 | 5,439 | 296 | EQT Corporation, USA |
| 50 | 5,269 | 287 | Inpex, Japan |
| 51 | 5,156 | 281 | Noble Energy, USA |
| 52 | 5,081 | 277 | Libya National Oil Corp., Libya |
| 53 | 5,035 | 274 | Woodside, Australia |
| 54 | 4,680 | 255 | OMV Group, Austria |
| 55 | 4,322 | 235 | Hess, USA |
| 56 | 4,017 | 219 | Husky, Canada |
| 57 | 3,856 | 210 | Suncor, Canada |
| 58 | 3,825 | 208 | Ecopetrol, Colombia |
| 59 | 3,730 | 203 | Iraq National Oil Company, Iraq |
| 60 | 3,303 | 180 | Santos, Australia |
| 61 | 2,994 | 163 | CONSOL Energy, USA |
| 62 | 2,889 | 157 | Polish Oil & Gas, Poland |
| 63 | 2,826 | 154 | Antero, USA |
| 64 | 2,515 | 137 | Pioneer, USA |
| 65 | 2,477 | 135 | Syrian Petroleum, Syria |
| 66 | 1,978 | 108 | Murphy Oil, USA |
| 67 | 1,975 | 108 | Obsidian / PennWest, Canada |
| 68 | 1,336 | 73 | Sasol, South Africa |
| 69 | 774 | 42 | Yukos, Russian Federation |
| 70 | 347 | 19 | Sonangol, Angola |
| 71 | 163 | 9 | PetroEcuador |
| 1,597,12486,947Sum of Carbon Majors | | | |

Coal emissions, sorted and ranked by MtCO2

Table 6

Richard Heede
Climate Accountability Institute
4-Oct-21

2000-2018

Emissions

Percent

EPA Emissions Factor
1.885% of global oil, gas
& coal emissions

Mt

MtCO2/Mt

2000-2018

million metric tonnes

| | | | | |
|---------------|-------|---------------|----------------------|--------------------------------------|
| 1 | 7,930 | 14,949 | 2.62% | Coal India, India |
| 2 | 3,758 | 7,084 | 1.24% | Peabody Energy, USA |
| 3 | 2,295 | 4,326 | 0.76% | Arch Coal Company, USA |
| 4 | 2,002 | 3,774 | 0.66% | BHP Billiton, Australia |
| 5 | 1,818 | 3,427 | 0.60% | RWE, Germany |
| 6 | 1,802 | 3,396 | 0.60% | Rio Tinto, Australia |
| 7 | 1,753 | 3,304 | 0.58% | Glencore, Switzerland |
| 8 | 1,693 | 3,191 | 0.56% | Contura Energy / ANR, USA |
| 9 | 1,638 | 3,087 | 0.54% | Anglo American, UK |
| 10 | 881 | 1,660 | 0.29% | Singareni Collieries, India |
| 11 | 846 | 1,594 | 0.28% | CONSOL Energy, USA |
| 12 | 823 | 1,552 | 0.27% | Sasol, South Africa |
| 13 | 711 | 1,340 | 0.23% | Cloud Peak, USA |
| 14 | 671 | 1,265 | 0.22% | Exxaro, South Africa |
| 15 | 569 | 1,072 | 0.19% | North American Coal Corp., USA |
| 16 | 557 | 1,050 | 0.18% | Murray Coal Corporation, USA |
| 17 | 556 | 1,048 | 0.18% | Westmoreland Coal, USA |
| 18 | 490 | 924 | 0.16% | Alliance Resource Partners, USA |
| 19 | 434 | 817 | 0.14% | Vistra Energy, USA |
| 20 | 396 | 747 | 0.13% | Kiewit Mining Group, USA |
| 21 | 333 | 627 | 0.11% | Teck Resources, Canada |
| 22 | 123 | 232 | 0.04% | Chevron Mining / Pittsburgh & Midway |
| 23 | 103 | 193 | 0.03% | Whitehaven Coal, Australia |
| 24 | 92 | 174 | 0.03% | Vale, Brazil |
| 25 | 29 | 55 | 0.01% | Exxon Mobil |
| 26 | 25 | 25 | 0.00% | BP Coal, UK |
| | | | | Shell Coal, The Netherlands |
| 32,325 | | 60,911 | Sum of Carbon Majors | |

| Global Carbon Project / CDIAC | |
|-------------------------------|---------------|
| 214,073 | Oil |
| 113,649 | Gas |
| 242,918 | Coal |
| 570,639 | Sum FF |

excludes cement and flaring