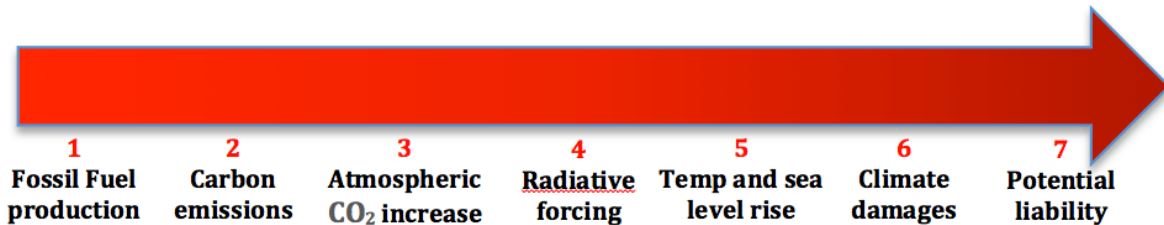


## Press Release

28 AUGUST 2018, QUEZON CITY, THE PHILIPPINES.

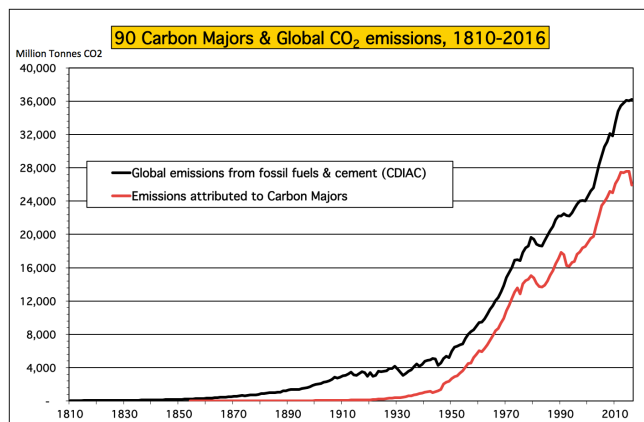
The Climate Accountability Institute is today releasing an update of the Carbon Majors Project — detailing the direct and product-related emissions traced to the major industrial carbon producers in the oil, natural gas, coal, and cement industries — through the year 2016. The work follows the methodology published in the peer-reviewed journal *Climatic Change* in 2014.<sup>1</sup> These carbon producers — the Carbon Majors — have produced the fuels that have altered the energy balance of the atmosphere that is the primary cause of human-caused climate change.



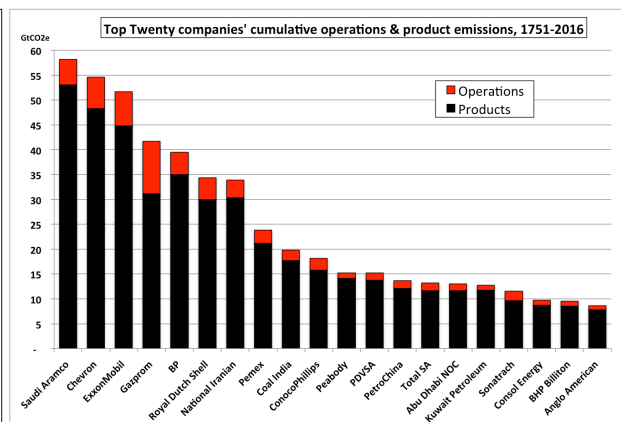
Climate Accountability Institute engages in research & education on anthropogenic climate change, dangerous interference with the climate system, the contribution of fossil fuel producers' carbon production to atmospheric carbon dioxide content, and how carbon producers can align investment and future production with science-based targets embraced in the Paris Accord.

THE MAIN FINDINGS OF THE UPDATE TO 2016:

- Global emissions of carbon dioxide from all anthropogenic industrial sources (fossil fuel and cement) totals 1,545 billion metric tonnes CO<sub>2</sub> (GtCO<sub>2</sub>) from 1751 to 2016 (Figure A);
- Emissions traced to the carbon fuels and cement produced by the 90 Carbon Major entities through 2016 total 1,023 GtCO<sub>2</sub>, or 66 percent of all anthropogenic CO<sub>2</sub> since 1751 (Fig. A);
- Emissions traced to fuels produced by the 50 investor-owned companies total 368 GtCO<sub>2</sub>e (21.4%), the 36 state-owned companies total 357 GtCO<sub>2</sub>e (20.8%), and to government-run industries total 408 GtCO<sub>2</sub>e (23.8%); historical emissions *not* traced to the 90 Carbon Majors total 585 GtCO<sub>2</sub>e (34%);



(A)



(B)

<sup>1</sup> Heede, Richard (2014) Tracing anthropogenic CO<sub>2</sub> and methane emissions to fossil fuel and cement producers 1854-2010, *Climatic Change*, vol. 122(1): 229-241; <http://link.springer.com/article/10.1007/s10584-013-0986-y?view=classic>

- 30 percent of all global industrial CO<sub>2</sub>e from 1751 to 2016 are attributed to carbon fuels produced by the Top Twenty fossil fuel companies (Figure B and Table 1);
- One-third of all global industrial CO<sub>2</sub>e from 1751 to 2016 are attributed to carbon fuels produced by the 47 investor-owned fossil fuel companies (Table 1 shows the largest 20 IOCs);
- *Half* of all industrial CO<sub>2</sub> emissions since 1751 have been emitted since 1989.

**Table 1. Cumulative emissions attributed to the Top Twenty Investor Owned fossil fuel companies, 1854-2016**

Entity	Product-related CO <sub>2</sub> GtCO <sub>2</sub>	Flaring, own fuel, vented CO <sub>2</sub> GtCO <sub>2</sub>	Fugitive methane GtCO <sub>2</sub> e	Total emissions GtCO <sub>2</sub> e	Percent of global 1751-2016
1. ChevronTexaco, USA	48.32	1.55	4.70	54.56	3.18%
2. ExxonMobil, USA	44.78	1.68	5.17	51.63	3.01%
3. BP, UK	34.99	1.12	3.39	39.50	2.30%
4. Royal Dutch Shell, The Netherlands	31.00	1.10	3.40	35.49	2.07%
5. ConocoPhillips, USA	15.79	0.71	2.15	18.64	1.09%
6. Peabody Energy, USA	14.14	0	1.60	15.74	0.92%
7. Total, France	12.48	0.43	1.27	14.18	0.83%
8. BHP Billiton, Australia	8.76	0.08	1.00	9.85	0.57%
9. CONSOL Energy	8.76	0.01	1.00	9.78	0.57%
10. ENI, Italy	6.39	0.29	0.89	7.58	0.44%
11. Anglo American, Switzerland	6.71	0	0.76	7.47	0.43%
12. RWE, Germany	6.31	0	0.71	7.02	0.41%
13. Arch Coal, USA	6.27	0	0.71	6.98	0.41%
14. Rio Tinto, UK	6.02	0	0.68	6.70	0.39%
15. Anadarko, USA	5.14	0.21	0.71	6.06	0.35%
16. Lukoil, Russian Federation	5.31	0.14	0.39	5.83	0.34%
17. Occidental, USA	5.18	0.11	0.51	5.80	0.34%
18. Rosneft, Russian Federation	5.11	0.14	0.41	5.66	0.33%
19. Alpha Natural Resources, USA	4.66	0	0.53	5.18	0.30%
20. Glencore, Switzerland & UK	3.91	0	0.44	4.35	0.25%

### Recent publications

- Heede, Richard (2017) Carbon producers' tar pit: dinosaurs beware: The path to accountability of fossil fuel producers for climate change & climate damages, *Institute for New Economic Thinking: Plenary Conference* Edinburgh, 23 October 2017, Climate Accountability Institute, October, 16 pp.
- Ekwurzel, B., J. Boneham, M. W. Dalton, R. Heede, R. J. Mera, M. R. Allen, & P. C. Frumhoff (2017) The rise in global atmospheric CO<sub>2</sub>, surface temperature, and sea level from emissions traced to major carbon producers, *Climatic Change*, vol. 144:579-590. <https://link.springer.com/article/10.1007/s10584-017-1978-0#SupplementaryMaterial>
- Shue, Henry (2017) Responsible for What? Carbon Producer CO<sub>2</sub> Contributions and the Energy Transition, Springboard Commentary on Ekwurzel et al., *Climatic Change*, vol. 144:591-596, online 7Sep. <https://link.springer.com/article/10.1007/s10584-017-2042-9>
- Heede, Richard, & Naomi Oreskes (2016): Potential emissions of CO<sub>2</sub> and methane from proven reserves of fossil fuels, *Global Environmental Change*, vol. 36:12-20. [www.sciencedirect.com/science/article/pii/S0959378015300637](http://www.sciencedirect.com/science/article/pii/S0959378015300637)
- Starr, Douglas (2016) The carbon accountant: Richard Heede pins much of the responsibility for climate change on just 90 companies, others think that's a copout, *Science*, vol. 353:858-861. <http://www.sciencemag.org/news/2016/08/just-90-companies-are-blame-most-climate-change-carbon-accountant-says>
- Frumhoff, P., R. Heede, & N. Oreskes (2015) The climate responsibilities of industrial carbon producers, *Climatic Change*, vol. 132:157-171. [link.springer.com/article/10.1007/s10584-015-1472-5](http://link.springer.com/article/10.1007/s10584-015-1472-5)
- Heede, Richard (2014) Tracing anthropogenic CO<sub>2</sub> and methane emissions to fossil fuel and cement producers 1854-2010, *Climatic Change*, vol. 122(1): 229-241. <https://link.springer.com/article/10.1007/s10584-013-0986-y>

### About Climate Accountability Institute

CAI is an independent research institute focusing on anthropogenic climate change, dangerous interference with the climate system, the contribution of fossil fuel producers' carbon production to atmospheric carbon dioxide content, and the risk and disclosure requirements of fossil fuel producers regarding emissions of greenhouse gases. CAI gratefully acknowledges financial support from Union of Concerned Scientists, Wallace Global Fund, and Rockefeller Brothers Fund. [www.climateaccountability.org](http://www.climateaccountability.org)