



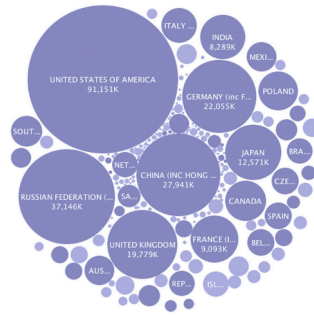
## Climate Responsibilities of Carbon Producers:

An update of the Carbon Majors' carbon fuel production & emissions to 2013.

Rick Heede  
 Union of Concerned Scientists  
 & Climate Accountability Institute  
 Press Conference, Media Room 2, COP-20  
 Lima, Peru, 8 December 2014  
 heede@climatemitigation.com



## G20 nations' cumulative CO<sub>2</sub> emissions, 1750-2013



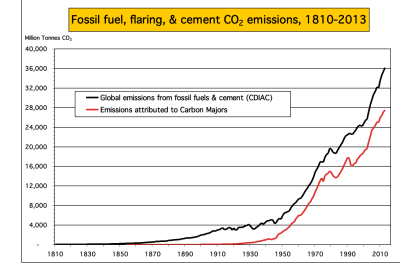
- World cumulative: 1,443 GtCO<sub>2</sub>
- USA: 371 GtCO<sub>2</sub> (25.7%)
  - Russia/FSU: 150 GtCO<sub>2</sub> (10.4%)
  - China: 145 GtCO<sub>2</sub> (10.1%)
  - Germany: 86 GtCO<sub>2</sub> (6.0%)
  - UK: 76 GtCO<sub>2</sub> (5.3%)
  - Japan: 57 GtCO<sub>2</sub> (4.0%)
  - India: 44 GtCO<sub>2</sub> (3.1%)
  - France: 36 GtCO<sub>2</sub> (2.5%)
  - ROW: 478 GtCO<sub>2</sub> (33.1%)
  - Average 1750-2013: 163 tCO<sub>2</sub> sec<sup>-1</sup>

2013 emissions: 36.1 GtCO<sub>2</sub>  
 • 2013 rate: 1,145 tCO<sub>2</sub> sec<sup>-1</sup>

Image courtesy of Carbon Visuals, UK, carbonvisuals.com

## Carbon Majors compared to global industrial CO<sub>2</sub> emissions to 2013

- Two-thirds — 65 percent — of all industrial CO<sub>2</sub> emissions since 1751 traced to 90 fossil fuel and cement producers.



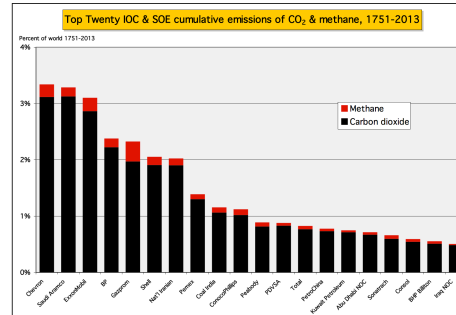
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## Top 20 investor- and state-owned producers' historic emissions to 2013, in percent of global 1751-2013

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 1751-2013
1. Chevron/Texaco, USA	47.31	1.51	3.43	52.25	3.34%
2. Saudi Aramco, Saudi Arabia	47.79	1.17	2.49	51.44	3.29%
3. ExxonMobil, USA	43.24	1.60	3.71	48.56	3.10%
4. BP, UK	33.76	1.06	2.43	37.25	2.38%
5. Gazprom, Russian Federation	28.52	2.34	5.54	36.40	2.33%
6. Royal Dutch Shell, The Netherlands	28.80	1.04	2.33	32.17	2.06%
7. National Iranian Oil Company	28.94	0.86	1.87	31.66	2.02%
8. Pemex, Mexico	19.70	0.64	1.42	21.76	1.39%
9. Coal India	16.68		1.41	18.09	1.16%
10. ConocoPhillips, USA	15.30	0.69	1.57	17.55	1.12%
11. Peabody Energy, USA	12.79		1.08	13.87	0.89%
12. Petroleos de Venezuela	12.64	0.36	0.77	13.77	0.88%
13. Total, France	11.63	0.39	0.86	12.88	0.83%
14. PetroChina, China	11.10	0.34	0.74	12.18	0.78%
15. Kuwait Petroleum Corp.	10.92	0.25	0.53	11.70	0.75%
16. Abu Dhabi	10.16	0.31	0.68	11.15	0.71%
17. Sonatrach, Algeria	8.88	0.44	1.02	10.34	0.66%
18. CONSOL Energy	8.52	0.01	0.73	9.25	0.59%
19. BHP Billiton	7.91	0.07	0.67	8.65	0.55%
20. Iraq NOC	7.44	0.16	0.33	7.92	0.51%

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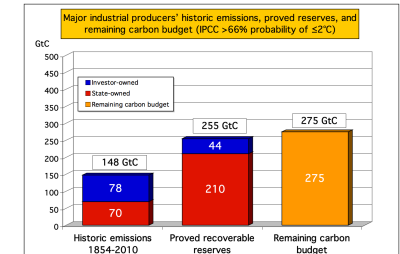
## Top 20 investor- and state-owned producers' historic emissions to 2013, in percent of global 1751-2013



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## Potential CO<sub>2</sub> emissions from reserves

- Fossil fuel proven reserves: 733 GtC (BP data, my estimate)
- "no more than one-third of proven reserves ... can be consumed prior to 2050 if the world is to achieve the 2 °C goal" — IEA 2012

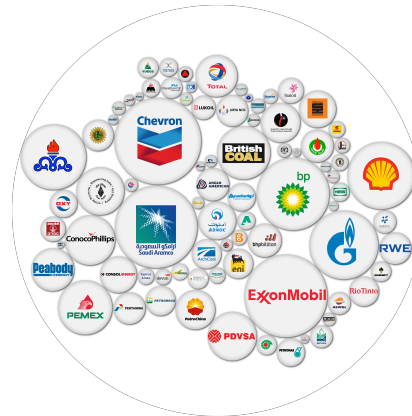


6

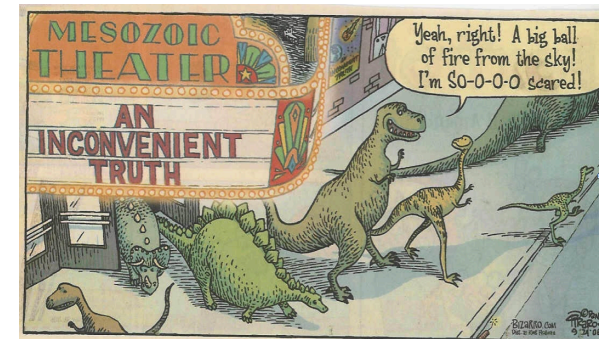
## Carbon Majors Update

- Climate Accountability Institute announces an update of Carbon Majors to 2013;
- CAI will provide future updates annually; data for 2014 to be released in October 2015;
- 2015 edition will include ten additional companies — such as Chesapeake Energy, Exxaro, Noble Energy, Wintershall, Samson Oil, Astra, and PetroEcuador — that meet the >8MtC/yr threshold;
- Update charts & summary PDF worksheets through 2013 url:

[climateaccountability.org/carbon\\_majors\\_update.html](http://climateaccountability.org/carbon_majors_update.html)



Carbon Visuals (UK) for Climate Accountability Institute



9