

Climate Change From Emissions Traced to Major Carbon Producers

Peter C Frumhoff PhD
Union of Concerned Scientists

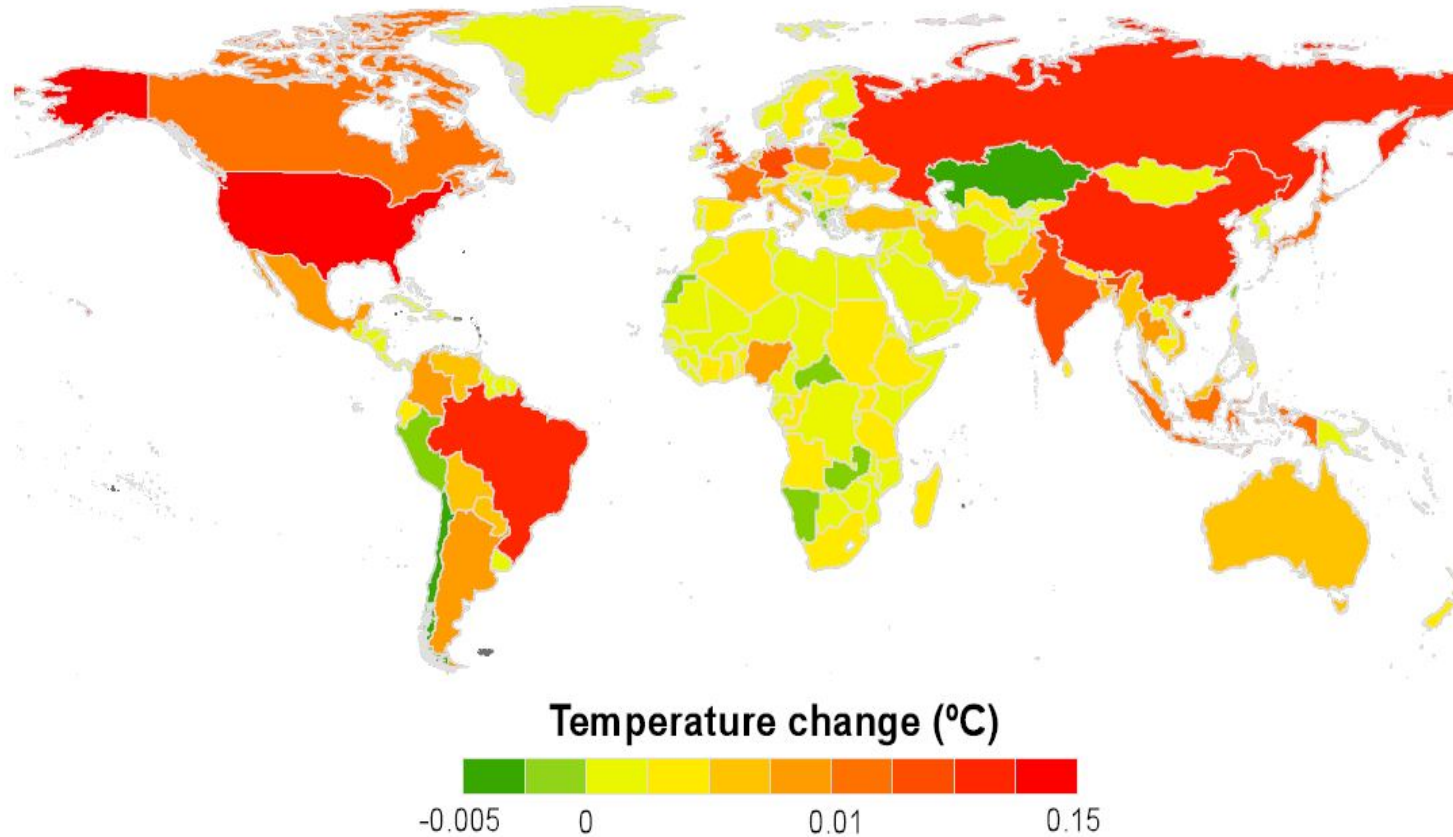
27 March 2018
Philippines Commission on Human Rights
Quezon City, Philippines



“common but differentiated
responsibilities” among nations

UNFCCC 1992

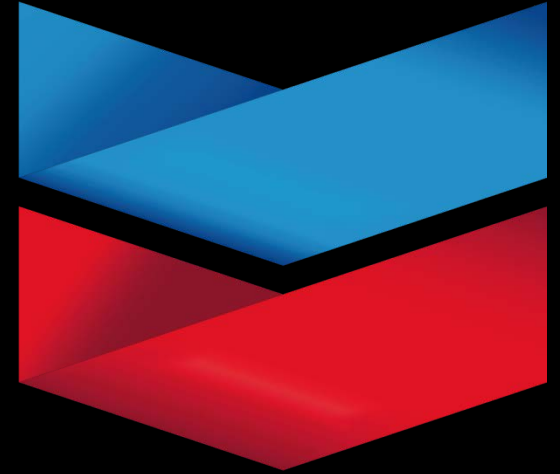
Contribution of *National Emissions* to Global Warming



Matthews et al 2014

Peabody
ENERGY

Chevron

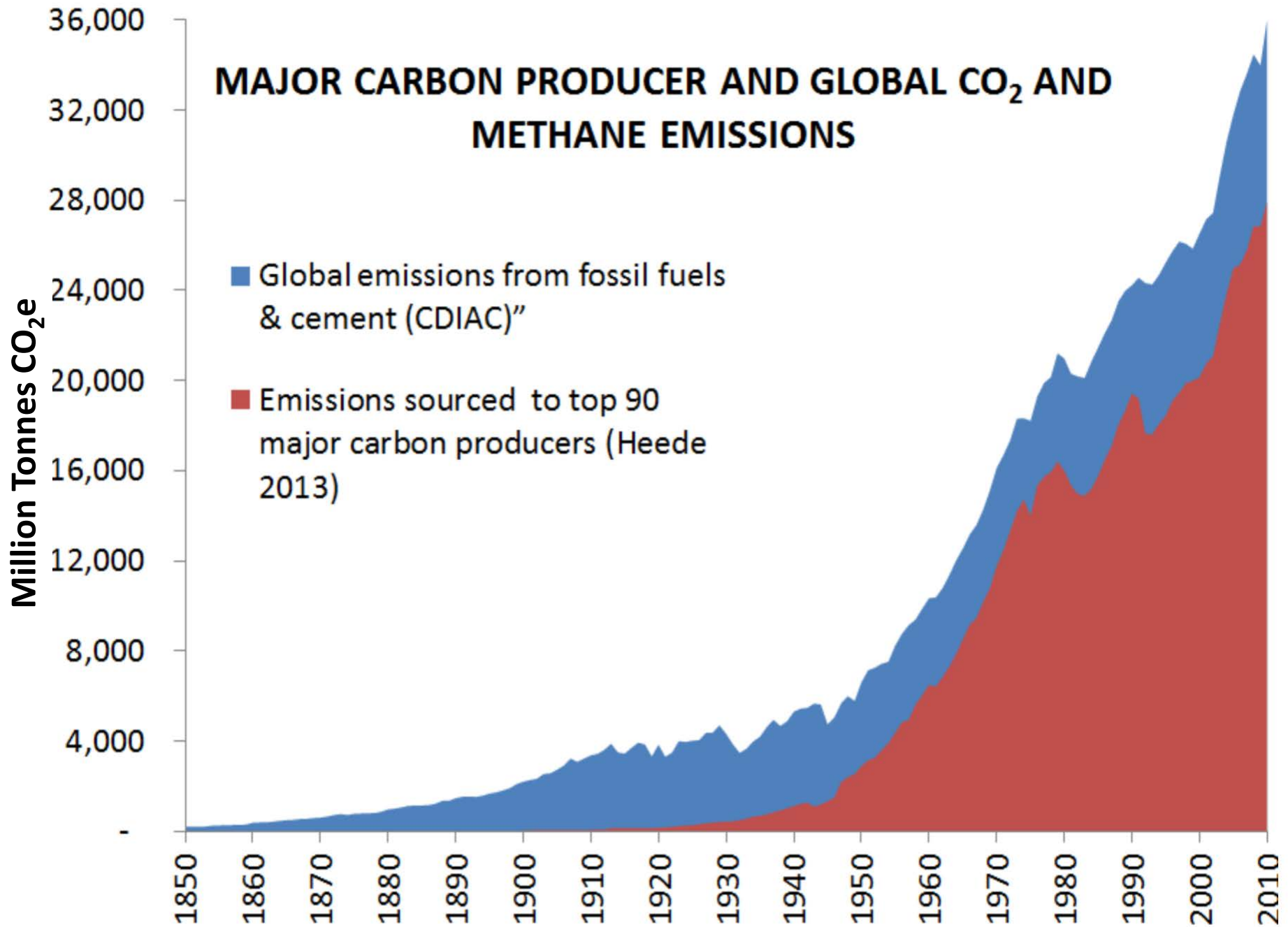


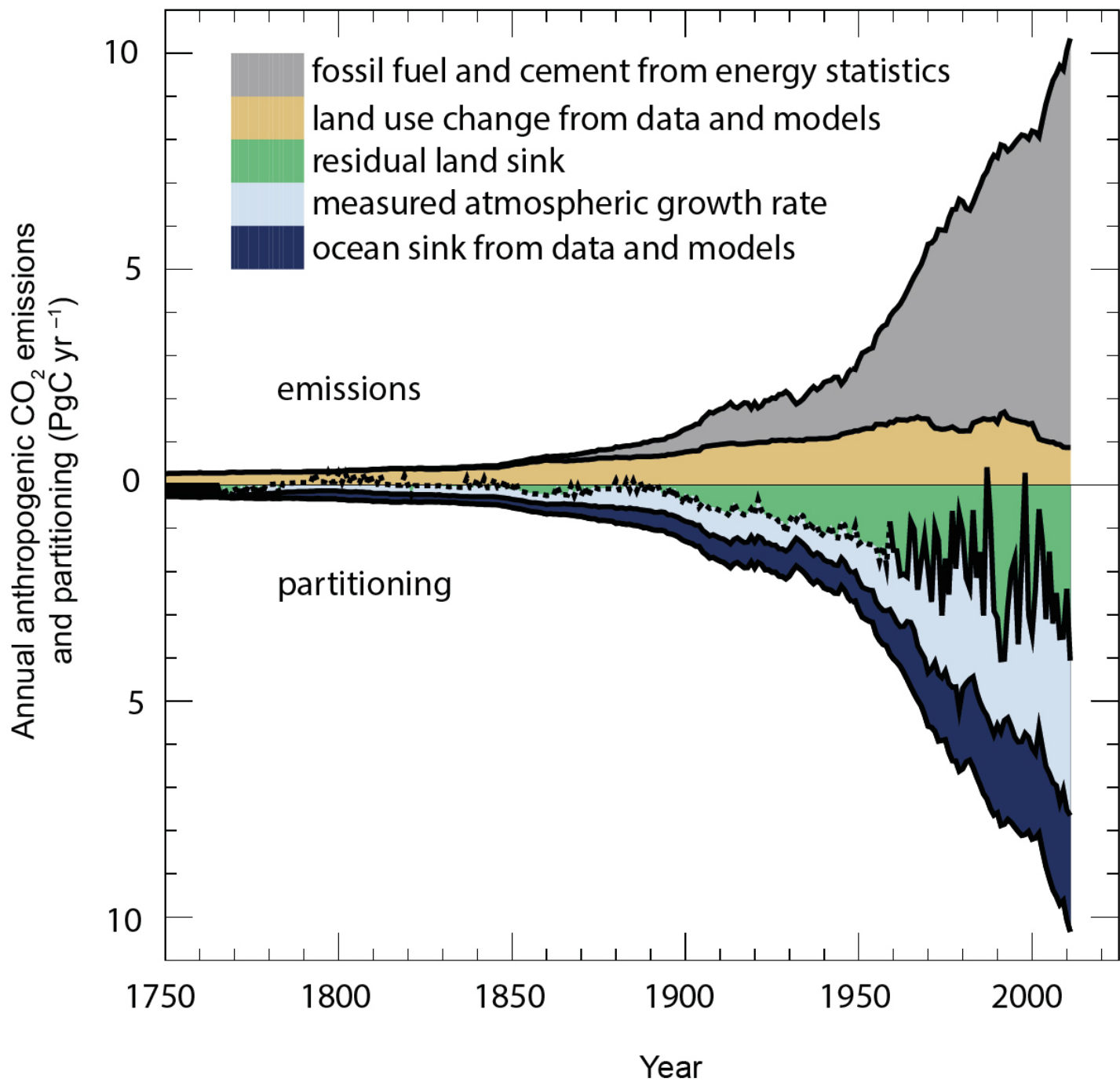
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Saudi Aramco



MAJOR CARBON PRODUCER AND GLOBAL CO₂ AND METHANE EMISSIONS





The rise in global atmospheric CO₂, surface temperature and sea level from emissions traced to major carbon producers



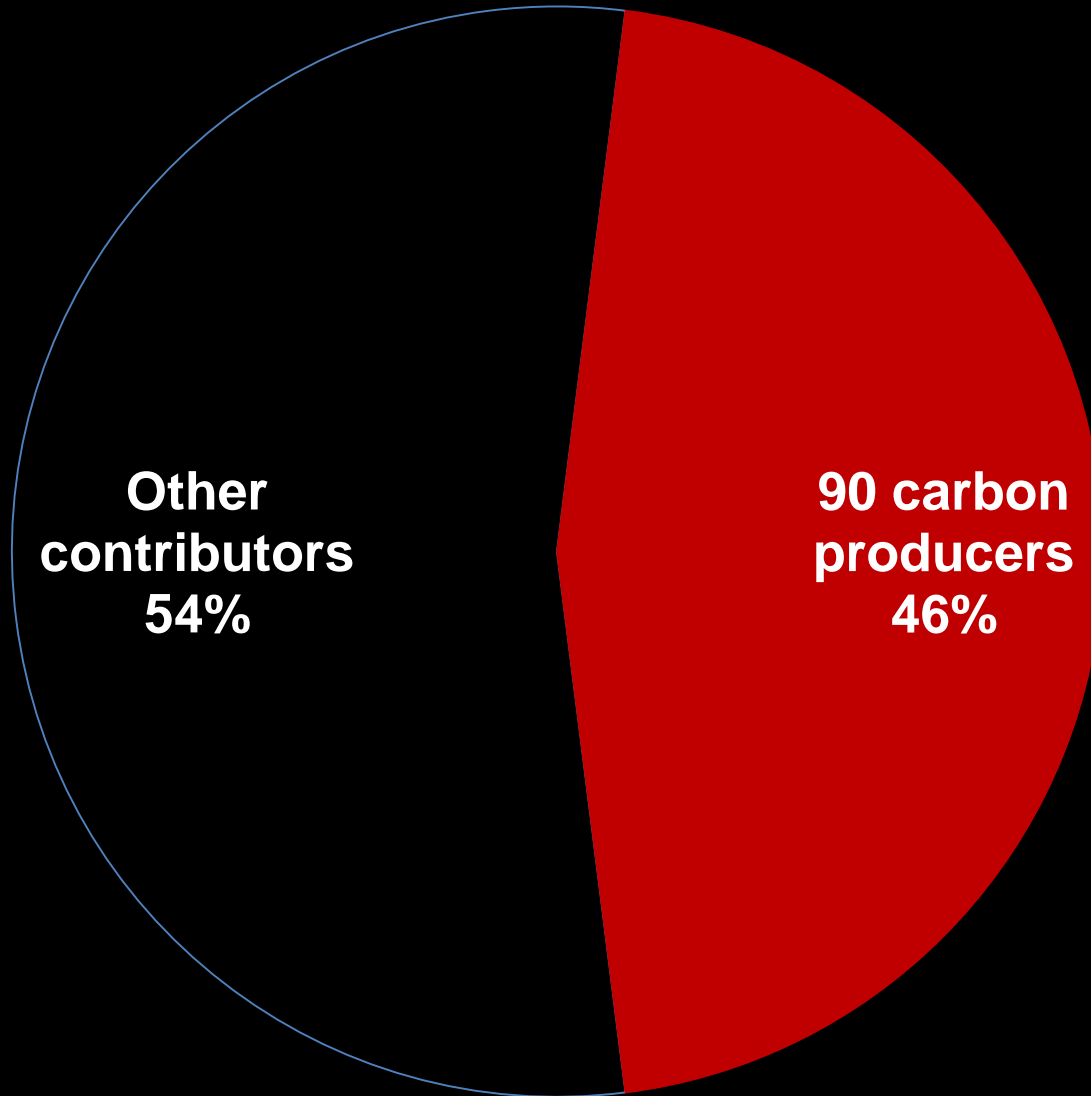
Source: NOAA

Ekwurz, B., J. Boneham, M.W. Dalton, R. Heede, R.J. Mera, M.R. Allen and P.C. Frumhoff. 2017 *Climatic Change* bit.ly/GAT_SLR

- Incorporated Heede data on annual emissions into a well-established carbon-cycle climate model
- Quantified differences in atm CO₂, global surface temp, and sea level w/ & w/out emissions from carbon producers
- Compared results for emissions 1880-2010 and 1980-2010

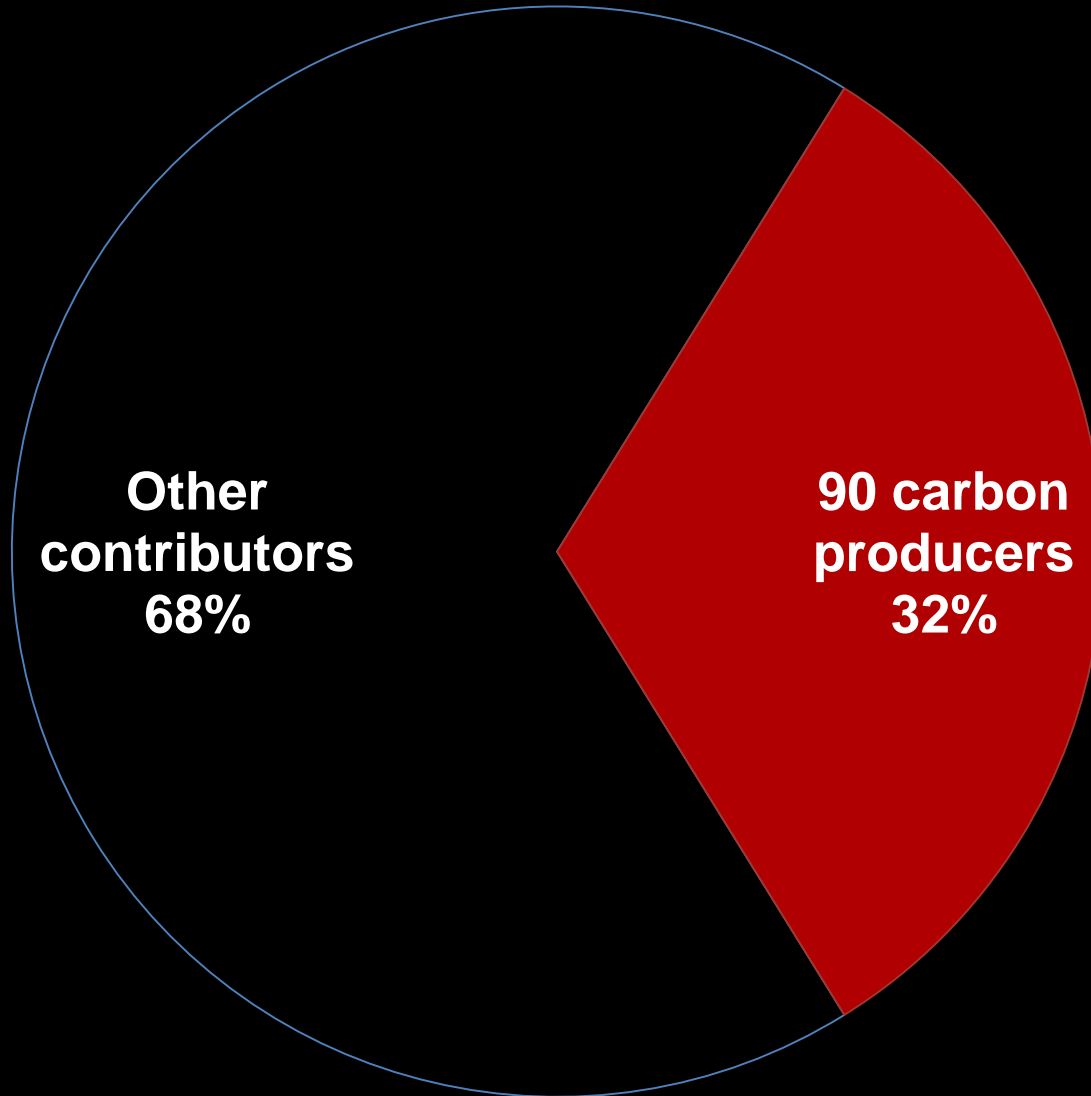


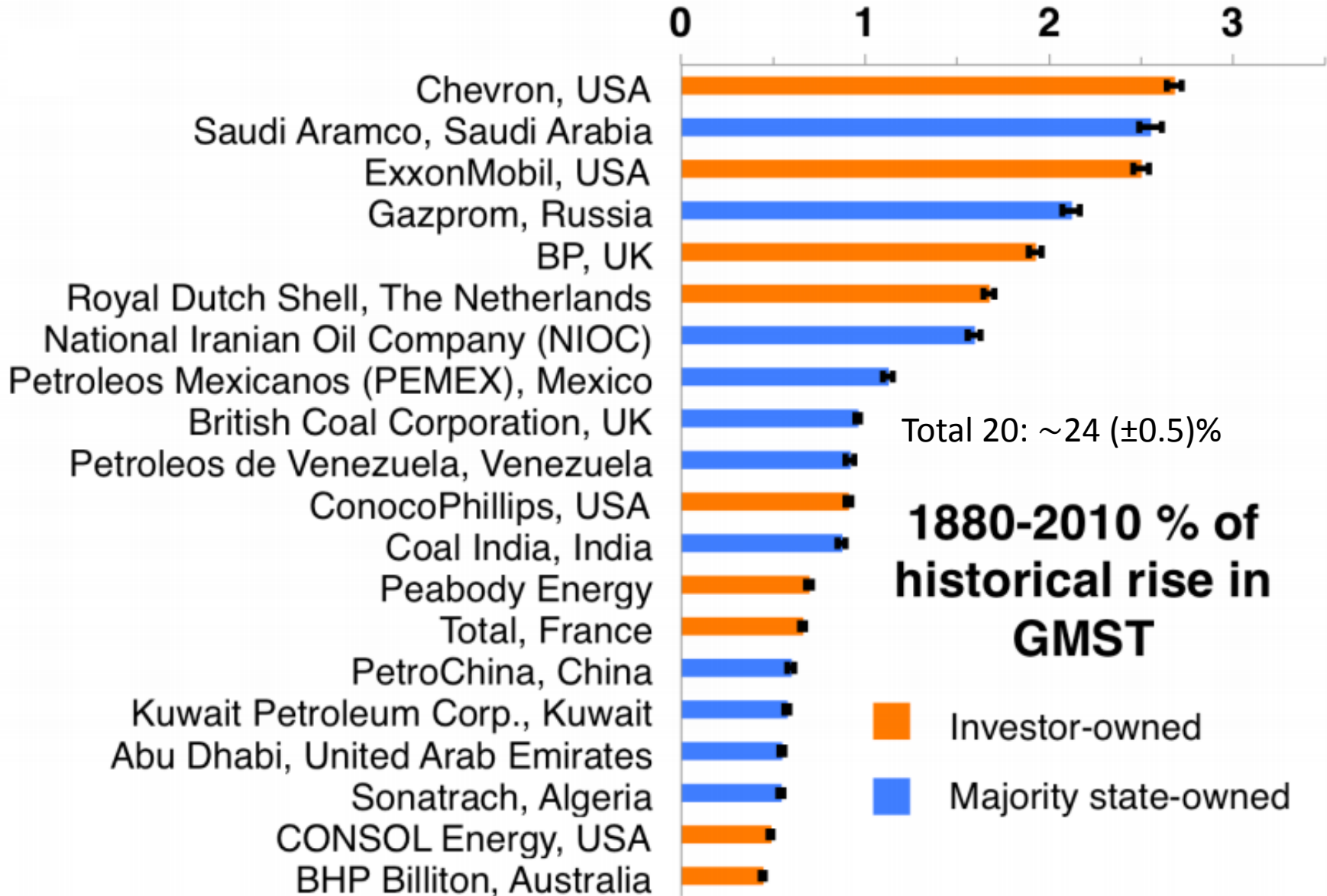
1880-2010 global temperature increase from **1880-2010 emissions**

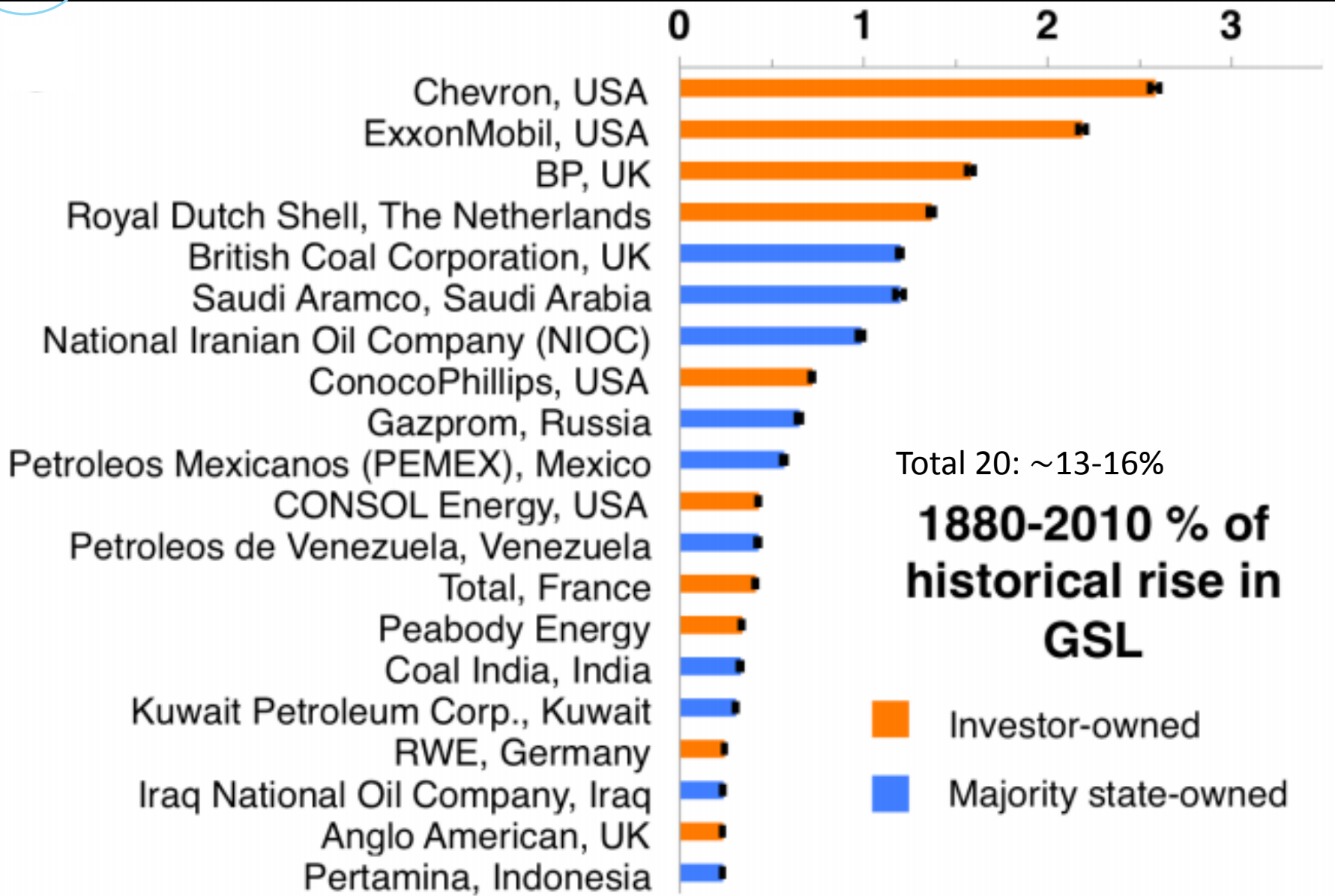




1880-2010 global temperature increase from 1980-2010 emissions







~1980 Oil Industry Knew about Harm

The American Petroleum Institute together with the nation's largest oil companies ran a task force to monitor and share climate research between 1979 and 1983 — N. Banerjee Dec 22,

2015 Inside Climate News



ExxonMobil



The Climate Deception Dossiers

*Internal Fossil Fuel Industry Memos Reveal
Decades of Corporate Disinformation*



measurement will be taken at one or more as yet to be determined locations as the plan is implemented.

Victory Will Be Achieved When

- Average citizens "understand" (recognize) uncertainties in climate science; recognition of uncertainties becomes part of the "conventional wisdom"
- Media "understands" (recognizes) uncertainties in climate science.
- Media coverage reflects balance on climate science and recognition of the validity of viewpoints that challenge the current "conventional wisdom"
- Industry senior leadership understands uncertainties in climate science, making them stronger ambassadors to those who shape climate policy
- Those promoting the Kyoto treaty on the basis of extant science appear to be out of touch with reality.

Current Reality

Unless "climate change" becomes a non-issue, meaning that the Kyoto proposal is defeated and there are no further initiatives to thwart the threat of climate change, there may be no moment when we can declare victory for our efforts. It will be necessary to establish measurements for the science effort to track progress toward achieving the goal and strategic success.



What should society expect “responsible” companies to do?

- *Renounce climate disinformation*
- *Plan for a world free from carbon pollution*
- *Support fair and effective climate policies*
- *Fully disclose climate risks*
- *Pay their fair share of climate damage and adaptation costs*



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When will climate polluters
pay their fair share?

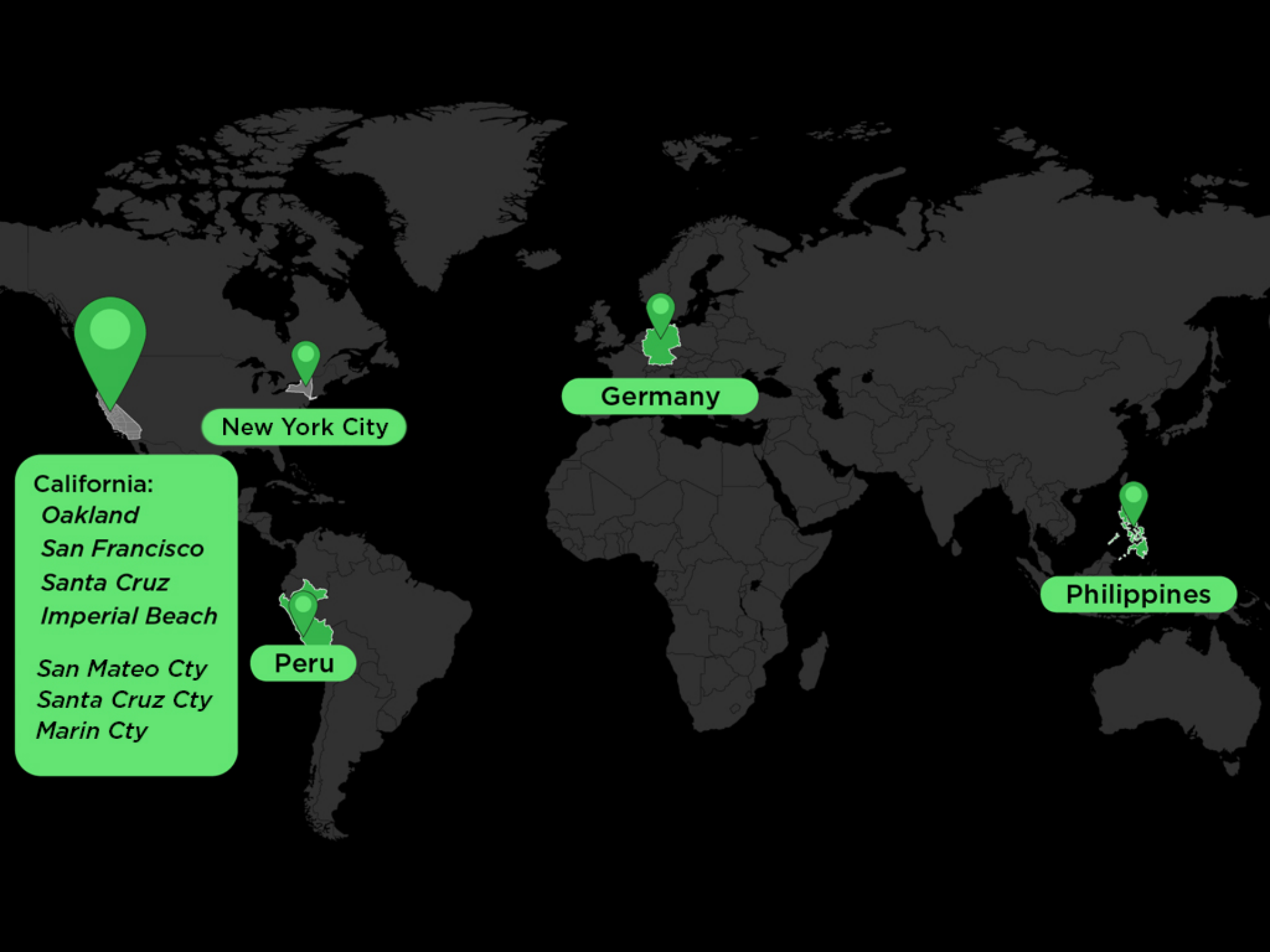
WhoPaysForHarvey.com

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Oakland
San Francisco
Santa Cruz
Imperial Beach

San Mateo Cty
Santa Cruz Cty
Marin Cty



New York City



Germany



Peru



Philippines

A silhouette of the Statue of Liberty stands prominently against a dramatic sunset sky. The sun is low on the horizon, casting a golden glow through the clouds. The water in the foreground is dark and rippled. The overall mood is serene and contemplative.

{ Thank You

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