

**Maine Legislature / Committee on Environment & Natural Resources**

Testimony in support of Legislative Document #1870 / for the 5 May 2025 hearing

3 May 2025

Honorable Members of the Environment & Natural Resources Committee -

This brief note is in support of LD 1870, the “Maine Climate Superfund Act.” Maine citizens, business-owners, and state and local governments should not bear the full financial burden of climate-driven damages and the resulting adaptation costs. It is eminently fair to require burden-sharing from the companies whose production and sale of carbon fuels have accelerated climate impacts and climate damages since 1995. Tax payers alone should not have to both suffer the consequences and pay for ameliorating the damages. I agree with the adage that whosoever makes a mess should clean it up.

I am the director of Climate Accountability Institute, founded in 2011 to research dangerous interference with the climate system, with a focus on the contribution of fossil fuel companies' carbon production to the rise of atmospheric carbon dioxide and to climate impacts, harms, and remediation.

In this note I will address the issue of the availability of data and reporting on fossil fuel producers' annual production of crude oil and natural gas liquids, natural gas and gas fuels, and coal that the Maine Climate Superfund Act relies on for the issuance of demands for payment from responsible parties.

According to my research, seventy-eight (78) oil, gas, coal, and cement producers worldwide meet the >1 billion tonne carbon dioxide equivalent (GtCO<sub>2</sub>e) threshold that the proposed legislation stipulates over the period from 1995 to 2024 (I show data 1995 to 2022 here). Note that this is before the list is pared down to include only those companies that have or currently do business in Maine; the final number of companies will therefore be far fewer than the 78 on my preliminary list.

The largest ten investor-owned oil, natural gas, and coal companies and their attributed production-related emissions from 1995 to 2022, and the percent of global fossil fuel & cement and overall GHG emissions over the same period, are:<sup>1</sup>

Top ten investor-owned oil, natural gas, & coal producers: attributed operational and product emissions				
Global Fossil Fuel & Cement CO <sub>2</sub> + CH <sub>4</sub>		949,827	MtCO <sub>2</sub> e	Global FF/Global GHG 70.37%
1995-2022		CO <sub>2</sub> & methane		% global FF % global GHG
		Million tCO <sub>2</sub> e		
1	ExxonMobil, USA	18,092		1.90% 1.34%
2	Shell, UK	16,485		1.74% 1.22%
3	BP, UK	14,609		1.54% 1.08%
4	Chevron, USA	13,430		1.41% 0.99%
5	Peabody Energy, USA	12,064		1.27% 0.89%
6	TotalEnergies, France	10,923		1.15% 0.81%
7	BHP Billiton, Australia	8,430		0.89% 0.62%
8	ConocoPhillips, USA	8,154		0.86% 0.60%
9	Lukoil, Russia	7,808		0.82% 0.58%
10	Equinor, Norway	6,694		0.70% 0.50%
Subtotal, top ten IOC oil, natural gas, & coal producers		116,690		12.29% 8.64%

MtCO<sub>2</sub>e = million tonnes CO<sub>2</sub>-equivalent. Table & research by R. Heede, Climate Accountability Institute.

A number of smaller entities are likely to meet LD 1870's definition of responsible party with a commercial nexus to Maine and that exceed the 1 GtCO<sub>2</sub>e threshold for inclusion.

The proposed legislation, in my reading of it, apportions demands for payment on each responsible party's share of the aggregate emission for all of the entities that extract oil, gas, or coal globally *and* whose global attributed production-related emissions 1995-2024 exceed 1 GtCO<sub>2</sub>e *and* that do or have done business in State of Maine. Production data are publicly available to the Maine Dept. of Environmental Protection (DEP) for its calculation of attributable emissions. DEP shall apply the US EPA Climate Hub emission factors, or use other publicly available emission factor sources.

<sup>1</sup> This leaves out several large state-owned companies such as Saudi Aramco (45,548 MtCO<sub>2</sub>e), Gazprom, Coal India, Petroleos de Venezuela, and others — some of which may have an economic nexus with Maine through U.S. subsidiaries.

Since my initial peer-reviewed paper in 2014 I have documented, calculated, and attributed production-related emissions for over 100 fossil fuel and cement producers historically from as early as 1854 to 2022.<sup>2</sup> This research relies on fossil fuel production reported by each investor-owned company in their filings with the Securities and Exchange Commission or in company annual reports to shareholders, as required by law, and applies a robust peer-reviewed methodology for estimating CO<sub>2</sub> emissions and energy-related methane to the atmosphere from each company's production and sale of finished carbon fuels to global consumers burning these fuels *as intended*. The methodology accounts for estimated non-energy uses of petroleum — used in petrochemicals, road oil, and lubricants — in order to more accurately reflect actual emissions to the atmosphere.

The updating of CAI's Carbon Majors project has been transferred to InfluenceMap (London).<sup>3</sup> The methodology is fully described in detailed reports & in peer-reviewed papers available on request.

The Dept. of Environmental Protection or its expert consultants can independently acquire company annual reports, or request production data from InfluenceMap, Climate Accountability Institute, or from the responsible parties directly, and calculate estimated emissions attributable to each responsible party from both fossil fuel production and refining as it sees fit.

In addition, the proposed legislation includes emissions attributable to petroleum refiners that also meet the Maine business requirement for the same period of time. Data on refinery output (or, commonly, throughput or input) is generally less publicly available than company-reported data on oil, gas, and coal production. I expect data on responsible parties' global refinery output for those companies that have a business nexus with the State of Maine and its homeowners, consumers, and businesses to be publicly available. If not, a data request to the potential responsible parties might resolve the paucity of published information.

Emissions from prospective responsible parties are based on each company's global energy production, regardless of where extracted, refined, sold, and consumed, and not limited to attributed emissions in Maine. A global perspective is appropriate, since global emissions drive climate change. It is also appropriate to focus on recent historical emissions, and commencing the period of time from the first Conference of the Parties in 1995 provides a reasonable time frame.

There are definitional issues that warrant further consideration. Care should be taken to avoid double-counting emissions attributed to companies that both extract fossil fuels and refine crude oil into petroleum products. The provision in LD 1870 that allows appeals by companies is an appropriate safeguard, since they alone possess the detailed data on sources of crude oil and inputs to their refineries and can help correct the record where warranted.

Climate costs as determined by the Treasurer of State can be apportioned on the basis of publicly available fossil fuel production and refining data, coupled with a methodology to estimate emissions resulting from fossil fuel extraction or refining of petroleum products.

The proposed legislation takes a useful step forward in seeking financial compensation from the companies that have produced or refined carbon fuels historically since 1995 that are now driving climate impacts and climate damages. Mainers should not be solely responsible for suffering the damages as well as paying the costs of adaptation and resilience-building without compensation from the industry that has known for decades that its products would cause climate-related harms.

Respectfully,



Director, Climate Accountability Institute.

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<sup>2</sup> Heede, Richard (2014) Tracing anthropogenic CO<sub>2</sub> & 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>

<sup>3</sup> InfluenceMap (2025) *Carbon Majors: 2023 Data Update*, by Emmett Connaire, London, March, 34 pp. <https://carbonmajors.org/briefing/The-Carbon-Majors-Database-2023-Update-31397>