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Exxon misled the public about climate change, Harvard study shows

Cambridge, MA — In the first comprehensive, academically peer-reviewed analysis of ExxonMobil's 40 year history of climate change communications, researchers at Harvard University have concluded that the company has misled the public about climate change.

A review of 187 public and internal Exxon documents found that, accounting for reasonable doubt, 83% of peer-reviewed papers authored by Exxon scientists and 80% of the company's internal communications acknowledge that climate change is real and human-caused. In contrast, only 12% of Exxon's advertorials directed at the public do so, with 81% instead expressing doubt.

"On the question of whether ExxonMobil misled non-scientific audiences about climate science, our analysis supports the conclusion that it did," says the academic study published today by Dr. Geoffrey Supran and Dr. Naomi Oreskes in the journal *Environmental Research Letters*. [Link to paper: http://iopscience.iop.org/article/10.1088/1748-9326/aa815f or http://iopscience.iopscience.iopscience.iopscience.iopscience.iopscience.iopscience.iopscience.iopscience.iopscience.iopscience.iopscience.iopscience.iopscience.iopscience.iopscience.iopscience.iop

These findings come as the <u>Attorneys General</u> of New York and Massachusetts and the <u>Securities and Exchange Commission</u> continue to investigate the oil and gas company for potentially misleading investors and the public about the risks of climate change. Exxon employees and shareholders have already filed <u>lawsuits</u> against the company on these grounds.

The year-long study is an expansive, quantitative, independent corroboration of the findings of investigative journalists, who ExxonMobil have <u>accused</u> of using "deliberately cherry-picked statements." This latest work goes further, showing both that ExxonMobil knew about the basic realities of climate change decades ago, and that the company simultaneously communicated positions that were at odds with this knowledge to the general public.

The authors explain that their research was prompted by ExxonMobil's <u>challenge</u> to the public: "Read all of these documents and make up your own mind."

"This paper takes up that challenge," the Harvard authors write.

The researchers used an established social science method called <u>content analysis</u> to characterize 187 of ExxonMobil's public and private publications about climate change spanning 1977 to 2014. These included ExxonMobil's peer-reviewed and

non-peer-reviewed scientific work, internal company memos, and paid, editorial-style advertisements ("advertorials") in *The New York Times*. Content analysis allowed Supran and Oreskes to evaluate the number of documents expressing different viewpoints on climate change, and thereby to quantify the consistency of ExxonMobil's climate communications.

The research looks at ExxonMobil's positions on climate change as real, human-caused, serious, and solvable, and at the company's acknowledgment of the risks of fossil fuel assets becoming 'stranded' by climate policy. In each case, the article concludes, "available documents show a systematic discrepancy between what ExxonMobil's scientists and executives discussed about climate change privately and in academic circles and what it presented to the general public." The authors found the topic of stranded assets to be "discussed and sometimes quantified in 24 documents of various types, but absent from advertorials."

In short, the paper finds, "ExxonMobil contributed quietly to the science and loudly to raising doubts about it." The company's academic publications had an average readership of tens to hundreds, whereas advertorial readerships were likely in the millions.

The Harvard paper is also explicit about its limitations. "We acknowledge that textual analysis is inherently subjective: words have meaning in context." Yet, the authors argue, "While one might disagree about the interpretation of specific words, the overall trends between document categories are clear."

To make these trends fully auditable, the peer-reviewed paper includes 121-pages of "Supplementary Information" [link to be added]. Here, the authors have tabulated all quotations, from all 187 analyzed documents, substantiating their conclusions.

The paper's acknowledgments state that this research was supported by Harvard University Faculty Development Funds and by the Rockefeller Family Fund.

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Other interesting findings of the analysis

Most of ExxonMobil's climate science has been spearheaded by one person.

"In 1986, scientist Haroon Kheshgi joined ER&E [Exxon Research and Engineering], and was henceforth ExxonMobil's principal (and only consistent) academic author, co-authoring 72% (52/72) of all analyzed peer-reviewed work (79% since his hiring). Indeed, the metadata title of the "Exxon Mobil Contributed Publications" file is "Haroon's CV."" (See section 4.1.1 of paper for details.)

• The Harvard study finds that "ExxonMobil's advertorials included several instances of explicit factual misrepresentation."

For example, "...an ExxonMobil advertorial in 2000 directly contradicted the IPCC and presented "very misleading" data, according to the scientist who produced the data." (See section 3.1.5 of paper for details.)

Advertorials were part of an ExxonMobil climate change communication plan

"Mobil/ExxonMobil bought AGW advertorials in the *NYT* specifically to allow "the public to know where we stand." Readerships were likely in the millions. The company took out an advertorial every Thursday between 1972 and 2001. They paid a discounted price of roughly \$31,000 (2016 USD) per advertorial and bought one-quarter of all advertorials on the Op-Ed page, "towering over the other sponsors" according to reviews of Mobil's advertorials by Brown, Waltzer, and Waltzer." (See section 4 of paper for details.)

• ExxonMobil's early estimates of the "carbon budget" — which implies risks of stranded fossil fuel assets, many have argued — "are within a factor of two of contemporary estimates." (See section 3.4.2 of paper for details.)