



CHARGING BIG OIL COMPANIES/CEOs WITH RECKLESS ENDANGERMENT

Preliminary Prosecution Memo for New York

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Table of Contents

Executive Summary	1
I. Offenses	4
A. Reckless endangerment in the second degree (NY PL § 120.20).....	4
B. Reckless endangerment in the first degree (NY PL § 120.25).....	4
II. Defendants	4
A. Corporate defendants.....	4
1. FFC targets.....	5
2. Charging FFCs collectively.....	8
B. Individual defendants.....	9
III. Prosecution’s Case	10
A. Climate disasters are creating serious risks of injury or death for New Yorkers.....	10
B. FFCs and their CEOs engaged in conduct that increased the risk of climate disasters.....	12
1. Emissions causing climate change.....	13
2. Deception about deadliness of emissions.....	14
a. Funding and distributing climate disinformation.....	14
i. Disinformation from front groups.....	18
ii. Direct disinformation efforts.....	20
b. Natural gas disinformation.....	23
c. Greenwashing.....	25
d. Causative impact of FFCs’ climate deception.....	28
C. FFCs and their executives acted recklessly.....	30
1. Knowledge of danger.....	31
2. Protecting company infrastructure.....	41
IV. Legal Questions	43
A. Would reckless endangerment charges be barred by the statute of limitations?.....	43
B. Can New York’s reckless endangerment law be applied to FFCs’ climate-related conduct?.....	43
C. Can conduct that creates generalized risk—versus risk for specific or proximate individuals—constitute reckless endangerment?.....	44
D. Is reckless endangerment in the first degree too difficult to prove?.....	45
E. Can FFCs argue that consumers are really to blame for climate harms?.....	46
F. Can FFCs claim a necessity defense?.....	47
G. Can a prosecution against FFCs for reckless endangerment be preempted?.....	48
H. Does the First Amendment protect FFCs’ false and misleading climate speech?.....	48
I. Can FFCs invoke a selective prosecution defense?.....	50
V. Conclusion	51

Executive Summary

The climate crisis, including a rapid escalation in extreme weather events, is causing severe harm to residents of New York. These disasters are in large part the result of reckless conduct undertaken by major fossil fuel companies (“FFCs”) like ExxonMobil, Chevron, Shell, and BP that are responsible for a substantial portion of all the global greenhouse gas emissions that have caused our planet to heat up.¹ Recent exposés of internal documents show that these FFCs have long understood with shocking accuracy² that their fossil fuel products would cause, in their own words, “catastrophic” climate harms³ that would “submerge New York,”⁴ do “great irreversible harm to our planet,”⁵ “cause flooding on much of the U.S. East Coast,”⁶ “have serious consequences for man’s comfort and survival,”⁷ create “more violent weather—more storms, more droughts, more deluges,”⁸ and cause “suffering and death due to thermal extremes.”⁹ Instead of finding new business models or at least warning the public and government officials, these companies conspired to wage a massive disinformation campaign to prevent regulators, investors, and the public from understanding the risks their products were creating.¹⁰ They have made trillions of dollars from this deception, and the people of New York are paying the price.¹¹

¹ *The Carbon Majors Dataset*, CARBON MAJORS (Apr. 2024), full dataset available at <https://carbonmajors.org/Downloads>. For the calculations used to determine these numbers, see <https://docs.google.com/spreadsheets/d/1Ft9E0nWNNRLmbpRZA-wRMeGD-HZY1SMV-euSpPkFmdU/edit?usp=s> haring.

² See, e.g., Oliver Milman, *Revealed: Exxon made ‘breathhtakingly’ accurate climate predictions in 1970s and 80s*, THE GUARDIAN (Jan. 12, 2023), <https://www.theguardian.com/business/2023/jan/12/exxon-climate-change-global-warming-research>.

³ Jimmie Nelson, *The CO2 Problem; Addressing Research Agenda Development*, AMERICAN PETROLEUM INSTITUTE, CLIMATE INVESTIGATIONS CENTER, 13 (Mar. 18, 1980), <https://www.industrydocuments.ucsf.edu/docs/gffl0228>.

⁴ Edward Teller et. al., *Energy Patterns of the Future*, ENERGY AND MAN: A SYMPOSIUM, 53, 58 (New York, Appleton-Century-Crofts, Nov. 1959).

⁵ Memo from M.B. Glaser to Exxon Management, *CO2 Greenhouse Effect* (Nov. 12, 1982), <https://www.climatefiles.com/exxonmobil/1982-memo-to-exxon-management-about-co2-greenhouse-effect/>.

⁶ *Id.*

⁷ Alan Oppenheis & William I. Donn, *Climate Models and CO2 Warming*, LAMONT-DOHERTY GEOPHYSICAL OBSERVATORY, COLUMBIA UNIVERSITY, 4–5 (Mar. 16, 1982), <http://assets.documentcloud.org/documents/2805626/1982-API-Climate-Models-and-CO2-Warming-a.pdf>.

⁸ Shell Confidential Group Planning, *Scenarios 1989–2010, Challenge and Response*, SHELL, 36 (Oct. 1989), <https://www.documentcloud.org/documents/23735737-1989-oct-confidential-shell-group-planning-scenarios-1989-2010-challenge-and-response-disc-climate-refugees-and-shift-to-non-fossil-fuels>.

⁹ Presentation by D.J. Devlin to Exxon Management, *Purported Impact of Climate Change on Human Health* (1996), <https://www.climatefiles.com/exxonmobil/1996-purported-impact-climate-change-human-health/>.

¹⁰ See, e.g., Benjamin Franta, *Big Carbon’s Strategic Response to Global Warming, 1950-2020*, STANFORD UNIVERSITY (2022); see also Section III.B.2.

¹¹ See, e.g., Matthew Taylor & Jillian Ambrose, *Revealed: Big Oil’s Profits Since 1990 Total Nearly \$2tn*, THE GUARDIAN (Feb. 12, 2020), <https://www.theguardian.com/business/2020/feb/12/revealed-big-oil-profits-since-1990-total-nearly-2tn-bp-shell-chevron-exxon>.

This conduct was not just amoral. It was criminal. Public Citizen has previously described how prosecutors could charge FFCs with homicide for deaths caused by climate disasters.¹² Another offense that FFCs could be charged with for substantially generating and fraudulently covering up the climate crisis is reckless endangerment.

This memorandum considers whether prosecutors in New York could charge FFCs or their CEOs with reckless endangerment for substantially contributing to the climate conditions that are creating an increased risk of lethal weather disasters in New York. Ultimately, it concludes that the case for such charges is strong enough to merit the initiation of criminal investigations by local prosecutors.

Though this memo asks a particular question—how officials in New York City could pursue reckless endangerment charges related to climate change—its analysis is relevant in all jurisdictions that have reckless endangerment statutes and have experienced climate disasters.¹³ This discussion is the starting point for any prosecutor who wants to build a case to protect their constituents from climate harms that are threatening public safety in communities across the country.

This memo proceeds in four parts.

I. Offenses

Part I lays out the elements of the crimes of reckless endangerment in the second and first degrees, the two New York state criminal offenses under consideration.

II. Defendants

Part II describes two possible classes of defendants for a climate-related reckless endangerment prosecution, which could focus on the world's largest investor-owned fossil fuel companies or

¹² See Cindy Cho et. al., *Charging Big Oil with Climate Homicide: Preliminary Prosecution Memo for July 2023 Heat Wave*, PUBLIC CITIZEN (Jun. 2024), <https://www.citizen.org/article/charging-big-oil-with-climate-homicide/>.

¹³ Most states have an analogous reckless endangerment offense with similar elements. See, e.g., Ala. Code § 13A-6-24, *Reckless endangerment*; Alaska Stat. § 11.41.250, *Reckless endangerment*; Colo. Rev. Stat. § 18-3-208, *Reckless endangerment*; Conn. Gen. Stat. § 53a-63, *Reckless endangerment in the first degree*; Del. Code tit. 11 § 604, *Reckless endangering in the first degree*; Florida Stat. 784.05, *Culpable negligence*; GA Code § 16-5-60, *Reckless conduct*; Haw. Rev. Stat. § 707-713, *Reckless endangering in the first degree*; 720 ILCS 5/12-5, *Reckless conduct*; Ind. Code § 35-42-2-2, *Criminal recklessness*; K.S.A. 21-5429, *Endangerment*; KRS § 508.060, *Wanton endangerment in the first degree*; M.G.L. c. 265 § 13L, *Wanton or reckless behavior creating a risk of serious bodily injury or sexual abuse to a child*; MRS Title 17-A, §211, *Reckless conduct*; MT Code § 45-5-208, *Negligent endangerment*; NH Rev. Stat. § 631:3, *Reckless conduct*; N.D. Cent. Code § 12.1-17-03, *Reckless endangerment*; ORS § 163.195, *Recklessly endangering another person*; 18 Pa. C.S. § 2705, *Recklessly endangering another person*; U.C.A. § 76-5-112, *Reckless Endangerment*; 13 V.S.A. § 1025, *Recklessly endangering another person*; RCW 9A.36.050, *Reckless endangerment*; Wis. Stat. § 941.30, *Recklessly endangering safety*; Wyo. Stat. Ann. § 6-2-504, *Reckless endangering*.

the individual leaders of these companies. It also describes how multiple defendants could potentially be charged collectively in the context of a broader conspiracy prosecution.

III. Prosecution's Case

This section lays out the prosecution's case. Part III.A discusses the ways climate disasters are currently endangering the lives of New Yorkers. Part III.B summarizes how FFCs have increased the risks of these disasters for New Yorkers, detailing both how they directly generated a substantial portion of all the greenhouse gas emissions that have caused the planet to heat up and, relatedly, how they deceived the public about the dangers of greenhouse gas emissions in ways that led to additional emissions and worse global warming. Finally, Part III.C analyzes the FFCs' mental states, summarizing the publicly available evidence showing that they were aware of and consciously disregarded the risk that the conduct described in Part III.B would cause serious injuries or deaths. It shows that FFCs were predicting several decades ago that their actions would cause dangerous climate disasters like those that have resulted in death and injury to New Yorkers, and that they were sufficiently confident in their science that they based business decisions on their climate predictions.

IV. Legal Questions

This section answers and assesses questions prosecutors may have and likely legal defenses that FFCs may assert. Part IV.A discusses why, because reckless endangerment can be charged as a continuing offense, statutes of limitations are likely not a major concern. Part IV.B demonstrates that New York's reckless endangerment laws are not limited in the kind of conduct they criminalize, so long as the conduct meets the elements of the offense. Part IV.C discusses the New York case law showing that reckless endangerment covers the kind of generalized risk created by climate change. Part IV.D examines in more detail the differences between reckless endangerment in the second and first degrees. Part IV.E rebuts the likely industry argument that consumers, not FFCs, are to blame for climate change. Part IV.F explains why FFCs cannot assert a successful necessity defense. Part IV.G addresses the issue of federal preemption, which to our knowledge has never been applied to a generally applicable state criminal law. Finally, Part IV.H discusses why FFCs will struggle to invoke a defense of selective prosecution.

I. Offenses

A. Reckless endangerment in the second degree (NY PL § 120.20)

Reckless endangerment in the second degree occurs when someone “recklessly engages in conduct which creates a substantial risk of serious physical injury to another person.” To prosecute this offense, the State must prove the following elements beyond a reasonable doubt:

1. The defendant engaged in conduct which created a substantial risk of serious physical injury to another person; and
2. The defendant was aware of and consciously disregarded that risk, which was of such nature and degree that disregard of it constituted a gross deviation from the standard of conduct that a reasonable person would have observed in the situation.

B. Reckless endangerment in the first degree (NY PL § 120.25)

Reckless endangerment in the first degree occurs when someone, “under circumstances evincing a depraved indifference to human life, [] recklessly engages in conduct which creates a grave risk of death to another person.” To prosecute this offense, the State must prove the following elements beyond a reasonable doubt:

1. The defendant engaged in conduct which created a grave risk of death to another person; and
2. The defendant was aware of and consciously disregarded that risk, which was of such nature and degree that disregard of it constituted a gross deviation from the standard of conduct that a reasonable person would have observed in the situation.
3. The defendant acted with an utter disregard for the value of human life, meaning they acted not because they intended harm, but because they simply didn’t care whether grievous harm resulted or not.¹⁴

II. Defendants

Prosecutors could focus a climate-related reckless endangerment prosecution on one of two classes of defendants. Either they could pursue corporate prosecutions against major FFCs, or they could pursue individual prosecutions against the executives of those FFCs.

A. Corporate defendants

¹⁴ *People v. Feingold*, 7 N.Y.3d 288, 819 N.Y.S.2d 691, 852 N.E.2d 1163 (2006).

Corporations have been charged with reckless endangerment in New York in the past,¹⁵ with resulting convictions often connected to a sentence of conditional discharge.¹⁶ In a climate-related reckless endangerment prosecution, such a sentence could include conditions directly related to FFCs’ ongoing climate-exacerbating conduct, in addition to restitution for the victims of climate disasters (which, given the vast scope of harm from such events, could be considerable).

1. FFC targets

The FFC targets for such a prosecution could include many of the world’s largest investor-owned fossil fuel companies, including:

- ExxonMobil;¹⁷
- Chevron;¹⁸

¹⁵ See, e.g., *People v. Roth*, 1992, 80 N.Y.2d 239, 590 N.Y.S.2d 30, 604 N.E.2d 92; *People v. John Galt Corp.*, 113 A.D.3d 537, 979 N.Y.S.2d 305 (1st Dep’t 2014).

¹⁶ See NY PL § 65.05: “Except as otherwise required by section 60.05, the court may impose a sentence of conditional discharge for an offense [. . .] [W]hen the court imposes a sentence of conditional discharge the defendant shall be released with respect to the conviction for which the sentence is imposed without imprisonment or probation supervision but subject, during the period of conditional discharge, to such conditions as the court may determine”; see also § 65.05: “The conditions of probation and of conditional discharge shall be such as the court, in its discretion, deems reasonably necessary to insure that the defendant will lead a law-abiding life or to assist him to do so. [. . .] When imposing a sentence of probation or of conditional discharge, the court shall, as a condition of the sentence, consider restitution or reparation and may, as a condition of the sentence, require that the defendant [. . .] [a]void injurious or vicious habits; [. . .] make restitution of the fruits of his or her offense or make reparation, in an amount he can afford to pay, for the actual out-of-pocket loss caused thereby.”

¹⁷ Exxon Mobil Corporation (ExxonMobil) is a multinational, vertically integrated energy and chemical company that has been consistently ranked the world’s second largest oil company by revenue. *Global 500*, FORTUNE 500, <https://fortune.com/fortune500/2022/>. ExxonMobil is active in oil and gas exploration and production, refining, transport, distribution and marketing, petrochemicals, plastics, power generation, and trading. *Exxon Mobil Corp.: Overview*, GLOBALDATA, <https://www.globaldata.com/company-profile/exxon-mobil-corp/>. ExxonMobil’s post-1965 emissions represent 3.15% of all global CO₂ and methane emissions since the start of the industrial revolution. See Carbon Majors, *supra* note 1. ExxonMobil also has engaged in joint ventures with another carbon major, Petrobras, which is responsible for 0.75% of all global emissions in that same period, and with CNOOC, which is responsible for 0.29% of all emissions. See *Petrobras and ExxonMobil Form Strategic Alliance*, EXXONMOBIL (Dec. 14, 2017), https://corporate.exxonmobil.com/news/news-releases/2017/1214_petrobras-and-exxonmobil-form-strategic-alliance; Sabrina Valle, *Exxon Pours Billions Into Joint Venture With China National Offshore Oil Corporation*, REUTERS (Jan. 18, 2023), <https://gcaplain.com/exxon-pours-billions-into-joint-venture-with-china-national-offshore-oil-corporation/>. And ExxonMobil recently purchased Pioneer Natural Resources, which is responsible for 0.06% of all emissions in that period. *ExxonMobil announces merger with Pioneer Natural Resources in an all-stock transaction*, EXXONMOBIL (Oct. 11, 2023), https://corporate.exxonmobil.com/news/news-releases/2023/1011_exxonmobil-announces-merger-with-pioneer-natural-resources-in-an-all-stock-transaction. In sum, the post-1965 emissions of ExxonMobil and its joint venture affiliates represent 3.96% of all global emissions.

¹⁸ Chevron Corporation (Chevron) is a multinational, vertically integrated energy and chemicals company. Chevron operates through a web of subsidiaries at all levels of the fossil fuel supply chain. Chevron and its subsidiaries’ operations include, but are not limited to: exploration, development, production, storage, transportation, and marketing of crude oil and natural gas; refining crude oil into petroleum products and marketing those products; and manufacturing and marketing commodity petrochemicals, plastics for industrial uses, and fuel and lubricant

- Shell;¹⁹
- BP;²⁰

additives. *Chevron Corp: Overview*, GLOBALDATA, <https://www.globaldata.com/company-profile/chevron-corp/>. Chevron's post-1965 emissions represent 3.27% of all global greenhouse gas emissions since the beginning of the industrial revolution. See Carbon Majors, *supra* note 1. Chevron also partners with other carbon majors worldwide. It has joint ventures with PDVSA, which is responsible for 1.17% of all emissions; with Eni, Sonangol, and TotalEnergies, which are respectively responsible for 0.62%, 0.23%, and 1.08% of all emissions; and with Nigerian National Petroleum, which is responsible for 0.72% of all emissions. See *Venezuela*, CHEVRON, <https://www.chevron.com/worldwide/venezuela>; *EU clears Angolan LNG joint venture by BP, Chevron, Eni, Sonangol and Total*, NS ENERGY (May 16, 2012), <https://www.nsenergybusiness.com/news/newseu-clears-angolan-lng-joint-venture-by-bp-chevron-enisonangol-and-total-170512/>; *Nigeria*, CHEVRON, <https://www.chevron.com/worldwide/nigeria>. In addition, in 2023 Chevron acquired Hess Oil, which is responsible for 0.20% of all emissions. *Chevron Announces Agreement to Acquire Hess*, CHEVRON, <https://www.chevron.com/newsroom/2023/q4/chevron-announces-agreement-to-acquire-hess>. In sum, the post-1965 emissions of Chevron and its joint venture affiliates represent 7.30% of all global emissions.

¹⁹ Shell plc (Shell) is a vertically integrated multinational energy and petrochemical company. Shell is the ultimate parent company of numerous divisions, subsidiaries, and affiliates that engage in all aspects of fossil fuel production, including exploration, development, extraction, manufacturing and energy production, transport, trading, marketing, and sales. *Shell plc: Overview*, GLOBALDATA, <https://www.globaldata.com/company-profile/royal-dutch-shell-plc/>. Shell's post-1965 emissions represent 2.42% of all global greenhouse gas emissions since the beginning of the industrial revolution. See Carbon Majors, *supra* note 1. Shell also has joint ventures with Gazprom, which is responsible for 3.57% of all emissions; National Iranian Oil Company, which is responsible for 2.92% of all emissions; China Petroleum, which is responsible for 1.33% of all emissions; Pemex, which is responsible for 1.74% of all emissions; Abu Dhabi National Oil Company, which is responsible for 1.22% of all emissions; Kuwait National Petroleum Corporation, which is responsible for 1.10% of all emissions; and Saudi Aramco, which is responsible for 4.82% of all emissions. See *Gazprom and Shell Review Progress of Joint Projects*, GAZPROM (Mar. 16, 2018), <http://www.gazprom.com/press/news/2018/march/article412883/>; Jackie Northam, *Energy Giant Shell Inks Oil Deal With Iran*, NPR (Dec. 7, 2016), <https://www.npr.org/sections/thetwo-way/2016/12/07/504729570/energy-giant-shell-inks-oil-deal-with-iran>; *Shell, CNPC Form Well Manufacturing JV (The Netherlands)*, OFFSHORE ENERGY (Jun. 20, 2011), <https://www.lngworldnews.com/shell-cnpc-form-well-manufacturing-jv-the-netherlands/>; *Pemex to Acquire Interest in Shell Texas Refinery*, OIL & GAS JOURNAL (Aug. 31, 1992), <https://www.ogj.com/home/article/17218678/pemex-to-acquire-interest-in-shell-texas-refinery>; *Shell and Pemex to coordinate a responsible handover of operations*, SHELL (May. 24, 2021), <https://www.shell.us/about-us/projects-and-locations/deer-park-manufacturing-site/shell-deer-park-news/shell-and-pemex-to-coordinate-a-responsible-handover-of-operations.html>; *ADNOC Gas Processing*, SHELL, <https://www.shell.ae/business-customers/adnoc-gas-processing.html>; *Kuwait Petroleum and Shell Sign Agreement for Long-Term Supply of LNG to Meet Domestic Energy Needs*, YAHOO! FINANCE (Dec. 27, 2017), <https://ca.finance.yahoo.com/news/wired-news-kuwait-petroleum-shell-123000989.html>; EdCrooks, *Royal Dutch Shell and Saudi Aramco unwind US joint venture*, FINANCIAL TIMES (Mar. 17, 2016), <https://www.ft.com/content/4e3f5764-ec01-11e5-9fca-fb0f946fd1f0>. In sum, the post-1965 emissions of Shell and its joint venture affiliates represent 19.13% of all global emissions.

²⁰ BP p.l.c. (BP) is a multinational, vertically integrated energy and petrochemical public limited company. BP is the parent company of numerous subsidiaries which explore for and extract oil and gas worldwide; refine oil into fossil fuel products such as gasoline; and market and sell oil, fuel, other refined petroleum products, and natural gas worldwide. *BP Plc: Overview*, GLOBALDATA, <https://www.globaldata.com/company-profile/bp-plc/>. BP's post-1965 emissions represent 2.57% of all global greenhouse gas emissions since the beginning of the industrial revolution. See Carbon Majors, *supra* note 1. BP also has joint ventures with the Iraq National Oil Company, which is responsible for 1.06% of all emissions, and with Sonatrach, which is responsible for 1.05% of all emissions. In addition, until 2022 BP had a 19.75% stake in Rosneft, which is responsible for 1.01% of all emissions. See *Reviving one of the world's super-giant oilfields*, BP, <https://www.bp.com/en/global/corporate/what-we-do/bp-worldwide/bp-in-iraq.html>; *BP Has a Long History of Working in Algeria*, BP, <https://www.bp.com/en/global/corporate/what-we-do/bpworldwide/bp-in-algeria.html>; Ron

- ConocoPhillips;²¹
- Occidental;²²
- BHP,²³ and
- Peabody.²⁴

These companies have generated a substantial proportion of all global greenhouse gas emissions: the emissions they have directly generated since 1965 (when the fossil fuel industry became

Bouso & Dmitri Zhdannikov, *BP quits Russia in up to \$25 billion hit after Ukraine invasion*, REUTERS (Feb. 28, 2022), <https://www.reuters.com/business/energy/britains-bp-says-exit-stake-russian-oil-giant-rosneft-2022-02-27/>. In sum, the post-1965 emissions of BP and its joint venture affiliates represent 5.69% of all global emissions.

²¹ ConocoPhillips is a multinational energy company that does fossil fuel exploration, extraction, production, manufacture, transport, and marketing. *ConocoPhillips: Overview*, GLOBALDATA, <https://www.globaldata.com/company-profile/conocophillips/>. ConocoPhillips' post-1965 emissions represent 1.17% of all global greenhouse gas emissions since the beginning of the industrial revolution. See Carbon Majors, *supra* note 1. ConocoPhillips also has joint ventures with QatarEnergy, which is responsible for 0.59% of all emissions. See Nishant Ugal, *ConocoPhillips to take a slice of QatarEnergy's massive North Field LNG project*, UPSTREAM (Jun. 22, 2022), <https://www.upstreamonline.com/lng/conocophillips-to-take-a-slice-of-qatarenergy-s-massive-north-field-lng-project/2-1-1241987>. In sum, the post-1965 emissions of ConocoPhillips and its joint venture affiliates represent 1.76% of all global emissions.

²² Occidental Petroleum (Occidental) is a petroleum and natural gas exploration company that engages in fossil fuel gathering, processing, treating, and transportation. The company also participates in the hard minerals business through its ownership of non-operated joint ventures and royalty arrangements. *Occidental Petroleum Corp: Overview*, GLOBALDATA, <https://www.globaldata.com/company-profile/occidental-petroleum-corp/>. Occidental's post-1965 emissions represent 0.83% of all global greenhouse gas emissions since the start of the industrial revolution. See Carbon Majors, *supra* note 1. Occidental also has joint ventures with Ecopetrol, which is responsible for 0.22% of all emissions. See *Ecopetrol and Occidental Form Strategic Partnership to Develop Acreage in Midland Basin*, PR NEWswire (Jul. 31, 2019), <https://www.prnewswire.com/news-releases/ecopetrol-and-occidental-form-strategic-partnership-to-develop-acreage-in-midland-basin-300894469.html>. In sum, the post-1965 emissions of Occidental and its joint venture affiliates represent 1.05% of all global emissions.

²³ BHP Group (BHP) is a multinational metals and petroleum company that is ranked as the world's largest mining company based on market capitalization. *BHP Group Ltd: Overview*, GLOBALDATA, <https://www.globaldata.com/company-profile/bhp/>. BHP's post-1965 emissions represent 0.77% of all global greenhouse gas emissions since the beginning of the industrial revolution. See Carbon Majors, *supra* note 1. BHP also has joint ventures with Anglo American, which is responsible for 0.52% of all emissions, and with Glencore, which is responsible for 0.44% of all emissions. Clara Denina, *Glencore snaps up BHP, Anglo stakes in Colombian coal mine*, REUTERS (Jun. 28, 2021), <https://www.reuters.com/business/energy/glencore-buy-out-jv-partners-bhp-anglo-colombian-coal-mine-2021-06-28>. In sum, the post-1965 emissions of BHP and its joint venture affiliates represent 1.73% of all global emissions.

²⁴ Peabody Energy Corporation (Peabody) is a multinational energy company and the world's largest coal extractor by volume whose primary business consists of the mining, sale and distribution of coal. *Peabody Energy Corp: Overview*, GLOBALDATA, <https://www.globaldata.com/company-profile/Peabody-Energy-Corp/>. Peabody has been voluntarily dismissed from civil climate accountability lawsuits in which it was initially named as a defendant because its liability was discharged in bankruptcy, but this would not apply to a criminal prosecution under the Bankruptcy Code's police powers exemption. 11 U.S.C. § 362(b)(4). Peabody's post-1965 emissions represent 1.19% of all global greenhouse gas emissions from 1965 to 2022. Peabody also has joint ventures with Coal India, which is responsible for 2.07% of all emissions. Mineweb, *Coal India to ink joint venture with Peabody*, MINING.COM (May 18, 2011), <https://www.mining.com/coal-india-to-ink-joint-venture-with-peabody/>. In sum, the post-1965 emissions of Peabody and its joint venture affiliates represent 3.26% of all global emissions.

unquestionably aware that its products were causing climate change²⁵) amount to 15.37% of all the fossil fuel emissions that humanity has generated since the start of the industrial revolution.²⁶ They have also engaged in joint ventures with additional carbon majors whose post-1965 emissions represent 44.17% of all global emissions.²⁷ And they were active members of organizations that played a key role in devising, funding, and executing the fossil fuel industry’s campaign of climate deception and disinformation,²⁸ including the Global Climate Coalition (“GCC”)²⁹ and the American Petroleum Institute (“API”).

2. Charging FFCs collectively

Though individual FFCs have each contributed substantially to creating the climate dangers that have caused death and injury to New Yorkers and that are continuing to put New Yorkers at risk of injury or death, their culpability becomes even clearer when considered collectively. Combining their dangerous conduct is intuitively appropriate given that these FFCs did, in fact, combine and conspire—including through industry trade organizations and climate-denying front groups—to block climate action and maintain their dangerous business model, as described in more detail in Section III.B.2 of this memo. Given this reality, prosecutors might consider prosecuting these FFCs collectively with a conspiracy charge.

The elements of a conspiracy offense are: (1) the specific intent that a crime be performed; (2) an agreement with another person or persons to engage in or cause that crime to be performed; and (3) an overt act committed by one of the conspirators in furtherance of the conspiracy.³⁰ Because of the intent requirement, it likely does not make sense to charge FFCs with conspiring to commit a crime of recklessness³¹ (although it’s worth noting that other jurisdictions have recognized that such offenses are cognizable³²). But there are related specific intent crimes that FFCs have

²⁵ See Ikard, *Meeting the Challenges of 1966*, in Proceedings of the American Petroleum Institute, 13 (1965), <https://www.documentcloud.org/documents/5348130-1965-API-Proceedings>.

²⁶ See Carbon Majors, *supra* note 1.

²⁷ *Id.*

²⁸ See Peter Jacques, Riley Dunlap & Mark Freeman, *The organisation of denial: Conservative think tanks and environmental scepticism*, ENVIRONMENTAL POLITICS 17 (3), 349–385 (2008), <https://www.tandfonline.com/doi/full/10.1080/09644010802055576>. See also Section III.B.2.a.i.

²⁹ *Global Climate Coalition Membership*, GLOBAL CLIMATE COALITION, (Nov. 16, 1989), <https://www.climatefiles.com/denial-groups/global-climate-coalition-collection/1989-membership/>; *Progress Report on U.S. Industry Voluntary Actions to Curb Greenhouse Gas Emissions: Report to the Global Climate Coalition*, GLOBAL CLIMATE COALITION, (Mar. 1996), <https://www.documentcloud.org/documents/5628940-GCC-1996-Report-on-Carbon-Emission-Actions-From.html>.

³⁰ See Penal Law §§ 105.00, 105.20.

³¹ See *Lindsay v. Lockwood*, 163 Misc.2d 228, 232, 625 N.Y.S.2d 393 (Sup.Ct., Monroe Co., 1994).

³² See *Commonwealth v. Arrington*, 247 A.3d 456, 462 (Pa. Super. 2021) (recognizing that “Conspiracy to Commit Involuntary Manslaughter is a cognizable offense in Pennsylvania”).

conspired to commit, such as criminal false advertising³³ and scheme to defraud.³⁴ Indeed, the City of New York is already suing ExxonMobil, Shell, BP, and API for false advertising “about the central role their products play in causing the climate crisis.”³⁵

A full treatment of New York’s criminal false advertising offenses is beyond the scope of this memo. But given that it was reasonably foreseeable that their conspiracy to spread disinformation through misleading advertising would lead to the reckless endangerment of New Yorkers, prosecutors should consider the strategic value of bringing charges of reckless endangerment against multiple FFCs in the context of a prosecution for their conspiracy to commit specific intent crimes like false advertising that would reasonably foreseeably lead to such endangerment.

B. Individual defendants

New York’s reckless endangerment offense does not “proscribe a particular resulting outcome or injury,” but rather criminalizes “the risk alone created by an actor’s conduct.”³⁶ As a result, proving this crime does not require the same demonstration of causation as offenses like reckless homicide or assault, where prosecutors need to prove beyond a reasonable doubt that a defendant’s conduct caused a specific victim’s injury or death; instead, proof is based on an “assessment of the degree of risk presented by defendant’s reckless conduct.”³⁷

Because of this more generalized causation requirement, it may be possible for prosecutors to charge individual FFC executives and demonstrate that they ordered, approved, or recklessly tolerated enough conduct over the course of their tenures to be held legally responsible for creating a substantial or grave risk of serious injury or death for New Yorkers.

One example of such an individual is Darren Woods, who has held the position of Chairman and CEO of ExxonMobil since January 1, 2017. Prior to that he served as a board member and president of ExxonMobil (starting on January 1, 2016); senior vice president of ExxonMobil (starting in 2014); vice president of ExxonMobil and president of ExxonMobil Refining and Supply Company (starting in 2012); vice president of supply and transportation for ExxonMobil Refining and Supply Company (starting in 2010); director of refining for Europe, Africa and the Middle East for ExxonMobil Refining and Supply Company (starting in 2008); vice president of

³³ See NY PL § 190.20, *False advertising*: “A person is guilty of false advertising when, with intent to promote the sale or to increase the consumption of property or services, he makes or causes to be made a false or misleading statement in any advertisement”.

³⁴ See NY PL § 190.65, *Scheme to defraud in the first degree*: “A person is guilty of a scheme to defraud in the first degree when he or she [. . .] engages in a scheme constituting a systematic ongoing course of conduct with intent to defraud ten or more persons or to obtain property from ten or more persons by false or fraudulent pretenses, representations or promises, and so obtains property from one or more of such persons”.

³⁵ *New York City, NY v. ExxonMobil et al.*, <https://climateintegrity.org/lawsuits/case/the-city-of-new-york>.

³⁶ *People v. Chrysler*, 1995, 85 N.Y.2d 413, 415, 626 N.Y.S.2d 18, 649 N.E.2d 1162.

³⁷ *Id.*

ExxonMobil Chemical Company (starting in 2005); and various other positions since joining Exxon in 1992.³⁸ Woods also served as the chairman and an executive committee member of API.³⁹

ExxonMobil has generated approximately half of all the emissions it has ever generated since Woods joined the company in 1992, and over one quarter of all its emissions since Woods became a vice president at the company in 2005.⁴⁰ Woods has played a major role in pushing for ExxonMobil to continue accelerating its emissions in recent years,⁴¹ despite the unequivocal scientific consensus that such developments will cause the climate to hit tipping points that will drastically increase the rate and scale of climate disasters experienced by New Yorkers.⁴² And Woods' leadership tenure at ExxonMobil and API has overlapped with a substantial portion of the climate deception efforts these entities have engaged in, as detailed in Section III.B.2 of this memo. Woods has also become fabulously wealthy through his leadership of ExxonMobil; from 2015, when the company began reporting his salary, through 2023, he received compensation of \$198.9 million.⁴³ He also owns 3.2 million shares of the company, worth \$371.1 million.⁴⁴

Prosecutors may need to seek additional information about the specific decisions that Woods has overseen, approved, or recklessly tolerated regarding the quantity and extent of ExxonMobil's fossil fuel production and sales; the marketing and advertising of their fossil fuel products; and the communications strategies they utilized concerning climate change and the link between fossil fuel use and climate harms. Criminal investigative techniques could allow prosecutors to map out in greater detail the reality that Woods, like many other FFC CEOs, has been in high-level management positions while his company has engaged in conduct that is recklessly exacerbating climate change and creating risk for New Yorkers.

III. Prosecution's Case

A. Climate disasters are creating serious risks of injury or death for New Yorkers

³⁸ *Management Committee*, EXXONMOBIL, <https://corporate.exxonmobil.com/who-we-are/our-approach/management-committee#DarrenWWoods>.

³⁹ *Id.*

⁴⁰ See Carbon Majors, *supra* note 1

⁴¹ See, e.g., Kevin Crowley, *Exxon's Plan for Surging Carbon Emissions Revealed in Leaked Documents*, BLOOMBERG (Oct. 5, 2020), <https://www.bloomberg.com/news/articles/2020-10-05/exxon-carbon-emissions-and-climate-leaked-plans-reveal-rising-co2-output?>.

⁴² See, e.g., Jesse Abrams et al., *Committed Global Warming Risks Triggering Multiple Climate Tipping Points*, EARTH'S FUTURE 11, 11 (Nov. 6, 2023), <https://doi.org/10.1029/2022EF003250>.

⁴³ Exxon Mobil Corporation, Schedules 14A (2016-2024).

⁴⁴ Exxon Mobil Corporation, Form 4 (12/1/2023), <https://www.sec.gov/Archives/edgar/data/34088/000112760223028600/xsIF345X05/form4.xml>.

New Yorkers' risk of sustaining injury or death due to climate-related disasters is rising rapidly, as both the probability of extreme weather events and the extent of harm they impose is increasing due to climate change. So-called "one-in-1,000 year" storms are becoming regular occurrences,⁴⁵ and these dangers are, with a high degree of scientific certainty, going to continue to worsen in the near future.⁴⁶ This accelerating risk should be a cause for deep alarm, particularly considering that New Yorkers have already been exposed to many climate-related dangers that could serve as the basis for a reckless endangerment prosecution.

In one relatively recent example, Hurricane Ida unleashed horrific destruction across the city, dumping nine inches of rainfall in less than a day, with a record-breaking 3.5 inches/hour in some areas.⁴⁷ Approximately 33,500 buildings were damaged in the storm, or roughly 3.3% of all buildings in the city.⁴⁸ And multiple New Yorkers were killed, mostly from drowning, with peer-reviewed analysis concluding that 13 of these deaths were "directly caused by Ida," on top of additional indirectly related deaths, and not counting those deaths resulting from delays or disruptions in medical care caused by the storm.⁴⁹

Storms like Ida also expose New Yorkers to additional dangers beyond just drowning, including "stressful evacuation, short- or long-term displacement from home, and exposures from clean up, repair, water contaminants, and mold from water damage."⁵⁰ These effects mirrored those of similar storms that have caused damage and death in New York both before and since Ida, such as Superstorm Sandy, Tropical Storm Isaias, and Tropical Storm Ernesto.⁵¹

The destructive power of these storms can in substantial part be attributed to climate change.⁵² In the case of Ida, abnormally hot water in the Gulf of Mexico caused by climate change fueled the

⁴⁵ See, e.g., Evan Bush, *On one night, two places in the Northeast get hit with 1-in-1,000 year rainfall*, NBC NEWS (Aug. 19, 2024),

<https://www.nbcnews.com/science/environment/northeast-two-instances-1-in-1000-year-rainfall-rcna167204>.

⁴⁶ See, e.g., William Ripple et al., *The 2024 state of the climate report: Perilous times on planet Earth*, BIOSCIENCE biae087 (Oct. 2024), <https://doi.org/10.1093/biosci/biae087>.

⁴⁷ *What Hurricane Ida and Superstorm Sandy taught us about flooding and health*, NEW YORK CITY ENVIRONMENT & HEALTH DATA PORTAL, <https://a816-dohbep.nyc.gov/IndicatorPublic/data-stories/flooding-and-health/>.

⁴⁸ *Hurricane Ida*, NEW YORK CITY COMMUNITY DEVELOPMENT BLOCK GRANT RECOVER, <https://www.nyc.gov/site/cdbgdr/hurricane-ida/hurricane-ida.page>.

⁴⁹ Ariel Yuan et al., *Immediate Injury Deaths Related to the Remnants From Hurricane Ida in New York City, September 1-2, 2021*, DISASTER MEDICINE AND PUBLIC HEALTH PREPAREDNESS 18, e55 (Apr. 2024), <https://www.cambridge.org/core/journals/disaster-medicine-and-public-health-preparedness/article/immediate-injury-deaths-related-to-the-remnants-from-hurricane-ida-in-new-york-city-september-12-2021/69BD8C527FD016A2CAC703C7023B2251>.

⁵⁰ Thomas Matte et al., *Climate change and New York City's health risk*, NEW YORK CITY PANEL ON CLIMATE CHANGE (Jun. 25, 2024), <https://doi.org/10.1111/nyas.15115>.

⁵¹ See, e.g., *Isaias Whips Through New York City*, SPECTRUM NEWS (Aug. 4, 2020), <https://ny1.com/nyc/all-boroughs/weather/2020/08/04/isaias-new-york-city-august-4>; Lola Fodula, *2 Women Die as Storm Batters New York and Connecticut*, NEW YORK TIMES (Aug. 19, 2024), <https://www.nytimes.com/2024/08/19/nyregion/long-island-flooding-rainfall-new-york.html>.

⁵² See Rebecca Hersher, *How Climate Change Is Fueling Hurricanes Like Ida*, NPR (Aug. 30, 2021), <https://www.npr.org/2021/08/30/1032442544/how-climate-change-is-fueling-hurricanes-like-ida>.

hurricane’s rapid intensification from a Category 1 to a Category 4 storm in just 24 hours.⁵³ In fact, over the past 40 years storms within a few hundred miles of coasts have become about three times more likely to intensify rapidly due to climate change.⁵⁴ Storms are also staying stronger farther inland than they did in the past, with warmer sea surface temperatures leading to a “slower decay” of storms by increasing the amount of moisture they can carry.⁵⁵ And they are generating more rainfall, as for every degree of warming, the atmosphere can hold 7 percent more water vapor that could fall as rain.⁵⁶ Indeed, a study funded by the U.S. Department of Energy’s Office of Scientific and Technical Information concluded that past human-caused climate change was directly responsible for up to half a million people’s exposure to Ida floodwaters.⁵⁷ Climate change is also making such extreme precipitation events more common, increasing the chances that New Yorkers will experience similarly dangerous threats in the near future.⁵⁸

Lethal storms are also just one of the many dangers climate change is creating or exacerbating for New Yorkers. For example, New York’s average daily temperature is already more than 3 degrees higher than it was in 1970,⁵⁹ and the increased heat and humidity are killing hundreds of people in New York City every year.⁶⁰ Like the prospect of extreme storms, the rate and scope of lethal heat waves in New York will also, with a high degree of scientific certainty, continue to worsen in the coming years.

These climate disasters are creating a “substantial risk of serious physical injury” to large numbers of New Yorkers, and—tragically, as evidenced by the many actual climate-related deaths New Yorkers have experienced—a “grave risk of death” as well.

B. FFCs and their CEOs engaged in conduct that increased the risk of climate disasters

FFCs engaged in conduct that causally contributed to climate change—conduct that was either directly approved or at least recklessly tolerated by the executives of these companies. FFCs

⁵³ *Id.*

⁵⁴ Y. Li *et al.*, *Recent increases in tropical cyclone rapid intensification events in global offshore regions*, NATURE COMMUNICATIONS 14, 5167 (Aug. 24, 2023), <https://doi.org/10.1038/s41467-023-40605-2>.

⁵⁵ Lin Li & Pinaki Chakraborty, *Slower decay of landfalling hurricanes in a warming world*, NATURE 587, 230–234 (Nov. 11, 2020), <https://doi.org/10.1038/s41586-020-2867-7>.

⁵⁶ Rachel Ramirez, *Climate change is making hurricanes stronger, slower, and wetter. Ida checked all the boxes*, CNN (Aug. 30, 2021), <https://www.cnn.com/2021/08/30/weather/hurricane-ida-climate-change-factors/index.html>.

⁵⁷ Xue Li *et al.*, *The Influence of Climate Change on Flooding and Social Inequalities from Remnants of Hurricane Ida*, U.S. DEPARTMENT OF ENERGY, OFFICE OF SCIENTIFIC AND TECHNICAL INFORMATION (Oct. 20, 2023), <https://www.osti.gov/biblio/2000435>

⁵⁸ Andra Garner, *Observed increases in North Atlantic tropical cyclone peak intensification rates*, SCIENTIFIC REPORTS 13, 16299 (Oct. 19, 2023), <https://www.nature.com/articles/s41598-023-42669-y>.

⁵⁹ *Climate Change Effects and Impacts*, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, <https://dec.ny.gov/environmental-protection/climate-change/effects-impacts>.

⁶⁰ *2024 NYC Heat-Related Mortality Report*, NEW YORK CITY ENVIRONMENT & HEALTH DATA PORTAL, <https://a816-dohbsp.nyc.gov/IndicatorPublic/data-features/heat-report/>.

produced, marketed, and sold fossil fuels that are responsible for a substantial portion of all the greenhouse gas emissions that have caused the planet to heat up. Relatedly, they deceived the public about the dangers of greenhouse gas emissions so that they could continue to produce, market, and sell fossil fuels, creating further risk of climate disasters. And FFCs are still engaging in this activity on an ongoing basis. This conduct has materially exacerbated and continues to exacerbate the climate crisis, which is putting New Yorkers at substantial or grave risk of injury or death.

1. Emissions causing climate change

It is possible to calculate net annual CO₂ and methane emissions attributable to specific companies by quantifying the amount and type of fossil fuel products a company extracts and places into the stream of commerce and multiplying those quantities by each fossil fuel product's carbon factor.⁶¹ Analyses using these calculations have shown that a relatively small number of major FFCs are responsible for the majority of all greenhouse gas emissions generated by humanity. Just 100 companies are responsible for 71% of all global greenhouse gas emissions generated since 1854,⁶² and just 57 companies are responsible for 80% of the emissions generated since 2016 (when the Paris Agreement was signed).⁶³

Since 1965, when the fossil fuel industry was definitively put on notice that its products were causing climate change,⁶⁴ just five modern-day investor-owned companies—ExxonMobil, Shell, BP, Chevron, and ConocoPhillips—have generated 12.58% of all the global CO₂ emissions that humanity has produced since the start of the industrial revolution.⁶⁵ Several other companies—Occidental, BHP, and Peabody—have collectively contributed 2.79% of all global emissions.⁶⁶ Together, these eight companies are directly responsible for 15.37% of all global emissions. Each of these FFCs have also engaged in many joint ventures with additional carbon majors, which, if counted, would bring their total contribution to global greenhouse gas emissions to 44.17%.⁶⁷

⁶¹ See Richard Heede, *Tracing Anthropogenic Carbon Dioxide and Methane Emissions to Fossil Fuel and Cement Producers, 1854–2010*, 122 CLIMATIC CHANGE 229-241 (2014), <https://link.springer.com/content/pdf/10.1007/s10584-013-0986-y.pdf>.

⁶² Tess Riley, *Just 100 companies responsible for 71% of global emissions, study says*, THE GUARDIAN (Jul. 10, 2017), <https://www.theguardian.com/sustainable-business/2017/jul/10/100-fossil-fuel-companies-investors-responsible-71-global-emissions-cdp-study-climate-change>.

⁶³ Jonathan Watts, *Just 57 companies linked to 80% of greenhouse gas emissions since 2016*, THE GUARDIAN (Apr. 3, 2024), <https://www.theguardian.com/environment/2024/apr/04/just-57-companies-linked-to-80-of-greenhouse-gas-emissions-since-2016>.

⁶⁴ See Ikard, *supra* note 25.

⁶⁵ See Carbon Majors, *supra* note 1.

⁶⁶ *Id.*

⁶⁷ *Id.*

Regarding the causative impact of these contributions to climate change, there is no current case law delineating the level of greenhouse gas emissions necessary to demonstrate criminal causation for climate-related injuries. However, there are relevant civil precedents that, while not directly on-point for an analysis of criminal causation, are informative and may be persuasive. In *Massachusetts v. EPA*, the U.S. Supreme Court articulated that, in cases alleging climate-related harms, a causal connection exists where the emissions “make a meaningful contribution to greenhouse gas contributions and hence [. . .] to global warming.”⁶⁸ The Court went on to rule that vehicle emissions from the U.S. transportation sector, which accounted for approximately 6% of global emissions, constituted a meaningful contribution and thus satisfied causation for standing purposes.⁶⁹ And in *Connecticut v. Am. Elec. Power Co. Inc.*, the Court held that the argument “that many others contribute to global warming in a variety of ways [. . .] does not defeat the causation requirement” and found that 2.5% of global emissions was satisfactory for the causation prong of a constitutional standing inquiry.⁷⁰ This is many times lower than the 15.37% of global emissions directly generated by the eight FFCs described above in the years after they were put on notice that their products were causing climate change, to say nothing of the even greater contributions associated with their joint venture partners.⁷¹

2. Deception about deadliness of emissions

FFCs deceived the public about the deadliness of greenhouse gas emissions through a long-running campaign of climate disinformation designed to block or delay the development of clean energy competitors so that FFCs could continue to produce, market, and sell fossil fuels. This campaign included (1) funding and distributing climate disinformation; (2) deceiving the public about the climate benefits of natural gas; and (3) “greenwashing” efforts to dupe consumers into believing that FFCs are addressing climate change and investing in low carbon energy, when in fact they are marketing and selling fossil fuels at record levels.

a. Funding and distributing climate disinformation

As an initial matter, FFCs spread overt climate disinformation throughout the 1990s and 2000s. One early example of their intention to deceive others regarding the harm caused by fossil fuels is a 1988 internal memorandum entitled “The Greenhouse Effect.” The memorandum, from Exxon Public Affairs Manager Joseph Carlson, articulated the company’s corporate strategy

⁶⁸ *Massachusetts v. EPA*, 549 U.S. 497, 524 (2007).

⁶⁹ *Id.* at 524–525.

⁷⁰ *Connecticut v. Am. Elec. Power Co. Inc.* (“AEP”), 582 F.3d 309, 347 (2d Cir.2009); *American Electric Power Co. v. Connecticut*, 564 U.S. 410 (2011).

⁷¹ The emissions percentages cited throughout this memo are based on FFCs’ self-reported data on their production of fossil fuels. There are different ways one could calculate their contributions to global emissions, such as FFCs’ total sales. For example, according to unpublished research from Richard Heede, Shell has sold approximately three times the amount of oil and gas it has directly produced, because it acquires, refines, and sells fossil fuels originally produced by different companies.

regarding fossil fuels' role in causing climate change.⁷² It stated that Exxon is “providing leadership through API in developing the petroleum industry position” on climate change.⁷³ It began by setting out the scientific consensus found by the company’s previous research that climate change is caused by the burning of fossil fuels, acknowledging that “Greenhouse gases are by-products of fossil fuel combustion”⁷⁴ and highlighting climate models that “predict a 1.50°C to 4.50°C global temperature increase—depending on the projected growth of fossil fuels.”⁷⁵ Despite reiterating this scientific consensus, the memorandum concluded by announcing Exxon’s “Position” on climate change: “Emphasize the uncertainty in scientific conclusions regarding the potential enhanced greenhouse effect” and “[r]esist the overstatement and sensationalization of potential greenhouse effect which could lead to noneconomic development of nonfossil fuel resources.”⁷⁶

The rationale behind this strategy can be seen very clearly in a 1989 presentation to Exxon’s Board of Directors by Duane LeVine, Exxon’s manager of science and strategy development.⁷⁷ This presentation took place shortly after the world had come together to phase out chlorofluorocarbons (CFCs), the chemicals responsible for thinning the ozone layer, and a large portion of LeVine’s message focused on a warning: If the fossil fuel industry didn’t act soon, it would be next.

⁷² Joseph M. Carlson, *The Greenhouse Effect*, EXXONMOBIL (Aug. 3, 1988), <http://www.climatefiles.com/exxonmobil/566>.

⁷³ *Id.* at 6.

⁷⁴ *Id.* at 1.

⁷⁵ *Id.* at 2.

⁷⁶ *Id.* at 8.

⁷⁷ Presentation by Duane LeVine to Exxon Board of Directors, *Potential Enhanced Greenhouse Gas Effects: Status and Outlook* (Feb. 22, 1989), <https://www.climatefiles.com/exxonmobil/1989-presentation-exxon-board-directors-greenhouse-gas-effects/>.

GIVEN, THE...

- COMPLEXITY OF THE SCIENCE
 - ENORMOUS POTENTIAL GLOBAL IMPACTS
 - DIVERSITY OF THE PLAYERS
- AND
- INTENSITY OF THEIR ACTIVITIES...

WHERE IS ALL THIS HEADED? I BELIEVE THERE IS A PATTERN...AND IT'S ROOTED IN THE EVOLUTION OF THE JUST-COMPLETED MONTREAL PROTOCOLS TO PROTECT THE STRATOSPHERIC O₃ LAYER BY LIMITING MAN-MADE CFCs.

STRATOSPHERIC OZONE/PEG ANALOGY

<u>OZONE LAYER</u>		<u>ENHANCED GREENHOUSE</u>		
74	✓	ATMOSPHERIC CHEM/PHYS	✓	78
	✓	GROWTH IN (CFCs) / (CO ₂) & (TRACE GASES)	✓	
	✓	INDUSTRIAL SOURCES	✓	
	✓	MODELS: END EFFECT PROJECTIONS	✓	
	✓	CONCEPT OF "DELAY"	✓	
	✓	ENVIRONMENTAL CAUSE	✓	
	✓	INTERNATIONAL OWNERSHIP	✓	
	✓	US/UN AXIS	✓	
	✓	CRITICAL EVENT	✓	
	✓	CALL FOR ACTION	?	
		<u>VIENNA CONVENTION</u>	?	
87		<u>MONTREAL PROTOCOLS</u>	?	

ABOUT 20 YEARS AGO, THE ATMOSPHERIC CHEMISTRY AND PHYSICS BEGAN WITH CONCERNS OVER THE EFFECT OF SUPERSONIC TRANSPORTS ON THE O₃ LAYER. AS THESE FEARS ABATED...IN 1974... SOME SCIENTISTS' LABORATORY TESTS INDICATED THAT THE VERY STABLE CLASS OF MAN-MADE CHEMICALS (CFCs) BREAK DOWN UNDER THE KIND

OF INTENSE UV RADIATION THAT IS PRESENT IN THE STRATOSPHERE...WITH THE RESULTING CL AND BR ATOMS ATTACKING AND DESTROYING O₃.

SUBSEQUENTLY, IT WAS ESTABLISHED THAT THE CFC CONCENTRATIONS WERE INCREASING IN THE STRATOSPHERE. THESE CFCs, OF COURSE, WERE EASILY TRACED TO MAN-MADE SOURCES AND INDUSTRIAL APPLICATIONS.

EXTENSIVE MODELING EXERCISES PREDICTED...

- THE LONG TERM RATE OF O₃ LAYER DETERIORATION
 - THE RESULTING INCREASED UV PENETRATION OF THE EARTH'S ATMOSPHERE
- AND
- THE SERIOUS POTENTIAL REPERCUSSIONS LIKE INCREASED HUMAN CANCER RATES AND PLANT DAMAGE

NOW THESE PREDICTED EFFECTS WERE WELL INTO THE FUTURE. SO A CRUCIAL STEP WAS THE INTRODUCTION OF "A DELAY CONCEPT" BASED ON THE UNUSUAL CHEMICAL STABILITY OF CFCs IN THE LOWER ATMOSPHERE AND THE VERY LONG TRANSPORT TIMES FOR CFCs TO REACH THE UPPER STRATOSPHERE. THE REASONING WAS...THERE WAS AN ALREADY COMMITTED O₃ LAYER DETERIORATION BASED ON CFCs ALREADY "IN THE PIPELINE". THIS GAVE RISE TO AN ENVIRONMENTAL CAUSE WHICH WAS QUICKLY ADOPTED AS AN INTERNATIONAL ISSUE. THE PLAYERS WERE BASICALLY SIMILAR TO THOSE ORGANIZING AROUND THE CURRENT

GREENHOUSE ISSUE...PRIMARILY IN THE US AND UN. WHEN THE US BECAME ACTIVELY INVOLVED...INITIATING COOPERATION WITH THE UN TO LIMIT WORLDWIDE CFC PRODUCTION AND SALES...ALL OF THE ELEMENTS WERE IN PLACE.

BUT WITH ALL OF THIS, PROGRESS BEGAN TO LANGUISH AND THE EFFORT MIGHT WELL HAVE FOUNDERED, EXCEPT FOR THE DISCOVERY OF THE SO-CALLED "O₃ LAYER HOLE" OVER ANTARCTICA. THIS WAS A MOST CRITICAL EVENT - ALTHOUGH ITS EXACT RELEVANCE TO CFC RELATED O₃ LAYER DETERIORATION REMAINS UNEXPLAINED. IT RE-ENERGIZED THE EFFORT AND DIRECTLY LED TO A "CALL FOR ACTION" AND THE VIENNA CONVENTION. SHORTLY THEREAFTER...IN 1987...THE MONTREAL PROTOCOLS TO LIMIT CFCs WITH A PHASED 50% REDUCTION BY THE TURN OF THE CENTURY WERE APPROVED AND ARE EXPECTED TO BE ADOPTED. I SHOULD ADD THAT IN 1988...JUST WITHIN THE PAST 6 MONTHS OR SO...THERE IS FOR THE FIRST TIME CONVINCING SCIENTIFIC EVIDENCE THAT O₃ LAYER DETERIORATION HAS BEEN DETECTED. SO THAT AFTER THE FACT...SOME ACTION SEEMS JUSTIFIED.

NOW, I HOPE FROM THE MATERIAL COVERED ON GREENHOUSE SO FAR...IT IS CLEAR THAT WE HAVE ADVANCED THROUGH SIMILAR STAGES. A CRITICAL EVENT OCCURRED WITH THE "LONG HOT SUMMER OF '88". ALTHOUGH MOST RESPONSIBLE SCIENTISTS BELIEVE THIS WAS DUE TO NATURAL FLUCTUATIONS IN WEATHER PATTERNS...IT HAS DRAWN MUCH ATTENTION TO THE POTENTIAL PROBLEMS AND WE'RE STARTING TO HEAR THE INEVITABLE CALL FOR ACTION. EXACTLY WHAT HAPPENS NOW IS NOT

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It's worth highlighting the timeline LeVine presented to the Exxon Board comparing the climate problem with the ozone problem and its eventual solution, the Montreal Protocol—an international policy response to the thinning of the ozone layer whose subsequent success offers concrete proof that humanity is able to overcome difficult global challenges in the absence of entrenched opposition.⁷⁸ LeVine laid out the major developments that led to the Montreal Protocol: the thinning of the ozone layer was discovered; a scientific consensus was established that the problem was caused by CFCs; the lagging effect of CFCs was accepted, meaning the problem needed to be dealt with immediately; the issue became an environmental cause; the United States and United Nations began to initiate the process for a policy response; a critical event spurred a call to action; and the Montreal Protocol was born.

⁷⁸ See Kelsey Piper, *Why the ozone hole is on track to be healed by mid-century*, Vox (Jan. 10, 2023), <https://www.vox.com/future-perfect/22686105/future-of-life-ozone-hole-environmental-crisis-united-nations-cfcs>.

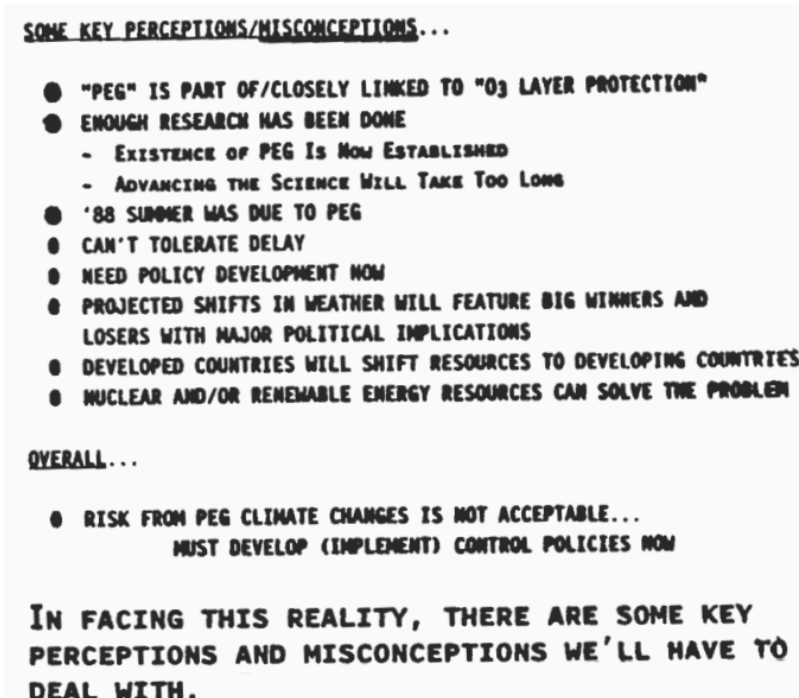
STRATOSPHERIC OZONE/PEG ANALOGY

<u>OZONE LAYER</u>		<u>ENHANCED GREENHOUSE</u>		
'74	✓	ATMOSPHERIC CHEM/PHYS	✓	'75
	✓	GROWTH IN [CFC'S] / [CO2] & [TRACE GASES]	✓	
	✓	INDUSTRIAL SOURCES	✓	
	✓	MODELS: END EFFECT PROJECTIONS	✓	
	✓	CONCEPT OF "DELAY"	✓	
	✓	ENVIRONMENTAL CAUSE	✓	
	✓	INTERNATIONAL OWNERSHIP	✓	
	✓	US/UN AXIS	✓	
	✓	CRITICAL EVENT	✓	
	✓	CALL FOR ACTION	?	
		<u>VIENNA CONVENTION</u>	?	
'87		<u>MONTREAL PROTOCOLS</u>	?	

Climate change, LeVine told Exxon's Board, was on the exact same trajectory. All of the ozone-related developments leading to the Montreal Protocol had already occurred in relation to climate change (see the check marks) except for the call for action and policy solution (see the question marks).⁷⁹ That is why the fossil fuel industry needed to intervene—to derail collective action that would solve climate change like it had solved the thinning of the ozone layer. To achieve this, LeVine presented to Exxon's Board a list of "key perceptions" that they needed to "deal with"—like that the "existence of [climate change] is now established" and that "nuclear and/or renewable energy resources can solve the problem"—in order to undermine the growing consensus that climate "risk" was unacceptable and required "control policies now."⁸⁰

⁷⁹ See LeVine, *supra* note 77, at 27.

⁸⁰ *Id.* at 30.



To accomplish these goals, Exxon and other FFCs worked to actively spread climate disinformation using both front groups and direct efforts.

i. Disinformation from front groups

FFCs developed and worked through various front groups—like the American Petroleum Institute (“API”), the Information Council on the Environment (“ICE”), and the Global Climate Coalition (“GCC”)—to execute their campaigns of climate deception.

API made its climate goals clear in one memorandum distributed to its members, which stressed: “Climate is at the center of the industry’s business interests. Policies limiting carbon emissions reduce petroleum product use. That is why it is API’s highest priority issue and defined as ‘strategic.’”⁸¹ To achieve this strategy, members of API developed a 1998 memorandum titled the “Global Climate Science Communication Team Action Plan” (“Action Plan”).⁸² The Action Plan issued a stark warning to API’s members: “Unless ‘climate change’ becomes a non-issue, [. . .] there may be no moment when we can declare victory for our efforts.”⁸³ It then detailed a scheme for how its FFC members would win “Victory” by achieving goals such as: “Average citizens

⁸¹ *Allegations of Political Interference with Government Climate Change Science*, Hearing Before the Comm. on Oversight and Government Reform, 110th Cong. 324 (Mar. 19, 2007), <https://www.govinfo.gov/content/pkg/CHRG-110hhrg37415/html/CHRG-110hhrg37415.htm>.

⁸² See Email from Joe Walker to Global Climate Science Team, GLOBAL CLIMATE SCIENCE COMMUNICATIONS ACTION PLAN (Apr. 3, 1998),

<https://insideclimatenews.org/wp-content/uploads/2015/12/Global-Climate-Science-Communications-Plan-1998.pdf>

⁸³ *Id.* at 2.

‘understand’ (recognize) uncertainties in climate science; recognition of uncertainties becomes part of the ‘conventional wisdom’”; “[m]edia ‘understands’ (recognizes) uncertainties in climate science”; “[m]edia coverage reflects balance on climate science and recognition of the validity of viewpoints that challenge the current ‘conventional wisdom’”; and “[t]hose promoting the Kyoto treaty on the basis of extant science appear to be out of touch with reality.”⁸⁴ The Action Plan then laid out a series of “Strategies and Tactics” to accomplish these objectives, like a \$5 million “Global Climate Science Data Center” that would “rais[e] questions about and undercut[] the ‘prevailing scientific wisdom’” that combustion of fossil fuels causes climate change, and a \$2 million fund to disburse to organizations that cast doubt on climate science, including the American Legislative Exchange Council and the Competitive Enterprise Institute.⁸⁵

A group of coal companies, including Chevron-owned Midway Coal Mining, formed ICE in 1991. That year, a report laid out ICE’s “Strategies,” the very first of which was to “Reposition global warming as theory (not fact).”⁸⁶ ICE conducted polling that found that 80% of respondents thought that the problem of climate change was “somewhat serious” and 45% thought it was “very serious.”⁸⁷ ICE sought to dismantle this consensus through a campaign directed at the public that included full-page newspaper advertisements, radio commercials, a public relations tour, and mailers. It targeted its advertisements at “older, less educated males,” among others, on the theory that members of this group are “not typically active information-seekers.”⁸⁸ One print advertisement prepared for the ICE campaign showed a sailing ship about to drop off the edge of a flat world into the jaws of a waiting dragon, with the headline, “Some say the earth is warming. Some also said the earth was flat.”⁸⁹ Another ad was targeted at Minneapolis readers and asked, “If the earth is getting warmer, why is Minneapolis getting colder?”⁹⁰

The GCC was another key group founded and directed by FFCs like ExxonMobil, Chevron, Shell, BP, and ConocoPhillips⁹¹ that worked to develop the fossil fuel industry’s campaign of climate deception.⁹² To provide just a few concrete examples, on December 22, 1992, GCC Executive Director John Schlaes wrote an Opinion Letter in *The New York Times* titled, “What Global Warming?” that directly contradicted GCC members’ scientific findings, claiming that there “is considerable debate on whether or not man-made greenhouse gases (produced primarily

⁸⁴ *Id.*

⁸⁵ *Id.* at 6–7.

⁸⁶ *Climate Deception Dossier #5: Coal’s ‘Information Council on the Environment’ Sham*, UNION OF CONCERNED SCIENTISTS, https://www.ucsusa.org/sites/default/files/attach/2015/07/Climate-Deception-Dossier-5_ICE.pdf.

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ Kathy Mulvey & Seth Shulman, *The Climate Deception Dossier Internal Fossil Fuel Industry Memos Reveal Decades of Corporate Disinformation*, UNION OF CONCERNED SCIENTISTS (July 2015), <https://www.ucsusa.org/sites/default/files/attach/2015/07/The-Climate-Deception-Dossiers.pdf>.

⁹⁰ *Id.*

⁹¹ See Global Climate Coalition, *supra* note 29.

⁹² See Jacques, Dunlap & Freeman, *supra* note 28.

by burning fossil fuels) are triggering a dangerous ‘global warming’ trend. [. . .] We know that climate change over the last 100 years is well within the planet's natural variation (the global climate has never been ‘stable’).”⁹³ In 1994, the GCC produced a report entitled “Issues & Options: Potential Global Climate Change,” which falsely asserted that “observations have not yet confirmed evidence of global warming that can be attributed to human activities.”⁹⁴ In 1995, the GCC published “Climate Change: Your Passport to the Facts,” a pamphlet designed for public consumption which falsely claimed that “there remains no scientific evidence that such a dangerous warming will actually occur.”⁹⁵

ii. Direct disinformation efforts

FFCs also spread disinformation directly, beginning at least as early as 1989. From 1989 to 2004, Mobil (Exxon) ran a series of advertorials (paid advertisements styled as editorials) in *The New York Times* to present its position on climate to consumers, investors, and voters. For example, in 1997 alone Mobil paid for advertorials falsely claiming:

- “[w]e still don’t know what role man-made greenhouse gases might play in warming the planet”;⁹⁶
- “[w]e don’t know enough about the factors that affect global warming and the degree to which—if any—that man-made emissions (namely, carbon dioxide) contribute to increases in Earth’s temperature”;⁹⁷
- “climatologists are still uncertain how—or even if—the buildup of man-made greenhouse gases is linked to global warming”;⁹⁸ and
- “there is a high degree of uncertainty over the timing and magnitude of potential impacts that man-made emissions of greenhouse gas emissions have on climate.”⁹⁹

Two Harvard University scholars found that 81% of Exxon’s and Mobil’s advertorials from 1989 through 2004 expressed doubt that climate change is real and caused by human activities.¹⁰⁰ By

⁹³ John Schlaes, *What Global Warming?*, THE NEW YORK TIMES (Dec. 22, 1992),

<https://www.nytimes.com/1992/12/22/opinion/l-what-global-warming-250692.html>.

⁹⁴ *Issues and Options: Potential Global Climate Change*, GLOBAL CLIMATE COALITION, 4 (1994),

<https://www.documentcloud.org/documents/5628164-Potential-Global-Climate-Change-Issues-and-Options>.

⁹⁵ *Climate Change: Your Passport to the Facts*, GLOBAL CLIMATE COALITION, 2 (1995),

<https://www.documentcloud.org/documents/5628109-Climate-Change-Your-Passport-to-the-Facts>.

⁹⁶ Geoffrey Supran & Naomi Oreskes, *What Exxon Mobil didn’t say about climate change*, THE NEW YORK TIMES (Aug. 22, 2017), <https://www.nytimes.com/2017/08/22/opinion/exxon-climate-change-.html>.

⁹⁷ Mobil, *Climate Change: A Prudent Approach*, THE NEW YORK TIMES (Nov. 13, 1997),

<https://www.documentcloud.org/documents/705548-mob-nyt-1997-11-13-climateprudentapproach.html>.

⁹⁸ Benjamin Franta, *Weaponizing economics: Big Oil, economic consultants, and climate policy delay*, ENVIRONMENTAL POLITICS, 33, 555-575 (Aug. 25, 2021),

<https://www.tandfonline.com/doi/full/10.1080/09644016.2021.1947636>.

⁹⁹ Mobil, *Climate Change: A Degree of Uncertainty*, THE NEW YORK TIMES (Dec. 4, 1997),

<https://www.documentcloud.org/documents/705551-mob-nyt-1997-dec-4-uncertainty>.

¹⁰⁰ Geoffrey Supran & Naomi Oreskes, *Assessing ExxonMobil’s climate change communications (1977–2014)*, ENVIRONMENTAL RESEARCH LETTERS, 12 (2017), <https://iopscience.iop.org/article/10.1088/1748-9326/aa815f>.

comparison, they found that 80% of the companies' internal documents recognized the link between climate change and human activities. Based on "this discrepancy," they concluded that "ExxonMobil misled the public."¹⁰¹

Martin Hoffert, a New York University physicist who served as a consultant to Exxon in the 1980s, expressed regret over Exxon's "climate science denial program campaign" in sworn testimony before Congress in 2019. As he put it:

The advertisements that Exxon ran in major newspapers raising doubt about climate change were contradicted by the scientific work we had done and continue to do. Exxon was publicly promoting views that its own scientists knew were wrong, and we knew that because we were the major group working on this.¹⁰²

These tactics continued into the 2000s. For example, in 2006, ExxonMobil published "Tomorrow's Energy: A Perspective on Energy Trends, Greenhouse Gas Emissions and Future Energy Options," a report that cast doubt on the link between greenhouse gas emissions and climate change, claiming:

[A] causal linkage between the buildup of greenhouse gases in the atmosphere and the observed climate changes during the 20th century cannot be unequivocally established.¹⁰³

More recently FFCs have publicly acknowledged the scientific reality of climate change. ExxonMobil recognized its own previous funding of climate denial groups in its 2007 Corporate Citizenship Report, in which ExxonMobil declared:

In 2008, we will discontinue contributions to several public policy research groups whose position on climate change could divert attention from the important discussion on how the world will secure the energy required for economic growth in an environmentally responsible manner.¹⁰⁴

Despite this pronouncement, ExxonMobil remained financially associated with several such groups after the report's publication, and contributed over \$13 million to think tanks and

¹⁰¹ *Id.*

¹⁰² *Examining the Oil Industry's Efforts to Suppress the Truth About Climate Change*, Hearing Before the Subcomm. on Civil Rights and Civil Liberties of the Comm. on Oversight and Reform, 116th Cong. 7–8 (Oct. 23, 2019) (statement of Martin Hoffert, Former Exxon Consultant, Professor Emeritus, Physics, New York University), <https://www.govinfo.gov/content/pkg/CHRG-116hhrg38304/html/CHRG-116hhrg38304.htm>.

¹⁰³ ExxonMobil, *Tomorrow's Energy: A Perspective on Energy Trends, Greenhouse Gas Emissions and Future Energy Options* (2006).

¹⁰⁴ ExxonMobil, *2007 Corporate Citizenship Report* 41 (Dec. 31, 2007), <http://www.documentcloud.org/documents/2799777-ExxonMobil-2007-Corporate-CitizenshipReport.html>.

advocacy organizations denying climate science in the decade after the pledge, including over \$1.5 million in 2017.¹⁰⁵

From 1998 to 2014, ExxonMobil gave over \$31 million to think tanks and organizations that published research and ran campaigns denying climate science, such as the Competitive Enterprise Institute, the Heartland Institute, Frontiers for Freedom, and Committee for a Constructive Tomorrow.¹⁰⁶

The full extent of FFCs' funding of climate denial groups is difficult to quantify. Two of the most prominent funders of climate denial in the last two decades are DonorsTrust and Donors Capital Fund. Because they are classified as "donor advised funds," they are not required to disclose the source of their funding, meaning many of their funding sources are not known to the public. After ExxonMobil's 2007 announcement that it would stop funding climate denial groups (though, as noted above, it continued to fund climate denial around \$1 million per year), contributions to climate denial groups by DonorsTrust and Donors Capital Fund shot upward. Between 2002 and 2011, DonorsTrust and Donors Capital Fund provided \$146 million to climate denial groups.¹⁰⁷

In addition to funding research institutions denying climate science, FFCs also funded individual scientists to promote climate misinformation. For example, from 2001 to 2012, ExxonMobil, API, and other industry groups gave \$1.2 million to Harvard-Smithsonian astrophysicist Dr. Wei-Hock Soon to publish research contending that solar variability is a primary driver of climate change,¹⁰⁸ a widely discredited theory.¹⁰⁹

FFCs also have continued, even in recent years, to make public and misleading statements about the realities of climate change. For example, as recently as 2020, ConocoPhillips' stated "Climate Change Position" on its website continued to emphasize the "uncertainties" of climate change. While the company acknowledged that human-caused greenhouse gas emissions "can lead to adverse changes in global climate," it also stated that "uncertainties remain."¹¹⁰

¹⁰⁵ *ExxonMobil Foundation & Corporate Giving to Climate Change Denier & Obstructionist Organizations*, UNION OF CONCERNED SCIENTISTS (2017), <https://www.ucsusa.org/sites/default/files/attach/2019/ExxonMobil-Worldwide-Giving-1998-2017.pdf>.

¹⁰⁶ *ExxonMobil Climate Denial Funding 1998–2014*, UNION OF CONCERNED SCIENTISTS, <https://www.ucsusa.org/sites/default/files/attach/2015/07/ExxonMobil-Climate-Denial-Funding-1998-2014.pdf>.

¹⁰⁷ Aliya Haq, *REVEALED: Donors Trust is the Secret ATM Machine for Climate Denier*, GREENPEACE (Feb. 15, 2013), <https://www.greenpeace.org/usa/revealed-donors-trust-is-the-secret-atm-machine-for-climate-deniers/>.

¹⁰⁸ See Mulvey & Shulman, *supra* note 89.

¹⁰⁹ Zeke Hausfather, *Explain: Why the sun is not responsible for recent climate change*, CARBON BRIEF (Aug. 18, 2017), <https://www.carbonbrief.org/why-the-sun-is-not-responsible-for-recent-climate-change/>.

¹¹⁰ *Climate Change Position*, CONOCOPHILLIPS (2020), <https://web.archive.org/web/20200418203515/https://www.conocophillips.com/sustainability/integrating-sustainability/sustainable-development-governance/policies-positions/climate-change-position/>.

b. Natural gas disinformation

Burning natural gas emits less carbon than burning coal.¹¹¹ But the largest component of natural gas, a fossil fuel energy source, is methane,¹¹² and methane leaks are rife in natural gas production and distribution.¹¹³ Methane, in turn, is a “powerful greenhouse gas, about 84 times more potent than carbon dioxide measured over a 20-year period.”¹¹⁴ Recent studies have shown that global methane emissions are significantly higher than estimated previously¹¹⁵—and that, due to methane leaks, the climate harm from natural gas may rival that of coal.¹¹⁶

Company and trade association documents demonstrate that the fossil fuel industry knew that natural gas was no better for the climate than other fossil fuels. Yet FFCs have promoted and continue to promote natural gas as “clean” without acknowledging the environmental harm of methane that these companies were clearly aware of. BP discussed this issue explicitly in a 2018 draft presentation marked “Confidential” which identifies the “challenge” posed by press pieces reporting that natural gas is a fossil fuel that contributes to climate change.¹¹⁷ The slides are titled “Gas doesn’t support climate goals when you take methane emissions into account.”¹¹⁸ The presentation describes a forthcoming BP communications campaign to “advance and protect the role of gas—and BP—in the energy transition.”¹¹⁹ One key pillar of the campaign strategy was to “‘Harness excitement’ around renewables by positioning gas as the perfect partner,” even though methane and carbon dioxide emissions from producing, transporting, and burning natural gas significantly contribute to climate change.¹²⁰ The document recommends funding white papers by research institutions like Princeton University and Imperial College “highlighting [the] role of gas as a friend to renewables;” hosting global stakeholder events with influential leaders; and highlighting “hero projects” to demonstrate the benefits of gas and offer anecdotal evidence of

¹¹¹ Hiroko Tabuchi, *Leaks Can Make Natural Gas as Bad for the Climate as Coal, a Study Says*, NEW YORK TIMES (Jul. 13, 2023), <https://www.nytimes.com/2023/07/13/climate/natural-gasleaks-coal-climate-change.html>.

¹¹² *Natural Gas Explained*, U.S. ENERGY INFORMATION ADMINISTRATION, <http://www.eia.gov/energyexplained/natural-gas>.

¹¹³ See Tabuchi, *supra* note 111.

¹¹⁴ *Is Natural Gas Really the Bridge Fuel the World Needs?*, UNITED NATIONS ENVIRONMENT PROGRAMME (Jan. 12, 2023), <http://www.unep.org/news-and-stories/story/natural-gas-really-bridge-fuel-world-needs>.

¹¹⁵ *International Methane Emissions Observatory (IMEO)*, UNITED NATIONS ENVIRONMENT PROGRAMME, www.unep.org/topics/energy/methane/international-methane-emissions-observatory-imeo.

¹¹⁶ See Tabuchi, *supra* note 111.

¹¹⁷ *Denial, Disinformation, and Doublespeak: Big Oil’s Evolving Efforts to Avoid Accountability for Climate Change*, Joint Staff Report of House Committee on Oversight and Accountability and Senate Budget Committee 22 (Apr. 30, 2024), <https://oversightdemocrats.house.gov/news/press-releases/new-joint-bicameral-staff-report-reveals-big-oils-campaign-climate-denial>.

¹¹⁸ *Id.*

¹¹⁹ *Id.* at 23.

¹²⁰ *Id.*

methane management.¹²¹ BP estimated spending \$1.1 million in the first year of the campaign alone.¹²²

A 2017 BP email asserted that “promoting and protecting the role of gas as an increasing part of our energy mix is a paramount priority. We need to be ready to speak to this wherever there is a credible effort to dis-incentivize gas.”¹²³ BP asserted that natural gas:

play[s] a key role in meeting the dual challenge of providing more energy with fewer emissions. It is cleaner than other fossil fuels when burnt in power generation or used in industrial processes and offers numerous health, climate and economic benefits.¹²⁴

The industry publicly promoted natural gas while acknowledging internally that the risks of methane were problematic. Comments on a draft outline for a 2017 speech by BP’s then-CEO Robert Dudley acknowledged explicitly that internal modeling suggested that widespread carbon capture technologies would be necessary to even come close to aligning natural gas emissions with the Paris Agreement goals:

You don’t say anything about concerns about [. . .] the idea that, once built, gas locks in future emissions above a level consistent with 2 degrees, at least without CCUS. All the models with a continuing role for gas see wide CCUS deployment.¹²⁵

In December 2019, a lobbyist sent BP’s then-Vice President and Head of U.S. Policy and Regulatory Affairs an article highlighting that methane emissions from natural gas offset the climate benefits, adding “This is an issue that will not go away.”¹²⁶ The BP executive forwarded the article to colleagues, noting: “Curious whether any [of] you are familiar with or have insight into this study. It is quite concerning to us as another blow against natural gas.”¹²⁷

FFCs have also used academic institutions to lend credibility to their false or misleading natural gas claims. For example, Shell’s Global Methane Communications Plan describes an academic-industry partnership at the Imperial College London as providing “thought leadership and research into technology that could underpin role for gas.”¹²⁸ A 2017 email notes that the program is “focused on supporting fundamental research and develop [sic] innovative technology solutions to support the ongoing energy transition,” including on “new end-uses for

¹²¹ *Id.*

¹²² *Id.*

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Id.*

¹²⁶ *Id.*

¹²⁷ *Id.* at 24.

¹²⁸ *Id.* at 46.

natural gas.”¹²⁹ In the same email, an official described Shell’s plan to “‘embed’ Shell scientists” at the University of California, Berkeley, where Shell funded the Energy Biosciences Institute to the tune of \$25 million over five years.¹³⁰

Fossil fuel industry groups have also worked to aggressively market disinformation related to natural gas. For example, API developed a 2016 draft print ad showing people engaging in outdoor activities like skydiving, playing on a playground swing, and playing basketball that states: “Natural gas doesn’t just cook dinner. Thanks to natural gas the air up here is cleaner than it’s been in 25 years.”¹³¹ API’s 2021 Climate Action Framework portrays the organization as working to “tackle the climate challenge” by “lowering emissions, increasing efficiency, advancing technological innovation, building modern infrastructure and more.”¹³² But the primary climate “solution” API advocates for is shifting to heavier reliance on natural gas as a “clean fuel”—indeed, an internal API email shows that its Climate Action Framework was in fact organized around the purpose of “continued promotion of natural gas in a carbon constrained economy.”¹³³

c. Greenwashing

FFCs continue to mislead the public about their conduct and the impact of fossil fuel products on climate change through “greenwashing” advertising campaigns and public statements that falsely and misleadingly portray FFCs as climate-friendly energy companies that are deeply engaged in finding solutions to climate change. In reality, FFCs continue to primarily invest in, develop, promote, and profit from fossil fuel products and heavily market those products to consumers.

For example, in recent years ExxonMobil ran a series of advertorials and advertisements in *The New York Times*, *The Economist*, and on television touting the company’s investment in alternative energy biofuels from algae and plant waste. One advertorial in the *Times* falsely promised “A Greener Energy Future. Literally.”¹³⁴ Another television advertisement touted algae’s “potential to change our energy future.”¹³⁵ This campaign was a sham on multiple levels. First, the biofuels it promoted were a miniscule portion of Exxon’s energy portfolio. The company had set a goal of producing 10,000 barrels of biofuels per day by 2025, which, if met,

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ *Id.* at 14.

¹³² *Climate Action Framework*, AMERICAN PETROLEUM INSTITUTE, <https://www.api.org/climate>.

¹³³ Email from Jeffrey Stein, AMERICAN PETROLEUM INSTITUTE (Mar. 25, 2021), <https://www.documentcloud.org/documents/23573083-api-hcor-climate-action-framework>.

¹³⁴ ExxonMobil, *The Future of Energy? It May Come from Where You Least Expect It*, NEW YORK TIMES, <https://www.nytimes.com/paidpost/exxonmobil/the-future-of-energy-it-may-come-from-where-you-least-expect.html>.

¹³⁵ T Brand Studio, *Algae May Be Small – But Its Impact Could be Big | Presented by ExxonMobil*, YOUTUBE (Sep. 25, 2018), <https://www.youtube.com/watch?v=pWcIx1LFSWk>.

would have amounted to just 0.2% of its total refinery capacity.¹³⁶ But even this never happened, as ExxonMobil ended its investments in algae biofuels in 2023 after having spent nearly \$175 million to advertise its algae program,¹³⁷ while only spending \$350 million on the research and development of algae technology.¹³⁸ Put differently, Exxon spent nearly half as much on advertising algae as a climate solution as it did on actually researching it. ExxonMobil knew that this technology was unproven, did not yet exist, and wouldn't exist for a long time, if ever.¹³⁹ Despite this, the company prominently publicized its comparatively small investment in algae biofuel to suggest that a nonexistent solution was at hand and deceive consumers into thinking that they need not change their consumer or investment choices, support laws to fight climate change, or take other action on climate.

In 2019 BP launched an advertising campaign misleadingly claiming the company was prioritizing clean energy like solar and wind power by investing in “more energy” with “less footprint.”¹⁴⁰ Yet between 2010 and 2018, just 2.3% of BP's total capital expenditures were invested in low carbon energy sources.¹⁴¹ While investing negligible sums of money in the clean energy promoted by its advertising, a 2019 estimate placed BP's annual spending on “climate branding”—efforts to draw attention to low carbon sources, position the company as a climate expert, and acknowledge concern about climate change in order to fool the consuming, investing, and voting public into thinking they were doing far more than they were to fight climate so that public wouldn't do anything to decrease their fossil fuel revenues—at \$30 million.¹⁴²

In the late 2010s, Shell launched a similar “Make the Future” campaign designed to hold itself out as an environmentally conscious energy company and change perceptions about Shell among “Energy Engaged Millennials.”¹⁴³ A paid video advertisement in *The New York Times* titled “Reimagining the Future of Transportation” suggested that Shell is committed to a cleaner energy future by, among other things, running trucks on hydrogen fuel cells and airplanes on

¹³⁶ InfluenceMap, *Big Oil's Real Agenda on Climate Change*, INFLUENCEMAP, 13 (March 2019), <https://influencemap.org/report/How-Big-Oil-Continues-to-Oppose-the-Paris-Agreement-38212275958aa21196dae3b76220bdbc>.

¹³⁷ Adam Lowenstein, *Congressional Investigation Reveals New Evidence of Big Oil's Decades-Long Campaign to Deny Climate Science*, DESMOG (May 1, 2024), <https://www.desmog.com/2024/05/01/congressional-investigation-sheldon-whitehouse-fossil-fuel-industry-report-carbon-emissions-contribute-to-climate-change-senate-budget-committee-jamie-raskin/>.

¹³⁸ Amy Westervelt, *Big oil firms touted algae as climate solution. Now all have pulled funding*, THE GUARDIAN (Mar. 17, 2023) <https://www.theguardian.com/environment/2023/mar/17/big-oil-algae-biofuel-funding-cut-exxonmobil>.

¹³⁹ Nick Cunningham, *Internal Documents Show Big Oil PR Messages Still 'Mislead' Public on Climate*, DESMOG (Sep. 16, 2022), <https://www.desmog.com/2022/09/16/shell-exxon-oil-pr-mismatch-carbon-capture-algae/>.

¹⁴⁰ *Possibilities Everywhere, More Energy with Less Footprint*, BP AMERICA (Mar. 6, 2019) <https://www.facebook.com/watch/?v=804651883212210>.

¹⁴¹ *Low-carbon investment of the leading oil companies worldwide between 2010 and 2018 (as a share of total capital expenditure)*, STATISTA (Dec. 20, 2023), <https://www.statista.com/statistics/1085091/low-carbon-investment-oil-companies-worldwide/>.

¹⁴² See InfluenceMap at 12, *supra* note 134.

¹⁴³ *Shell: Make the Future*, MEDIACOM (Dec. 16, 2016), <https://www.mediacom.com/uk/article/index?id=makethe-future>.

biofuels.¹⁴⁴ Shell produced a similar advertorial in the *Times* positing “A Path to Net-Zero Emissions by 2070” by “changing how tomorrow’s transport is fueled.”¹⁴⁵ Yet between 2010 and 2018, Shell dedicated just 1% of its capital spending to low carbon energy sources.¹⁴⁶ In 2021, Shell told investors that \$2.4 billion out of its total \$19.7 billion capital expenditure (about 12%) was dedicated to “renewables and energy solutions.”¹⁴⁷ In reality, most of the company’s purportedly renewable investments were actually in fossil gas projects—projects that lock in decades of future carbon and methane emissions and are certainly not renewable, or true “energy solutions.”¹⁴⁸ When the company’s investments in wind and solar were tallied, Shell was investing only 1.5% of its 2021 expenditures in renewable energy.¹⁴⁹ Shell planned to spend four times more money on new oil and gas development than on renewable technology in 2022.¹⁵⁰ Independent analysis of Shell’s spending plans shows that the company will be emitting more greenhouse gases by 2030 than it currently emits.¹⁵¹ While Shell’s commitment to low carbon energy remains minimal, its investment in greenwashing campaigns has been significant. A 2019 estimate placed its annual spending on climate branding at \$55 million.¹⁵²

In 2010, Chevron launched an advertising campaign with the slogan “We Agree,” highlighting the company’s commitment to sustainable energy investments and environmental stewardship. The advertisements announced Chevron’s agreement with statements like “It’s time oil companies get behind the development of renewable energy” and “Protecting the Planet is Everyone’s job.”¹⁵³ Yet from 2010 to 2018, the eight years after the launch of the “We Agree” campaign, it expended just 0.29% of its total capital on low carbon energy.¹⁵⁴ In 2022, after acquiring Renewable Energy Group (REG), Chevron called itself a “leading US renewable fuel

¹⁴⁴ Shell, *Video: Reimagining the Future of Transportation*, NEW YORK TIMES, <https://www.nytimes.com/paidpost/shell/reimagining-the-future-of-transportation.html#100000006395029>.

¹⁴⁵ Shell, “*Moving Forward: A Path to Net-Zero Emissions by 2070*,” NEW YORK TIMES, <https://www.nytimes.com/paidpost/shell/ul/moving-forward-a-path-to-net-zero-emissions-by-2070.html>.

¹⁴⁶ Anjali Raval & Leslie Hook, *Oil and gas advertising spree signals industry’s dilemma*, FINANCIAL TIMES (Mar. 6, 2019), <https://www.ft.com/content/5ab7edb2-3366-11e9-bd3a-8b2a211d90d5>.

¹⁴⁷ *Shell Faces Groundbreaking Complaint for Misleading US Authorities and Investors on Its Energy Transition Efforts*, GLOBAL WITNESS (Feb. 1, 2023), <https://www.globalwitness.org/en/campaigns/fossil-gas/shell-faces-groundbreaking-complaint-misleading-us-authorities-and-investors-its-energy-transition-efforts/>.

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ Simon Jack, *Oil Giant Shell Says It Needs Oil to Pay for Green Shift*, BBC NEWS (Nov. 3, 2021), <https://www.bbc.com/news/business-59154930>.

¹⁵¹ *Id.*

¹⁵² See InfluenceMap, *supra* note 136.

¹⁵³ Elizabeth Douglass, *Exxon’s Gamble: 25 Years of Rejecting Shareholder Concerns on Climate Change*, INSIDE CLIMATE NEWS (Nov. 16, 2015), <https://insideclimatenews.org/news/16112015/exxons-gamble-25-years-rejecting-shareholder-concerns-climate-change/>.

¹⁵⁴ See Statista, *supra* note 141.

company” and said the company would grow production capacity of renewable fuels.¹⁵⁵ But in a 2023 interview with the *Houston Chronicle* editorial board, Chevron CEO Mike Wirth admitted that Chevron was not a leader in renewables like wind and solar, in part because of undesirable profit margins:

[W]e don’t have particular expertise in wind and solar and a lot of the intellectual property in the turbines or in the panels. Our business generates typically double-digit kinds of returns on invested capital; wind and solar tend to be single-digit returns. And so in a competitive business world, you also have to look at that.¹⁵⁶

Chevron plans to increase its total oil production by 11% from 2019 to 2030, according to an analysis of data from energy consultant Rystad Energy.¹⁵⁷

In contrast to the message conveyed by their greenwashing efforts, FFCs are actually ramping up fossil fuel production. ExxonMobil is projected to increase oil production by more than 35% by 2030—a sharper rise than over the previous 12 years.¹⁵⁸ BP is projected to increase production of oil and gas by 20% by 2030.¹⁵⁹ Shell is forecast to increase output by 38% by 2030.¹⁶⁰ Chevron set an oil production record in 2018 of 2.93 million barrels per day,¹⁶¹ and a 2019 investor report touted Chevron’s “significant reserve additions” as well as significant capital projects involving construction of refineries worldwide.¹⁶²

d. Causative impact of FFCs’ climate deception

Prosecutors can point to substantial evidence that FFCs’ creation of a false perception of disagreement in the scientific community on climate change had a significant impact on the public’s perception of climate change in ways that helped block or delay the transition away

¹⁵⁵ *Chevron Is a Top US Renewable Fuel Company*, CHEVRON (Jun. 13, 2022), <https://www.chevron.com/newsroom/2022/q2/with-reg-acquisition-chevron-becomes-leading-us-renewable-fuel-company>.

¹⁵⁶ *Chevron’s Future Isn’t Wind and Solar. CEO Explains Why*, HOUSTON CHRONICLE (Mar. 9, 2023), <https://www.houstonchronicle.com/opinion/editorials/article/chevron-ceo-wirth-wind-solar-ceraweek-17827049.php>.

¹⁵⁷ *Big Oil Reality Check*, OIL CHANGE INTERNATIONAL (Sept. 2020), <http://priceofoil.org/content/uploads/2020/09/OCI-Big-Oil-Reality-Check-vF.pdf>.

¹⁵⁸ Jonathan Watts, Jillian Ambrose & Adam Vaughan, *Oil Firms To Pour Extra 7m Barrels Per Day Into Markets, Data Shows*, THE GUARDIAN (Oct. 10, 2019), <https://www.theguardian.com/environment/2019/oct/10/oil-firms-barrels-markets>.

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ Kevin Crowley & Eric Roston, *Chevron Aligns Strategy with Paris Deal But Won’t Cap Output*, BLOOMBERG (Feb. 7, 2019), <https://www.bloomberg.com/news/articles/2019-0207/chevron-pledges-alignment-with-paris-accord-but-won-t-cap-output>.

¹⁶² *Chevron 2019 Investor Presentation*, CHEVRON (Feb. 2019), <https://chevroncorp.gcsweb.com/static-files/c3815b42-4deb-4604-8c51-bde9026f6e45>.

from fossil fuels, allowing FFCs to continue operating, making profits, and therefore creating emissions.

First, it is clear that this was precisely the effect FFCs were aiming to achieve through their deceptive conduct. FFCs noted in 1991 that opinion polls revealed that 60% of Americans believed global warming was a serious environmental problem and that “our industry cannot sit on the sidelines in this debate.”¹⁶³ In response, the GCC Action Plan discussed how public opinion on climate could be swayed with disinformation:

Charlton Research’s survey of 1,100 “informed Americans” suggests that while Americans currently perceive climate change to be a great threat, public opinion is open to change on climate science. When informed that “some scientists believe there is not enough evidence to suggest that what is called global climate change is a long-term change due to human behavior and activities,” 58 percent of those surveyed said they were more likely to oppose the Kyoto treaty.¹⁶⁴

Second, there is concrete evidence that these disinformation efforts have been successful. A 2007 Yale University-Gallup poll found that only 48% of Americans believed there was a consensus among the scientific community regarding global warming, and 40% believed, falsely, that there was substantial disagreement among scientists over whether global warming was occurring.¹⁶⁵ Eight years later, a 2015 Yale-George Mason University poll found that “[o]nly about one in ten Americans understands that nearly all climate scientists (over 90%) are convinced that human-caused global warming is happening, and just half [. . .] believe a majority do.”¹⁶⁶ It also found that 33% of Americans believe that climate change is mostly due to natural changes in the environment, in stark contrast to the more than 99.9% of peer-reviewed climate science papers that acknowledge that global warming is happening and is human-caused.¹⁶⁷ In another study, researchers from Yale, Cambridge, and George Mason University found that increasing public

¹⁶³ Naomi Oreskes, *My Facts Are Better Than Your Facts: Spreading Good News about Global Warming*, in Peter Howlett et al., *How Well Do Facts Travel? The Dissemination of Reliable Knowledge*, CAMBRIDGE UNIVERSITY PRESS (2011), at 136–66,

<https://www.cambridge.org/core/books/abs/how-well-do-facts-travel/my-facts-are-better-than-your-facts-spreading-good-news-about-global-warming/34195E5230016EF7BB989AE7B0629E9B>.

¹⁶⁴ See Email from Joe Walker, *supra* note 79.

¹⁶⁵ *American Opinions on Global Warming: A Yale/Gallup/Clearvision Poll*, YALE PROGRAM ON CLIMATE CHANGE COMMUNICATION (Jul. 31, 2007),

<https://climatecommunication.yale.edu/publications/american-opinions-on-global-warming/>.

¹⁶⁶ Anthony Leiserowitz et al., *Climate Change in the American Mind*, YALE PROGRAM ON CLIMATE CHANGE COMMUNICATION & GEORGE MASON UNIVERSITY CENTER FOR CLIMATE CHANGE COMMUNICATION (Oct. 2015), <https://climatecommunication.yale.edu/publications/global-warming-ccam-march-2015/>.

¹⁶⁷ Mark Lynas et al, *Greater than 99% consensus on human caused climate change in the peer-reviewed scientific literature*, ENVIRONMENTAL RESEARCH LETTERS 16, 11 (Oct. 19, 2021), <https://iopscience.iop.org/article/10.1088/1748-9326/ac2966>.

perceptions of the scientific consensus is significantly and causally associated with an increase in the belief that climate change is happening, human-caused, and a worrisome threat.¹⁶⁸

Finally, there is evidence that this lack of progress, and indeed regression, in the public's understanding of climate science has had major consequences for our transition away from fossil fuels and, therefore, FFCs' continued profitability. For example, the Intergovernmental Panel on Climate Change ("IPCC") noted the role of climate misinformation in limiting climate action. In its sixth assessment report, the IPCC condemned "vested economic and political interests for organising and financing misinformation and 'contrarian' climate change communication."¹⁶⁹ It noted that the "rhetoric and misinformation on climate change and the deliberate undermining of science have contributed to misperceptions of the scientific consensus, uncertainty, disregarded risk and urgency, and dissent."¹⁷⁰ Most importantly, it discussed how "misinformation and politicization of climate change science has created polarization in public and policy domains in North America, particularly in the US, limiting climate action."¹⁷¹ The resultant public misperception of climate risks is "delaying urgent adaptation planning and implementation."¹⁷² This, in turn, "inflates climate risks."¹⁷³

In short, the FFCs have engaged—and continue to engage—in a long-term marketing program specifically aimed at buying them more time and freedom to push a business model that would result in the emission of more greenhouse gasses into the atmosphere. And the lucrative buildup of those emissions, which would have been considerably harder to accomplish without these deceptive marketing campaigns, continue to exacerbate the risk that climate disasters will cause serious injuries or deaths in New York.

C. FFCs and their executives acted recklessly

Reckless endangerment in the second degree requires proof that a defendant was aware of and consciously disregarded the risk that their conduct would injure another person, and reckless

¹⁶⁸ Sander van der Linden, et al., *The scientific consensus on climate change as a gateway belief: Experimental evidence*, PLOS ONE 10 2 (Feb. 25, 2015), <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0118489>.

¹⁶⁹ *IPCC WGII Sixth Assessment Report*, IPCC 14–14, https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FinalDraft_Chapter14.pdf.

¹⁷⁰ *Id.*

¹⁷¹ *Id.* at 14–3. One example of misinformation limiting climate action was described in a PBS Frontline interview with Senator Chuck Hagel (R-NE), who co-sponsored the Byrd-Hagel Resolution that prohibited the United States from ratifying the Kyoto Protocol. Hagel agreed that the fossil fuel industry's deception substantially influenced the public's perception of the issue of climate change, as well as his own, stating: "I was misled. Others were misled. When they had evidence in their own institutions that countered what they were saying publicly—I mean, they lied. [. . .] It would have changed everything [had FFCs told the truth]. I think it would have changed the average citizen's appreciation of climate change. [. . .] And mine, of course. It would have put the United States and the world on a whole different track, and today we would have been so much further ahead than we are. It's cost this country, and it cost the world." Frontline, *The Power of Big Oil, Part Two: Doubt*, PBS (Apr. 26, 2022), <https://www.youtube.com/watch?v=qMe-BYUIPLU>.

¹⁷² *Id.* at 14–14.

¹⁷³ *Id.* at 14–75.

endangerment in the first degree requires proof that they did so under circumstances evincing a depraved indifference to human life.

As detailed below, voluminous evidence exists showing that FFCs and their executives knew their conduct—both in continuing to produce, market, and sell fossil fuels, and in promoting climate disinformation to delay the transition away from fossil fuels—would contribute to, in their own words, “globally catastrophic”¹⁷⁴ climate harms that would “submerge New York,”¹⁷⁵ “cause flooding on much of the U.S. East Coast,”¹⁷⁶ do “great irreversible harm to our planet,”¹⁷⁷ “have serious consequences for man’s comfort and survival,”¹⁷⁸ create “more violent weather—more storms, more droughts, more deluges,”¹⁷⁹ and cause “suffering and death due to thermal extremes.”¹⁸⁰ In fact, FFCs were so confident in their climate predictions that they used them to make major business decisions, such as raising the height of offshore drilling platforms to account for expected sea level rise.¹⁸¹

Given this knowledge, a reasonable person would have been aware that their actions created a substantial—and likely a grave—risk of causing another person’s injury or death. And the profound and indiscriminate scope of the dangers that FFCs discussed internally and knew they were creating provides prosecutors with strong ammunition to argue that these companies acted with depraved indifference to human life.

1. Knowledge of danger

From the late 1950s through the late 1980s, scientists funded by or working directly for FFCs studied fossil fuels’ impacts on the climate. Those scientists—again, the FFCs’ own experts—issued dire warnings to the companies about the future of Earth’s climate and the role of emissions in changing that future for the worse.

FFCs also formed and participated in committees and task forces within API, their largest trade association, which generated numerous reports confirming the same conclusion: Unabated consumption of fossil fuels posed an enormous danger to the planet and human life.

In 1959, physicist Edward Teller provided—directly to top leaders of the petroleum industry—an explicit description of the dangers of global warming at an API-organized symposium at

¹⁷⁴ See Nelson, *supra* note 3.

¹⁷⁵ See Teller, *supra* note 4.

¹⁷⁶ See Glaser, *supra* note 5.

¹⁷⁷ *Id.*

¹⁷⁸ See Oppenheis & Donn, *supra* note 7.

¹⁷⁹ See Shell Confidential Group Planning, *supra* note 8.

¹⁸⁰ See Devlin, *supra* note 9.

¹⁸¹ Amy Lieberman & Susanne Rust, *Big Oil braced for global warming while it fought regulations*, L.A. TIMES (Dec. 31, 2015), <http://graphics.latimes.com/oil-operations/>.

Columbia University titled *Energy and Man*.¹⁸² At this conference, dozens of industry executives, including Robert Dunlop, future Chairman of the Board of API, heard Teller issue a stark warning about the need to find non-fossil fuel energy sources to avert potentially catastrophic climate consequences. In his address to the crowd, Teller said:

Whenever you burn conventional fuel, you create carbon dioxide. [. . .] Carbon dioxide has a strange property. It transmits visible light but it absorbs the infrared radiation which is emitted from the earth. Its presence in the atmosphere causes a greenhouse effect [. . .] It has been calculated that a temperature rise corresponding to a 10 percent increase in carbon dioxide will be sufficient to melt the ice caps and submerge New York. All the coastal cities would be covered [. . .] At present the carbon dioxide in the atmosphere has risen by 2 percent over normal. By 1970, it will be perhaps 4 percent, by 1980, 8 percent, by 1990, 16 percent, if we keep on with our exponential rise in the use of purely conventional fuels. By that time, there will be a serious additional impediment for the radiation leaving the earth. Our planet will get a little warmer. It is hard to say whether it will be 2 degrees Fahrenheit or only one or 5. But when the temperature does rise by a few degrees over the whole globe, there is a possibility that the ice caps will start melting and the level of the oceans will begin to rise.¹⁸³

It should be noted that Teller, a well-known member of the Manhattan Project (he was played by Benny Safdie in the film *Oppenheimer*¹⁸⁴), was a scientific figure of significant stature. As such, it can be safely assumed that his speech was noted by conference attendees and that his analysis was considered at the very least to be worthy of serious consideration.

Several years later, the fossil fuel industry received a warning from an even more official source. In 1965, President Lyndon Johnson's Science Advisory Committee issued a report cautioning that increased concentrations of atmospheric CO₂ caused by the combustion of fossil fuels could lead to global warming and sea level rise by the end of the century.¹⁸⁵ Fossil fuel executives were undoubtedly aware of this warning because Frank Ikard, the president of API at the time, discussed the report's findings with API's members at the trade organization's annual meeting later that year, saying:

¹⁸² Benjamin Franta, *On its 100th Birthday in 1959, Edward Teller Warned the Oil Industry About Global Warming*, THE GUARDIAN (Jan. 1, 2018), <https://www.theguardian.com/environment/climate-consensus-97-per-cent/2018/jan/01/on-its-hundredth-birthday-in-1959-edward-teller-warned-the-oil-industry-about-global-warming>.

¹⁸³ *Id.*

¹⁸⁴ Katey Rich, *Benny Safdie's 'Oppenheimer' Character Edward Teller and His Long, Complicated Life*, VANITY FAIR (Jul. 21, 2023), <https://www.vanityfair.com/hollywood/2023/07/oppenheimer-benny-safdie-edward-teller>.

¹⁸⁵ President's Science Advisory Committee, Report of the Environmental Pollution Panel President's Science Advisory Committee, The White House (1965), <https://nsarchive.gwu.edu/document/31937-document-2-white-house-report-restoring-quality-our-environment-report-environmental>.

One of the most important predictions of the report is that carbon dioxide is being added to the earth's atmosphere by the burning of coal, oil, and natural gas at such a rate that by the year 2000 the heat balance will be so modified as possibly to cause marked changes in climate beyond local or even national efforts.¹⁸⁶

Ikard also quoted the report's finding that "the pollution from internal combustion engines is so serious, and is growing so fast, that an alternative nonpolluting means of powering automobiles, buses, and trucks is likely to become a national necessity."¹⁸⁷ Finally, he summarized that "[t]he substance of the report is that there is still time to save the world's peoples from the catastrophic consequence of pollution, but time is running out."¹⁸⁸

In 1968, API commissioned a report from the Stanford Research Institute ("SRI") that examined "Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants."¹⁸⁹ The report warned that the global concentration of atmospheric CO₂ was already on the rise, and that a doubling in atmospheric CO₂ would lead to warming of the Earth's surface temperature of anywhere from 3° to 21° Fahrenheit.¹⁹⁰ The assessment stated: "Significant temperature changes are almost certain to occur by the year 2000, and [. . .] there seems to be no doubt that the potential damage to our environment could be severe."¹⁹¹ This damage included "the melting of the Antarctic ice cap, a rise in sea levels, [and] warming of the oceans."¹⁹² It then attributed these harms to fossil fuels directly, explaining that "[a]lthough there are other possible sources for the additional CO₂ now being observed in the atmosphere, none seem to fit the presently observed situation as well as the fossil fuel emanation theory."¹⁹³ The report concluded by calling on API's members to act. "Past and present studies [. . .] explain adequately the present state of CO₂ in the atmosphere. What is lacking, however, is an application of these atmospheric CO₂ data to air pollution technology and work toward systems in which CO₂ emissions would be brought under control."¹⁹⁴

In 1969, API asked SRI to supplement its report with a more detailed assessment of carbon dioxide's impact on climate. The report confirmed that atmospheric concentrations of CO₂ were steadily increasing and that 90% of this increase could be attributed to fossil fuel combustion, finding it "unlikely that the observed rise in atmospheric CO₂ has been due to changes in the

¹⁸⁶ See Ikard, *supra* note 25.

¹⁸⁷ *Id.*

¹⁸⁸ *Id.*

¹⁸⁹ Elmer Robinson & R.C. Robbins, *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants*, THE STANFORD RESEARCH INSTITUTE, 108–09 (Feb. 1968), <https://www.smokeandfumes.org/documents/document16>. See also David Hasemyer, et al., *CO₂'s Role in Global Warming Has Been on the Oil Industry's Radar Since the 1960s*, INSIDE CLIMATE NEWS (Apr. 13, 2016), <https://insideclimatenews.org/news/13042016/climate-change-global-warming-oil-industry-radar-1960s-exxon-api-co2-fossil-fuels/>.

¹⁹⁰ *Id.*,

¹⁹¹ *Id.* at 108–110.

¹⁹² *Id.*

¹⁹³ *Id.*

¹⁹⁴ *Id.* at 112.

biosphere.”¹⁹⁵ It also made extremely precise predictions about future climate harms based on projected fossil fuel use. It predicted that atmospheric CO₂ concentrations would reach 370 ppm by 2000, leading to global temperature increases of 0.5° Celsius.¹⁹⁶ In fact, in 2000 atmospheric CO₂ reached 369.64 ppm,¹⁹⁷ and global temperature had increased by an average of 0.5° Celsius.¹⁹⁸ The report also explained that these outcomes were only the beginning of much more dangerous climate consequences to come. It estimated that if atmospheric CO₂ reached 600 ppm, temperatures would rise by more than 2° Celsius, while also recognizing that combustion of all fossil fuels then recoverable would raise atmospheric CO₂ to 850 ppm.¹⁹⁹

In January 1972, API distributed summaries of extensive research on the environmental impacts of fossil fuels to its members, including the 1968 and 1969 SRI reports.²⁰⁰ Current FFCs and their predecessors in interest that produced this summary report as members of various API Committees included: American Standard of Indiana (BP), Asiatic (Shell), Atlantic Richfield (BP), British Petroleum (BP), Chevron Standard of California (Chevron), Continental (ConocoPhillips), Dupont (former owner of Conoco), Esso Research (ExxonMobil), Ethyl (formerly affiliated with Esso, which was subsumed by ExxonMobil), Getty (ExxonMobil), Gulf (Chevron, among others), Humble Standard of New Jersey (ExxonMobil/Chevron/BP), Mobil (ExxonMobil), Pan American (BP), Phillips (ConocoPhillips), Shell, Standard of Ohio (BP), Texaco (Chevron), Union (Chevron), Skelly (ExxonMobil), and Caltex (Chevron).²⁰¹

By the late 1970s, a significant scientific consensus had solidified around the notion of anthropogenic climate change, driven primarily by CO₂ emissions from the burning of fossil fuels. As Exxon scientist Ed Garvey explained, given that atmospheric CO₂ from fossil fuel emissions has a unique chemical signature that distinguishes it from non-fossil derived CO₂, “[b]y the late 1970s, global warming was no longer speculative. There was direct evidence it was not the same type of carbon that was in the atmosphere a hundred years ago.”²⁰²

In July 1977, Exxon scientist James Black gave a presentation to Exxon’s Corporate Management Committee on the “Greenhouse Effect” that provided further clarity regarding the

¹⁹⁵ Elmer Robinson & R.C. Robbins, *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants Supplement*, THE STANFORD RESEARCH INSTITUTE, 119 (Jun. 1969).

¹⁹⁶ *Id.* at 103.

¹⁹⁷ *Global Mean CO₂ Mixing Ratios (ppm): Observations*, NASA GODDARD INSTITUTE FOR SPACE STUDIES, <https://data.giss.nasa.gov/modelforce/ghgases/fig1A.ext.txt>.

¹⁹⁸ See Michael Carlowicz, *Global Temperatures*, NASA EARTH OBSERVATORY, <https://earthobservatory.nasa.gov/world-of-change/global-temperatures>.

¹⁹⁹ See Robinson & Robbins, *supra* note 195.

²⁰⁰ *Environmental Research, A Status Report*, AMERICAN PETROLEUM INSTITUTE (Jan. 1972), <http://files.eric.ed.gov/fulltext/ED066339.pdf>.

²⁰¹ *Id.* at 136–46.

²⁰² James Osborne, *Interview: Former Exxon scientist on oil giant’s 1970s climate change research*, DALLAS NEWS (Oct. 2, 2015), <https://www.dallasnews.com/business/2015/10/02/interview-former-exxon-scientist-on-oil-giant-s1970s-climate-change-research/>.

threats to climate caused by fossil fuels. During the presentation, which was memorialized in an internal memorandum the following year, Black explained that atmospheric CO₂ had already increased by 10–15%, and that slightly more than half of CO₂ from fossil fuel combustion remains in the atmosphere.²⁰³ He then shared the “best presently available climate model,” which predicted that a doubling of CO₂ in the atmosphere would produce warming of 2° to 3° Celsius “over most of the earth” and temperature increases near the poles of “two to three times this value.”²⁰⁴ He explained that such increases could lead to sea level rise of up to seven meters and, he was “fairly certain,” would increase precipitation, affecting agriculture and industry worldwide.²⁰⁵

Black directly told Exxon leadership that the company’s fossil fuels were driving these climatic changes, warning that “current scientific opinion overwhelmingly favors attributing atmospheric carbon dioxide increase to fossil fuel combustion”²⁰⁶ and that “there is a general scientific agreement that the most likely manner in which mankind is influencing the global climate is through carbon dioxide release from the burning of fossil fuels.”²⁰⁷ Based on this data, Black told Exxon’s Corporate Management Committee that “man has a time window of five to ten years before the need for hard decisions regarding changes in energy strategies might become critical.”²⁰⁸

In the late 1970s, following Black’s warnings, Exxon launched an ambitious research program to study the environmental effects of the company’s marketing and sale of fossil fuels. Morrel Cohen, a senior scientist at Exxon during this time period, explained that “Exxon was trying to become a research power in the energy industry the way the Bell labs was in the communications industry.”²⁰⁹ A 1978 letter from Exxon research scientist Henry Shaw explains that “Exxon’s involvement and commitment of funds and personnel is based on our need to assess the possible impact of the greenhouse effect on Exxon business. Exxon must develop a credible scientific team that can critically evaluate the information generated on the subject and be able to carry bad news, if any, to the corporation.”²¹⁰

²⁰³ J.F. Black, *The Greenhouse Effect*, EXXON RESEARCH AND ENGINEERING COMPANY, 1 (June 6, 1978), <https://insideclimatenews.org/documents/james-black-1977-presentation>.

²⁰⁴ *Id.*

²⁰⁵ *Id.* at 7.

²⁰⁶ *Id.* at 4, paragraph 7.

²⁰⁷ *Id.* at 10.

²⁰⁸ *Id.* at 2.

²⁰⁹ Amy Westervelt, *Drilled: A True Crime Podcast about Climate Change*, at 06:21 (Nov. 14, 2018), <https://www.criticalfrequency.org/drilled>.

²¹⁰ See *Exxon’s Own Research Confirmed Fossil Fuels’ Role in Global Warming Decades Ago*, INSIDE CLIMATE NEWS, 3 (Nov. 15, 2015), <http://www.riversimulator.org/Resources/Press/CompleteSeriesExxonsResearchConfirmedFossilFuelsRoleGlobalWarmingDecadesAgo.pdf>.

A 1979 Exxon inter-office correspondence from Shaw revealed a potentially more antisocial purpose behind its climate research—to combat actions to address the harmful effects of fossil fuels:

It behooves us to start a very aggressive defensive program in the indicated areas of atmospheric science and climate because there is a good probability that legislation affecting our business will be passed.²¹¹

Exxon's research continued to show that combustion of fossil fuels was likely to lead to devastating climate impacts. In 1979, an internal Exxon memorandum from Exxon's Research and Engineering Division reiterated the "most widely held theory" that the increase in atmospheric CO₂ "is due to fossil fuel combustion"; "[i]ncreasing CO₂ concentration will cause a warming of the earth's surface"; and "[t]he present trend of fossil fuel consumption will cause dramatic environmental effects before the year 2050."²¹² The memorandum also warned Exxon of the "possibility" that "an atmospheric CO₂ buildup will cause adverse environmental effects in enough areas of the world to consider limiting the future use of fossil fuels as major energy sources."²¹³ Meanwhile, "the rate of CO₂ release from anthropogenic sources appears to be doubling every 15 years," a rate that would double atmospheric CO₂ by 2050.²¹⁴

Also in 1979, API and industry scientists formed the "CO₂ and Climate Task Force" to monitor and share climate research.²¹⁵ Membership on the API task force included senior scientists and engineers from nearly every major U.S. and multinational oil and gas company, including Exxon, Mobil (ExxonMobil), Amoco (BP), Gulf Oil (Chevron), Phillips (ConocoPhillips), Texaco (Chevron), Shell, Sunoco, Sohio (BP), and Standard Oil of California (BP), among others.²¹⁶ The Task Force held a meeting in March 1980 at which Dr. John Laurman, an "expert on CO₂ and climate," delivered a presentation to industry leaders—including executives from API, Exxon, SOHIO (BP), and Texaco (Chevron), among others—that laid out in the clearest possible terms fossil fuels' role in causing catastrophic climate change.²¹⁷ The minutes of the meeting list "reasons for increased concern with the CO₂ problem," including "its correlation with global industrial CO₂ emissions, mostly from fossil fuel combustion" and "scientific consensus on the potential for large future climatic response to increased CO₂ levels."²¹⁸ The industry executives

²¹¹ *Id.* at 17.

²¹² WL Ferrall, *Controlling the CO₂ Concentration in the Atmosphere, Exxon Research and Engineering Company*, CLIMATE INVESTIGATIONS CENTER, 1 (Oct. 16, 1979), <https://www.industrydocuments.ucsf.edu/docs/mqw10228>.

²¹³ *Id.*

²¹⁴ *Id.*

²¹⁵ Neela Banerjee, *Exxon's Oil Industry Peers Knew About Climate Dangers in the 1970s, Too*, INSIDE CLIMATE NEWS (Dec. 22, 2015),

<https://insideclimatenews.org/news/22122015/exxon-mobil-oil-industry-peers-knew-about-climate-change-dangers-1970s-american-petroleum-institute-api-shell-chevron-texaco/>.

²¹⁶ *Id.*

²¹⁷ See Nelson, *supra* note 3.

²¹⁸ *Id.* at 9.

attending the meeting were informed that “likely impacts” of the continued burning of their fossil fuel products included 1° Celsius global temperature increases by 2005, 2.5° Celsius of warming by 2038 that would cause “major economic consequences,” and 5° Celsius of warming by 2067 that would cause “globally catastrophic effects.”²¹⁹ The meeting concluded with the following warning: “At a 3% per annum growth rate of CO₂, a 2.5°C rise brings world economic growth to a halt in about 2025.”²²⁰

In 1981, Exxon scientist Henry Shaw wrote an internal memorandum to Exxon’s President of Research and Engineering outlining Exxon’s “Preliminary Statement of Exxon’s Position on the Growth of Atmospheric Carbon Dioxide.”²²¹ The memorandum concurred with the company’s and API’s findings that a doubling in atmospheric CO₂, which was likely to occur within 100 years, would result in “3°C global average temperature rise and 10°C at poles,” causing “[m]ajor shifts in rainfall/agriculture” and the potential that “[p]olar ice may melt.”²²² That same year, having digested these findings, Exxon’s research manager Roger Cohen distributed an internal memorandum cautioning executives that calling the impacts of climate change “well short of catastrophic [. . .] may be too reassuring” because “it is distinctly possible that [Exxon’s projected emissions] scenario will later produce effects which will indeed be catastrophic (at least for a substantial fraction of the earth’s population).”²²³

Cohen built on this warning in a 1982 internal letter to Exxon’s Office of Science and Technology summarizing the findings of Exxon’s research in climate modeling. In this memorandum, Cohen wrote that

over the past several years a clear scientific consensus has emerged regarding the expected climatic effects of increased atmospheric CO₂. The consensus is that a doubling of atmospheric CO₂ from its pre-industrial revolution value would result in an average global temperature rise of (3.0 ± 1.5) °C.²²⁴

He reiterated that there was “unanimous agreement in the scientific community that a temperature increase of this magnitude would bring about significant changes in the earth’s climate,” and that “[t]he time required for doubling of atmospheric CO₂ depends on future world consumption of fossil fuels.”²²⁵ Cohen also urged Exxon to “permit the publication of our

²¹⁹ *Id.* at 13.

²²⁰ *Id.* at 16.

²²¹ Memo from Henry Shaw to Dr. E.E. David, Jr., *re CO2 Position Statement*, Exxon Inter-Office Correspondence (May 15, 1981), <https://insideclimatenews.org/documents/exxon-position-co2-1981/>.

²²² *Id.*

²²³ Memo from Roger Cohen to W. Glass, 1 (Aug. 18, 1981), <https://insideclimatenews.org/wp-content/uploads/2021/02/Catastrophic-Effects-Letter-1981.pdf>.

²²⁴ Letter from Roger Cohen to A.M. Natkin, 1 (Sept. 2, 1982), <https://insideclimatenews.org/wp-content/uploads/2021/02/Consensus>.

²²⁵ *Id.*

research in scientific literature” because “to do otherwise would be a breach of Exxon’s public position and ethical credo on honesty and integrity.”²²⁶

But Exxon did not abide by this “ethical credo” to be transparent about the known dangers of fossil fuels. In November 1982, shortly after Cohen urged Exxon to share its research findings publicly, M.B. Glaser, Exxon’s Environmental Affairs Program Manager, issued a report titled “CO₂ ‘Greenhouse’ Effect.” Though the report was “given wide circulation to Exxon management [. . .] to familiarize Exxon personnel with the subject,” Glaser warned that it “should be restricted to Exxon personnel and not distributed externally.”²²⁷ Glaser’s report discussed

potentially catastrophic events that must be considered. For example, if the Antarctic ice sheet which is anchored on land should melt, then this could cause a rise in sea level on the order of five meters. Such a rise would cause flooding on much of the U.S. East Coast.²²⁸

The report also highlighted a study from the Massachusetts Institute of Technology urging that “vigorous development of nonfossil fuel energy sources be initiated as soon as possible” in light of the potential for “great irreversible harm to our planet.”²²⁹

Also in 1982, the Lamont Doherty Geological Observatory at Columbia University prepared a report for API titled “Climate Models and CO₂ Warming.” The report explained that atmospheric CO₂ had already risen from 290 ppm at the start of the industrial revolution to 340 ppm in 1981.²³⁰ While acknowledging some variability among climate models, it reported to API that “all predict some kind of increase in temperature within a global mean range of 4°C” based on the “assumption that atmospheric CO₂ will double,” an outcome “expected some time in the next century.”²³¹ It warned that “[s]uch a warming can have serious consequences for man’s comfort and survival since patterns of aridity and rainfall can change [and] the height of sea level can increase considerably.”²³²

In 1982, Dr. E.E. David Jr., President of the Exxon Research and Engineering Company, delivered a speech at the Fourth Annual Ewing Symposium, a gathering of fossil fuel industry leaders, titled “Inventing the Future Energy and the CO₂ ‘Greenhouse’ Effect.”²³³ His speech

²²⁶ *Id.* at 3.

²²⁷ *See* Glaser at 1, *supra* note 5.

²²⁸ *Id.* at 11.

²²⁹ *Id.* at 12–13, 18.

²³⁰ *See* Oppenheis & Donn at 4–5, *supra* note 7.

²³¹ *Id.*

²³² *Id.*

²³³ E.E. David Jr., *Inventing the Future: Energy and the CO₂ ‘Greenhouse’ Effect*, EXXON RESEARCH AND ENGINEERING COMPANY, 3 (Oct. 26, 1982), <http://www.documentcloud.org/documents/4412833-Inventing-theFuture-ER-amp-EC-1982.html>.

concerned how the industry would evolve in light of the scientific consensus that CO₂ buildup in the atmosphere was bound to harm the planet. He concluded that a transition away from dependence on fossil fuels was necessary, saying, “Few people doubt that the world has entered an energy transition away from dependence on fossil fuels and toward some mix of renewable resources that will not pose problems of CO₂ accumulation.”²³⁴

In 1983, Mobil Oil issued similarly stark warnings about the potentially catastrophic impacts of climate change in a newsletter entitled “Atmospheric Greenhouse Effect: Is Burning of Fossil Fuels Affecting World Climate?”²³⁵ As the newsletter explained, “Based on future world energy demand, many scientists believe that carbon dioxide levels could double within the next century,” a result which scientists predict could lead to “melting of the arctic ice packs,” causing “sea levels [to] rise 15 to 20 feet.”²³⁶ The newsletter also noted the need for urgent action “because of the extremely long lead time for any conceivable corrective actions.”²³⁷

Throughout the 1980s, many other FFCs formed their own research units focused on climate modeling.²³⁸ API also provided a forum for FFCs to share their research efforts and corroborate their findings through the CO₂ and Climate Task Force and other internal committees.²³⁹

In 1988, Shell issued an internal “Confidential” report on “The Greenhouse Effect” to the Shell Environmental Conservation Committee.²⁴⁰ The report reached analogously alarming conclusions as those circulated internally by API, Exxon, and Mobil. The report projected that atmospheric concentrations of CO₂ would double in the 21st century, causing an increase in global temperatures that

could create significant changes in sea level, ocean currents, precipitation patterns, regional temperature, and weather. These changes could be larger than any that have occurred over the last 12,000 years. Such relatively fast and dramatic changes would impact on the human environment, future living standards and food supplies, and could have major social, economic, and political consequences.²⁴¹

The report also informed Shell of the “reasonable scientific agreement that increased levels of greenhouse gases would cause global warming” and confirmed that fossil fuel combustion was

²³⁴ *Id.*

²³⁵ *Atmospheric Greenhouse Effect: Is Burning Fossil fuels Affecting World Climate?*, MOBIL OIL CORP., Status Report Environmental & Toxicology Issue No. 83-2, 2–3 (June 1, 1983).

²³⁶ *Id.*

²³⁷ *Id.*

²³⁸ See Banerjee, *supra* note 213.

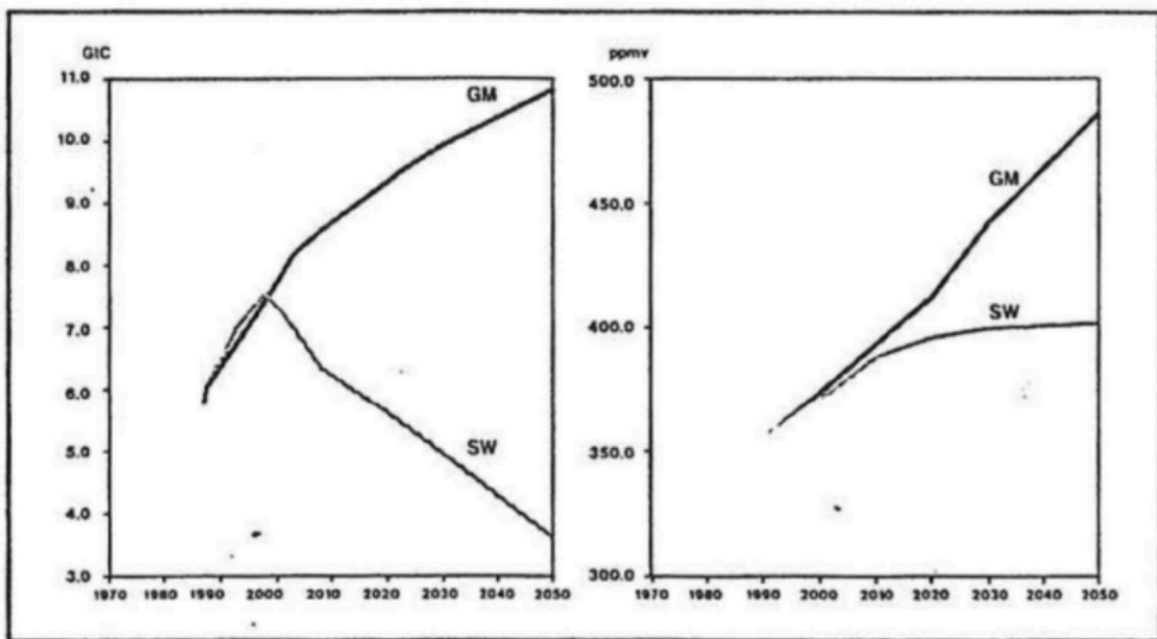
²³⁹ *Id.*

²⁴⁰ *The Greenhouse Effect*, SHELL INTERNATIONALE PETROLEUM, 1 (May 1988), <https://www.documentcloud.org/documents/4411090-Document3.html#document/p9/a411239>.

²⁴¹ *Id.* at 1.

“the major source of CO₂ in the atmosphere.”²⁴² Although the report noted that global warming was not yet detectable, it warned that “by the time the global warming becomes detectable it could be too late to take effective countermeasures to reduce the effects or even to stabilise the situation,” and urged that the energy industry needs to consider how it should “play its part.”²⁴³

A year later, a confidential Shell report imagined two futures: one in which fossil fuels were controlled, which the report dubbed “SUSTAINABLE WORLD” and one in which they weren’t, which the report dubbed “GLOBAL MERCANTILISM.”²⁴⁴ In SUSTAINABLE WORLD (SW on the chart below), greenhouse gas emissions would peak around the year 2000 and decline rapidly thereafter, and total CO₂ concentrations would be limited to 400 ppm.²⁴⁵ GLOBAL MERCANTILISM (GM on the chart), on the other hand, would see emissions continue to rise.²⁴⁶



What would the world be like under GLOBAL MERCANTILISM (the path we are currently on)? According to Shell:

There would be more violent weather—more storms, more droughts, more deluges. Mean sea level would rise at least 30 cm. Agricultural patterns would be most dramatically changed. [. . .] The potential refugee problem in GLOBAL MERCANTILISM could be unprecedented. [. . .] Boundaries would count for little—overwhelmed by the numbers. Conflicts would abound. Civilization could prove a fragile thing. The logic of SUSTAINABLE WORLD is a society choosing

²⁴² *Id.*

²⁴³ *Id.*

²⁴⁴ See Shell Confidential Group Planning at 35, *supra* note 8.

²⁴⁵ *Id.*

²⁴⁶ *Id.*

to channel some investments into environmental maintenance against this contingency.²⁴⁷

This is the world Shell and other FFCs actively chose to create by pushing the world into the high-carbon scenario it knew would be so profoundly dangerous.

2. Protecting company infrastructure

FFCs were not only on notice that their fossil fuel products would cause dangerous climate change—they demonstrated their understanding of and belief in these scientific conclusions by designing and making modifications to their own infrastructure, often at significant expense, in order to prepare for the coming reality of melting ice caps, worsening storms, and rising sea levels.

In 1973, Esso Research and Engineering Company (Exxon) obtained a patent for a cargo ship capable of breaking through sea ice²⁴⁸ and another for an oil tanker²⁴⁹ designed for use in areas of the Arctic that would not be reachable until climate change had intensified. In 1974, Chevron obtained a patent for a mobile arctic drilling platform designed to withstand significant interference from lateral ice masses, allowing for drilling in areas with increased ice flow movement due to elevated temperatures.²⁵⁰ That same year, Texaco (Chevron) obtained a patent for a mobile arctic drilling and production platform that allowed for drilling in previously unreachable areas of the Arctic that would become seasonally accessible due to polar ice melt.²⁵¹ And in 1984, Shell obtained a patent for an Arctic offshore drilling platform similar to Chevron's.²⁵²

In 1989, Shell initiated a \$3 billion redesign of an offshore natural gas platform in the North Sea.²⁵³ Shell initially planned to construct the platform to reach a height of 30 meters above sea level, the standard height for platforms of this type.²⁵⁴ Shell was concerned, however, that this height would not be sufficient to make the platform operable at the end of its lifespan in 2065.²⁵⁵ Engineers found that anticipated sea level rise, caused by increases in atmospheric CO₂ from

²⁴⁷ *Id.* at 36.

²⁴⁸ U.S. Patent No. 3,727,571, *Icebreaking Cargo Vessel*, ESSO RESEARCH AND ENGINEERING CO. (filed Apr. 17, 1973), <https://patentimages.storage.googleapis.com/aa/05/5c/ba8a0dc55c08ef/US3727571.pdf>.

²⁴⁹ U.S. Patent No. 3,745,960, *Tanker Vessel*, ESSO RESEARCH AND ENGINEERING CO. (filed July 17, 1973), <https://patentimages.storage.googleapis.com/b9/7c/62/fc64d5de1f7192/US3745960.pdf>.

²⁵⁰ U.S. Patent No. 3,831,385, *Arctic Offshore Platform*, CHEVRON RESEARCH CO. (filed Aug. 27, 1974), <https://patentimages.storage.googleapis.com/87/5d/03/83f5da92318d67/US3831385.pdf>.

²⁵¹ U.S. Patent No. 3,793,840, *Mobile Arctic Drilling and Production Platform*, TEXACO INC. (filed Feb. 26, 1974), <https://patentimages.storage.googleapis.com/52/d6/b3/9f23a65402d3a4/US3793840.pdf>.

²⁵² U.S. Patent No. 4,427,320, *Arctic Offshore Platform*, SHELL OIL CO. (filed Jan. 24, 1984), <https://patentimages.storage.googleapis.com/a5/67/da/9c7d06b9e89d1c/US4427320.pdf>.

²⁵³ See Lieberman & Rust, *supra* note 181.

²⁵⁴ *Id.*

²⁵⁵ *Id.*

combustion of fossil fuels—like the natural gas extracted at the platform—could lead the platform to be inundated during a bad storm.²⁵⁶ Accordingly, the engineers revised the plan to add one to two meters of height to the platform.²⁵⁷

Also in 1989, Esso Resources Canada (Exxon) commissioned a study on the impact of climate change on existing and proposed natural gas facilities in the Mackenzie River Valley and Delta, including extraction facilities on the Beaufort Sea and a pipeline crossing Canada’s Northwest Territory.²⁵⁸ The study found that “all climate scenarios indicate that significant increases in both temperature and precipitation will be experienced by the Mackenzie Valley,” meaning “large zones of the Mackenzie Valley could be affected dramatically by climatic change.”²⁵⁹ The study concluded that increasing temperatures, greater precipitation, melting permafrost, rising sea levels, and erosion could all threaten the company’s infrastructure in the region and recommended that the company factor these climatic changes into its future development plans.²⁶⁰

In 1994, the prospect of rising sea levels and increasingly severe storms played a major role in the construction of Europipe, a natural gas pipeline leading from a North Sea offshore platform to the German Coast. A joint venture of Shell, Exxon, and ConocoPhillips, among other FFCs, the project’s engineers noted that sea levels had risen over the last century and that there could be a “considerable increase of the frequency of storms as a result of climate change.”²⁶¹ They concluded that the pipeline design needed to include protections against these future climate impacts.²⁶²

In 1996, Mobil, Shell, and Imperial Oil (Exxon) took the likelihood of rising temperatures and sea levels into account in the design of their Sable gas field project off the coast of Nova Scotia, Canada.²⁶³ Mobil engineers wrote in design specifications that “[a]n estimated rise in water level, due to global warming, of 0.5 meters may be assumed” for the project’s 25-year lifespan.²⁶⁴

By acting on the conclusions of their internal climate research to protect their own infrastructure, FFCs demonstrated that they were not simply negligently ignoring or failing to take seriously the warnings that their research departments provided to the highest levels of corporate leadership over the course of multiple decades. These companies understood that continued fossil fuel

²⁵⁶ *Id.*

²⁵⁷ *Id.*

²⁵⁸ Stephen Lonergan & Kathy Young, *An Assessment of the Effects of Climate Warming on Energy Developments in the Mackenzie River Valley and Delta, Canadian Arctic*, SHELL ENERGY EXPLORATION & EXPLOITATION 7 5, 359–81 (Oct. 1, 1989).

²⁵⁹ *Id.* at 369, 377.

²⁶⁰ *Id.* at 375–377.

²⁶¹ See Lieberman & Rust, *supra* note 179.

²⁶² *Id.*

²⁶³ *Id.*

²⁶⁴ *Id.*

combustion had enough of a “substantial” or even “grave” risk of causing climate harms that they were willing to invest millions of dollars to protect their own infrastructure from those anticipated effects.

In short, the evidence would show beyond any reasonable doubt that the companies knew their business practices threatened serious changes to the climate—changes that clearly threatened human life. Despite that knowledge, they took one lucrative opportunity after another to double down on fossil fuels, block or delay an energy transition, and put real people’s lives at risk.

IV. Legal Questions

A. Would reckless endangerment charges be barred by the statute of limitations?

Reckless endangerment in the second degree is a Class A misdemeanor, which has a two-year statute of limitations, and reckless endangerment in the first degree is a Class D felony, which has a five-year statute of limitations.

However, New York courts have ruled that reckless endangerment can be charged as a continuing offense.²⁶⁵ For continuing offenses it is “the termination and not the starting date” of the commission of a crime that governs the statute of limitations, meaning the statute doesn’t begin to run until “the occurrence of the most recent act.”²⁶⁶ Because FFCs’ climate-related misconduct is ongoing, prosecutors should be able to reference acts and decisions made not just over the last two or five years, but stretching back to the first act “which may itself embody all the elements of the crime.”²⁶⁷ As Section III of this memo outlined, this gives prosecutors potentially decades of incriminating evidence with which to build a case.

B. Can New York’s reckless endangerment law be applied to FFCs’ climate-related conduct?

FFCs or their CEOs may argue that New York’s reckless endangerment statute was only meant to criminalize certain kinds of conduct and FFCs’ climate change-causing emissions and deception fall outside the scope of the offense. But New York courts have made clear that the reckless endangerment statute “is written in general terms with no exceptions.”²⁶⁸ For example, in *People v. Rodriguez*, defendants—who were charged with recklessly endangering the firefighters who responded to a fire they had started—argued that, because the reckless endangerment statute

²⁶⁵ *People v. Hernandez*, 235 A.D.2d 367, 368, 653 N.Y.S.2d 322.

²⁶⁶ *People v. Fletcher Gravel Co., Inc.*, 1975, 82 Misc.2d 22, 30, 368 N.Y.S.2d 392.

²⁶⁷ *Id.*

²⁶⁸ *People v. Rodriguez*, 1981, 110 Misc.2d 828, 832, 442 N.Y.S.2d 948.

“does not specifically include the case of someone causing a fire to which firemen respond,” such conduct was not intended to be covered under the law.²⁶⁹ But the court disagreed with this reasoning, ruling that the statutory text creates “no inference that the legislature intended to exclude this type of conduct” and, quite to the contrary, “the absence of an exception creates a strong presumption that the legislature intended none.”²⁷⁰ Courts have also clarified that the offense can encompass “conduct which does not involve the performance of a physical act.”²⁷¹

While the FFC conduct described in this memo certainly differs from the kind of behavior targeted in most reckless endangerment prosecutions, this novelty is irrelevant, so long as prosecutors can demonstrate that FFCs or their CEOs engaged in reckless conduct that put New Yorkers at serious risk of injury or death.

C. Can conduct that creates generalized risk—versus risk for specific or proximate individuals—constitute reckless endangerment?

FFCs or their CEOs may similarly argue that the generalized risk created by climate change—which to some degree threatens every human being on the planet—does not fit into the framework of reckless endangerment. According to this reasoning, reckless endangerment should only apply to situations in which conduct endangers a defined set of proximately located individuals. But New York courts have dismissed this argument in the past, writing that the offense is meant to “encompass those criminal acts perpetrated not against specific persons but evincing wanton and reckless conduct towards unspecified persons.”²⁷²

The contention that reckless endangerment requires a criminal act directed at someone who is present at the time the act is committed is without merit. There is nothing in the statutory definition of reckless endangerment or the term “recklessly”, which so narrowly restricts its application. [. . .] The proximity of another person is relevant only insofar as it bears on the degree of risk to which such other person may be exposed, and as it relates to the alleged recklessness of the defendant, e. g., the foreseeability of the harm to another.²⁷³

This principle is illustrated quite clearly in *People v. Vizzini*, a case dealing with officials in a firefighters’ union that were charged with reckless endangerment for falsifying vote totals to launch a citywide strike. This act did not target any specific group of people, but rather deprived every resident of New York City “of their fire protection.”²⁷⁴ The court wrote that creating “a substantial risk of serious physical injury to another person” was:

²⁶⁹ *Id.* at 831.

²⁷⁰ *Id.* at 832.

²⁷¹ *People v. Vizzini*, 1974, 78 Misc.2d 1040, 1048, 359 N.Y.S.2d 143.

²⁷² *In re A. L.*, 1970, 64 Misc.2d 360, 362, 314 N.Y.S.2d 708.

²⁷³ *People v. Rodriguez* at 831, *supra* note 268.

²⁷⁴ *People v. Vizzini* at 1047, *supra* note 271.

a stunning understatement compared to the spectre of neighborhoods destroyed by fire in a matter of hours. Without the necessity of quoting the horrifying conflagration statistics introduced in the Grand Jury and certain to be introduced at the trial, it need only be said that a trial jury could find that the risk inherent in depriving more than eight million people—many of whom live in close quarters in the tinderbox slums of Harlem, Bedford-Stuyvesant and the South Bronx—of the protection of a force of 10,000 firefighters—most of whom are needed to prevent the loss of life and property in such places—was not only “substantial” but was tantamount to imminent peril. And the jury might well be convinced beyond a reasonable doubt that the callousness of the conduct which created such a risk for mere personal or pecuniary gain amounted to “recklessness” under the statute.²⁷⁵

If the statutory text of reckless endangerment was a stunning understatement to describe conduct that increased the chances of a fire spreading, the same should be true for conduct that is increasing the chances of catastrophic hurricanes, lethal heat waves, and other climate disasters—and not just for a discrete period of time like the duration of the labor strike in *Vizzini*, but indefinitely, and at a rapidly escalating scale. Indeed, it seems difficult to imagine how a court might distinguish the evidence of risk and recklessness in *Vizzini* from the “horrifying [] statistics” and evidence of “callousness” that could be introduced against FFCs, except in ways that make the *Vizzini* evidence seem “a stunning understatement” by comparison.

In the conclusion of the *Vizzini* opinion, the court wrote, “Admittedly, there has never been a prosecution similar to the instant case. But there also has never been such a strike.”²⁷⁶ This statement could well have been made about a FFC prosecution. Admittedly, there has never been a case quite like the climate prosecution proposed in this memo. But there has also never been a threat like climate change.

D. Is reckless endangerment in the first degree too difficult to prove?

First degree reckless endangerment differs from second degree reckless endangerment in two respects: The defendant’s conduct must create not just a “substantial risk of serious physical injury,” but a “grave risk of death,” and the defendant must act not only with a *mens rea* of recklessness, but with an additional *mens rea* of “depraved indifference to human life.” Although these requirements make the first degree offense more difficult to prove, FFCs’ conduct and culpability still clear these bars.

Climate disasters clearly create a risk of death for New Yorkers—that should be irrefutable, given that they have resulted in numerous New Yorkers being killed. The primary question, then,

²⁷⁵ *Id.* at 1047–1048.

²⁷⁶ *Id.* at 1048.

is whether prosecutors can prove that the risk of death created by FFCs' conduct is "grave." Courts have interpreted "grave" to mean "imminently dangerous."²⁷⁷ "Imminent" danger can mean "near or impending" danger.²⁷⁸ Prosecutors can make a strong argument that the dangers of climate change are not just near or impending, they are here and ongoing—indeed, whether it's record-breaking storms or lethal heat, New York has already experienced many grave climate disasters, and will undoubtedly be hit with more in the coming years.²⁷⁹ It also should not matter that any given climate disaster likely poses a grave threat of death to only a small percentage of New Yorkers—in the previously discussed *Vizzini* case, the court found that the risk of fire created by the firefighters' strike was "tantamount to imminent peril,"²⁸⁰ even though any hypothetical fires that occurred during the strike would likely impact particular neighborhoods rather than the city as a whole.

To prove "depraved indifference to human life," prosecutors must demonstrate that a defendant's conduct reflected an "utter disregard for the value of human life."²⁸¹ This requirement is generally met when a defendant endangers a large group of people indiscriminately, such as by "shooting into a crowd, placing a time bomb in a public place, or opening the door of the lions' cage in the zoo."²⁸² Given the truly vast scale of human suffering and death that climate change is already causing—and that FFCs themselves predicted it would cause—demonstrating that FFCs' or their CEOs' conduct reflected an "utter disregard for the value of human life" should not be very challenging.

E. Can FFCs argue that consumers are really to blame for climate harms?

FFCs frequently claim that it is the consumers of fossil fuel products that are responsible for climate change. ExxonMobil CEO Darren Woods recently argued that "[t]he people who are generating those emissions need to be aware of and pay the price for generating those emissions."²⁸³ Another FFC executive claimed, "Blaming the producers of oil and gas for climate change is like blaming farmers for obesity. It's our societal consumption that is the issue."²⁸⁴ Another typical FFC claim is that "a distinction must be made between emissions resulting directly from our activities and those which arise from the use of the products which we make

²⁷⁷ *People v. Lynch*, 95 N.Y.2d 243, 247, 715 N.Y.S.2d 691, 738 N.E.2d 1172 (2000). It's worth noting that imminence is not a requirement for reckless endangerment in the second degree. *See, e.g., Gayle v. Sessions*, Docket No. 16-3953-ag, — Fed.Appx. —, 2018 WL 341736 (2d Cir. 2018) (acknowledging that reckless endangerment in the second degree "does not specify that the risk of death or serious injury must be 'imminent'").

²⁷⁸ *In re A.D.*, 52 Misc. 3d 1211(A), 41 N.Y.S.3d 718 (Fam. Ct. 2016).

²⁷⁹ *See* Section III.A.

²⁸⁰ *People v. Vizzini* at 1048, *supra* note 271.

²⁸¹ *People v. Suarez*, 6 N.Y.3d 202, 214, 811 N.Y.S.2d 267, 276, 844 N.E.2d 721, 730 (2005).

²⁸² *People v. Payne*, 3 NY3d 266, 272 (2004).

²⁸³ Dharna Noor & Oliver Milman, *Fury after Exxon chief says public to blame for climate failures*, THE GUARDIAN (Mar. 4, 2024), <https://www.theguardian.com/us-news/2024/mar/04/exxon-chief-public-climate-failures>.

²⁸⁴ Sam Merideth, *Oil CEO says blaming the energy industry for the climate crisis 'like blaming farmers for obesity'*, CNBC (Dec. 5, 2023), <https://www.cnbc.com/2023/12/05/oil-ceo-rejects-fossil-fuel-industry-to-blame-for-the-climate-crisis.html>.

available to our customers and which we do not control.”²⁸⁵ But experienced prosecutors will know that blaming the victim, even in a corporate prosecution, is no defense at all.²⁸⁶

As a legal matter, these claims amount to an argument that consumers’ end-stage emissions constitute an intervening cause that breaks the chain of causation connecting FFCs’ conduct to climate impacts. But to absolve a defendant of criminal liability, the intervening conduct of a third party must be of “an extraordinary nature,” for when “the intervening act is a natural and foreseeable consequence of a circumstance created by defendant, liability will subsist.”²⁸⁷ It is unlikely that FFCs will persuade a judge or jury that they did not foresee that their fossil fuel products would be used precisely as intended—indeed, one can imagine this implication that regular people are ultimately to blame for climate change might rankle some jurors. And this argument is made even more difficult by the fact that FFCs deliberately engaged in a campaign to keep the public misinformed about the risks of their products.²⁸⁸

F. Can FFCs claim a necessity defense?

FFCs might argue that, although they were aware of the risks associated with their products, there were no reasonable alternatives, and so a shift away from fossil fuels would have caused so much damage that maintaining their business model at all costs was necessary for the greater good—essentially, a necessity defense. To establish a necessity defense, a defendant must show their conduct was “necessary as an emergency measure to avoid an imminent public or private injury which is about to occur.”²⁸⁹ FFCs cannot credibly argue that their circumstances meet this condition. While it is certainly true that an overnight shutdown of all fossil fuel production would cause extremely negative consequences, that was never an imminent threat—indeed, it was never a situation that had any chance at all of occurring.

Moreover, reasonable alternatives to their criminal conduct were always available. As a result, even if FFCs were to present necessity less as a formal defense at trial, and more as a part of the

²⁸⁵ Matthew Taylor, *Climate emergency: what the oil, coal, and gas giants say*, THE GUARDIAN (Oct. 10, 2019), <https://www.theguardian.com/environment/2019/oct/09/climate-emergency-what-oil-gas-giants-say>.

²⁸⁶ See, e.g. *U.S. v. Hamilton*, 182 F. Supp. 548, 550 (D.D.C. 1960) (chain of causation not broken when assault victim removed breathing tubes); *People v. Lewis*, 57 P. 470, 471 (Cal. 1899) (chain of causation not broken when gunshot victim cut his own throat); *Ford v. State*, 521 N.E.2d 1309, 1310 (Ind. 1988) (chain of causation not broken when gunshot victim refused blood transfusion); *Stephenson v. State*, 179 N.E. 633, 635 (Ind. 1932) (chain of causation not broken when rape and assault victim poisoned self while held captive); *People v. Webb*, 415 N.W.2d 9 (Mich. App. 1987) (chain of causation not broken when bar-room-brawl victim initially refused help from paramedics); *People v. Velez*, 602 N.Y.S.2d 758, 759 (N.Y. Sup. 1993) (chain of causation not broken when gunshot victim had a nurse remove a feeding tube and refused nourishment); *State v. Pelham*, 746 A.2d 557, 559 (N.J. Super. L. Div. 1998) (chain of causation not broken when victim had life support removed according to family wishes and his living will),

²⁸⁷ *Kush by Marszalek v. City of Buffalo*, 59 N.Y.2d 26, 33, 462 N.Y.S.2d 831, 449 N.E.2d 725 (1983).

²⁸⁸ When a party misleads or deceives another into taking some further harmful action, the deceived party is not viewed as breaking the chain of causation. See H.L.A. Hart & Tony Honore, *Causation in the Law* 326 (1985).

²⁸⁹ NY PL § 35.05(2).

“theory” of the defense case, prosecutors may point to all the other, less harmful options FFCs could have and should have explored. Renewable energy technologies have existed for decades and, without FFCs’ climate disinformation, would likely have begun dramatically expanding their market share long ago. Indeed, the entire motivation behind FFCs’ campaigns of climate deception was to block and constrain the development and spread of these competitors to their fossil fuel products. In reality, then, the choice FFCs faced was between, on the one hand, a gradual transition to clean energy sources that could have begun many years ago, and, on the other hand, their ferocious and fraudulent efforts to block any and all attempts to begin that transition. As such, FFCs have no compelling case for invoking a necessity defense.

G. Can a prosecution against FFCs for reckless endangerment be preempted?

FFCs might also claim that federal regulations preempt enforcement of state criminal laws against them for acts committed while engaging in federally regulated behavior. Preemption occurs when enforcement of a state law either directly conflicts with federal law or impinges on a field that Congress intended to exclusively occupy with federal regulation.²⁹⁰ But preemption of general criminal laws is an implausible interpretation of congressional intent. States’ ability to prosecute crimes like reckless endangerment within their borders is a core state police power around which federal courts rightly tread very lightly, and no authority suggests that Congress intended to exert exclusive jurisdiction over general crimes committed by actors engaged in federally regulated conduct like fossil fuel production.

Although preemption doctrine is complex and its contours can be difficult to predict, there is no precedent for preemption of any generally applicable criminal law like reckless endangerment; indeed, there is no indication in the case law that a defendant has made the argument. It is therefore exceedingly unlikely that a preemption defense would be available in a prosecution under generally applicable homicide law.

H. Does the First Amendment protect FFCs’ false and misleading climate speech?

FFCs will likely argue that the First Amendment protects their reckless promotion of climate disinformation, as they have asserted in numerous consumer protection cases seeking damages

²⁹⁰ A full review of preemption doctrine is a complex inquiry that lies beyond the scope of this memo.

for false advertising and fraud.²⁹¹ But the First Amendment does not protect false commercial speech or speech that is an integral part of a crime.

Commercial speech receives fewer constitutional protections than noncommercial speech and can have content-based restrictions imposed on it.²⁹² False and misleading commercial speech is wholly unprotected,²⁹³ as commercial speech can be “neither misleading nor related to unlawful activity” to receive First Amendment protections.²⁹⁴ FFCs will likely argue that many of their false and misleading statements related to climate change were noncommercial because they were intended to influence the public or the government. But speech can be commercial even if it touches on matters of public concern.²⁹⁵ FFCs’ false greenwashing claims, misleading advertisements touting natural gas as a climate solution, deceptive advertorials denying the existence of climate change, and other climate disinformation efforts were and still are primarily targeted at consumers, investors, and the broader public. As such they are not protected by the First Amendment.

Moreover, numerous speech-related crimes strip even noncommercial speech of its First Amendment protections. Similar to how FFCs’ statements contributed to the reckless endangerment of New Yorkers, statements that constitute aiding and abetting are “too instrumental in and intertwined with the performance of criminal activity to retain First

²⁹¹ See, e.g., *Commonwealth v. Exxon Mobil Corp.*, No. 1984CV03333-BLS1, 2021 WL 3488414, at *3–4 (Mass. Super. June 22, 2021), *aff’d* 489 Mass. 724 (Mass. 2022) (denying Exxon’s anti-SLAPP motion to dismiss in part because the statements had a commercial nature even though some constituted petitioning); *State ex rel. Jennings v. BP Am. Inc.*, No. N20C-09-097 MMJ CCLD, 2024 WL 98888, at *22 (Del. Super. Ct. Jan. 9, 2024) (noting but refusing to rule on API’s argument that its statements were advocacy, not commercial and thus protected under the First Amendment); Anti-SLAPP Special Motion to Dismiss at 33, *City of Hoboken v. Chevron Corp.*, No. MER-L-001797-22, 45 F.4th 699 (N.J. 2023) (arguing that their advertisements are immune from prosecution because they were part of a publicity campaign directed at the public seeking government action), https://climatecasechart.com/wp-content/uploads/case-documents/2023/20231016_docket-MER-L-001797-22_moti-on-to-dismiss-4.pdf.

²⁹² See *Ohralik v. Ohio State Bar Ass’n*, 436 U.S. 447, 445–56 (1978) (noting that commercial speech can be regulated more than noncommercial speech); *Bd. of Trustees of SUNY v. Fox*, 492 U.S. 469, 477 (1989) (noting that commercial speech is afforded “a limited measure of protection, commensurate with its subordinate position in the scale of First Amendment values[]”).

²⁹³ See *Virginia State Bd. of Pharmacy v. Virginia Citizens Consumer Council*, 425 U.S. 748, 771–772 (1976) (citing *Gertz v. Robert Welch, Inc.*, 418 U.S. 323, 340 (1974)) (“Untruthful speech, commercial or otherwise, has never been protected for its own sake.”).

²⁹⁴ *Cent. Hudson Gas & Elec. Corp. v. Pub. Serv. Comm’n*, 447 U.S. 557, 563–64 (1980) (“[T]here can be no constitutional objection to the suppression of commercial messages that do not accurately inform the public about lawful activity.”); see also *United States v. Schulz*, 529 F. Supp. 2d 341, 355 (N.D.N.Y. 2007) (noting that false or misleading commercial speech can be restricted if used for unlawful activity).

²⁹⁵ See *Cent. Hudson Gas*, 447 U.S. at 563 n.5 (1980) (distinguishing between direct comments on public issues and advertisements that can be linked to a current public debate); *Bolger v. Youngs Drug Prod. Corp.*, 463 U.S. 60, 65–68 (1983) (validating regulation of pamphlets for contraceptives as commercial speech despite them also touching on issues of public concern and noting that “[a]dvertisers should not be permitted to immunize false or misleading product information from government regulation simply by including references to public issues[]”).

Amendment protection.”²⁹⁶ Speech that “is the very vehicle of the crime itself” is not protected by the First Amendment²⁹⁷ “even if the prosecution rests on words alone.”²⁹⁸ FFCs’ conduct in spreading false and misleading climate disinformation would likely be considered too intertwined with the offense of reckless endangerment to be shielded by the First Amendment.

I. Can FFCs invoke a selective prosecution defense?

FFCs will likely try to frame any prosecution as part of an illegitimate conspiracy to use the criminal legal system to further political, rather than justice-related, goals. They have already used these talking points extensively in attempts to undermine civil litigation against them. For example, ExxonMobil responded to the first wave of municipal and state climate accountability lawsuits by filing a countersuit for abuse of process, civil conspiracy, and violations of the company’s constitutional rights, alleging that

[a] collection of special interests and opportunistic politicians are abusing law enforcement authority and legal process to impose their viewpoint on climate change. This conspiracy emerged out of frustration in New York, Massachusetts, and California with voters in other parts of the country and with the federal government for failing to adopt their preferred policies on climate change [. . .] ExxonMobil finds itself directly in that conspiracy’s crosshairs.²⁹⁹

A similar argument could be made in a malicious prosecution countersuit. It should be noted, however, that malicious prosecution is not a legal defense, but rather a tort action that can be brought following a successful defense. A plaintiff alleging malicious prosecution must establish that the criminal action brought against it was brought maliciously, without probable cause, and has been terminated in favor of the plaintiff. That is a much higher bar than exists in a purely civil context—and it can be reached only *after* a successful defense.

More on point, FFCs may argue that they are being selectively prosecuted. To support this defense, a defendant “bears a heavy burden of establishing illegal discriminatory practice.”³⁰⁰ They must show two factors: First, that the law was not applied to others “similarly situated,” and second, that the government’s discriminatory selection of the defendant was “invidious, that

²⁹⁶ *United States v. Mendelsohn*, 896 F.2d 1183, 1186 (9th Cir. 1990) (upholding a conviction for aiding and abetting illegal betting where defendants disseminated a computer program whose primary purpose was to assist others in recording and analyzing illegal sports betting); *Cf. Rice v. Paladin Enterprises, Inc.*, 128 F.3d 233 (4th Cir. 1997) (refusing to use the First Amendment to shield a publisher of a how-to book for hit men from civil aiding and abetting liability).

²⁹⁷ *United States v. Varani*, 435 F.2d 758, 762 (6th Cir. 1970).

²⁹⁸ *United States v. Freeman*, 761 F.2d 549, 552 (9th Cir. 1985) (holding that the First Amendment does not protect people counseling others on how to evade filing taxes).

²⁹⁹ Brittany De Lea, *Exxon blames California, New York in ‘conspiracy’ countersuit*, FOX BUSINESS (Feb. 14, 2018), <https://www.foxbusiness.com/politics/exxon-blames-california-new-york-in-conspiracy-countersuit>.

³⁰⁰ *People v. Barnwell*, 143 Misc.2d 922, 925, 541 N.Y.S.2d 664 (Crim.Ct. N.Y. County 1989).

is, based upon such impermissible considerations as race, religion or some other arbitrary classification.”³⁰¹

The “similarly situated” element of the test asks “whether a prudent person, looking objectively at the incidents, would think them roughly equivalent.”³⁰² It’s not clear what group FFCs could point to as being similarly situated to them regarding their role in causing climate change. Certainly there are other industries implicated in climate—for example, FFCs could ask why automakers are not being similarly prosecuted, considering the climate impacts of their products. But there is far less evidence that automakers had the early knowledge of climate change necessary to demonstrate recklessness, or that they engaged in coordinated campaigns of climate disinformation like FFCs did. And while no car companies are moving quickly enough, the industry is beginning a process of transitioning to electric vehicles, rather than doubling down on their reckless generation of emissions like FFCs continue to do.

Even if FFCs could show different treatment of similarly situated actors, they would additionally need to prove they were being singled out with an “evil eye and an unequal hand, so as to make unjust and illegal discriminations between persons in similar circumstances.”³⁰³ Perhaps FFCs could try to show this malevolent intent by arguing that their prosecution has nothing to do with the actual offenses being charged, and instead is motivated by prosecutors’ desire to “impose their viewpoint on climate change.”

But this is a weak argument in the context of a criminal prosecution for reckless endangerment, in which prosecutors are pursuing justice for actual victims who have been harmed or injured in climate-related disasters. That pursuit of justice is the core function of a prosecutor, and a disciplined practice of continuously bringing a judge or jury’s focus back to the facts of the case—that victims have been harmed, that they were harmed in disasters caused to a large degree by climate change, and that FFCs substantially and knowingly contributed to climate change—could prove effective both in defeating a selective prosecution defense and undercutting FFCs’ rhetorical attempts to change the topic.

V. Conclusion

Hundreds of New Yorkers have been harmed or killed by climate-related extreme weather.³⁰⁴ These threats didn’t come out of nowhere. They are directly tied to the conduct of a relatively small number of FFCs and their CEOs that are responsible for (1) generating a substantial portion of all the greenhouse gas emissions that have caused the planet to heat up and (2) deceiving the public about the dangers of their fossil fuel products so they could continue to

³⁰¹ *Id.*

³⁰² *Penlyn Dev. Corp. v. Incorporated Vil. of Lloyd Harbor*, 51 F Supp 2d 255, 264 (E.D.N.Y. 1999).

³⁰³ *Masi Mgt. v. Town of Ogden*, 273 A.D.2d 837, 838, 709 N.Y.S.2d 734 (4th Dept. 2000).

³⁰⁴ *See* Section III.A.

generate these emissions. These companies have made trillions of dollars from their reckless conduct, while regular people pay the price.

Victims of climate disasters deserve justice no less than the victims of street-level crimes. A strong case exists for charging major fossil fuel companies with reckless endangerment—strong enough, based on the publicly available information discussed in this memorandum, for state and local prosecutors in New York to consider initiating criminal investigations.

Of course, New York is not unique in this regard. In recent years climate-fueled heat waves, hurricanes, wildfires, and other disastrous weather events have killed thousands of Americans—have burned children alive in Maui,³⁰⁵ drowned families in Puerto Rico,³⁰⁶ killed people by heatstroke in the Pacific Northwest and elsewhere³⁰⁷—and this loss of life will continue to accelerate as climate chaos intensifies. The charges described in this memo provide a starting point for similar analyses that could, and should, be undertaken by prosecutors in every jurisdiction whose residents experience a risk of serious injury or death due to climate disasters.

³⁰⁵ Amanda Jackson, *A 7-year-old boy and his relatives are among the dozens killed in the Maui wildfires. Here's what we know about some of the 115 lives lost*, CNN (Aug. 21, 2023), <https://www.cnn.com/2023/08/14/us/maui-wildfires-victims-identified/index.html>.

³⁰⁶ *Hurricane Maria's victims*, HURRICANE MARIA'S DEAD, <https://hurricanemariasdead.com>.

³⁰⁷ See Sjoukje Philip et. al., *Rapid attribution analysis of the extraordinary heat wave on the Pacific coast of the US and Canada in June 2021*, EARTH SYSTEM DYNAMICS 13, 1689–1713 (Dec. 8, 2022), <https://esd.copernicus.org/articles/13/1689/2022/>; see also *Western North American extreme heat virtually impossible without human-caused climate change*, WORLD WEATHER ATTRIBUTION (Jul. 7, 2021); <https://www.worldweatherattribution.org/western-north-american-extreme-heat-virtually-impossible-without-human-caused-climate-change/>.