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SUPERIOR COURT OF THE STATE OF CALIFORNIA
COUNTY OF SAN FRANCISCO
UNLIMITED JURISDICTION

COORDINATION PROCEEDING SPECIAL TITLE [CRC 3.550(c)] **FUEL INDUSTRY CLIMATE CASES**	JUDICIAL COUNCIL COORDINATION PROCEEDING NO. 5310 Case No.: CJC-24-005310
THIS CASE RELATES TO: *The People of the State of California, acting by and through the San Francisco City Attorney David Chiu, v. BP p.l.c. et al.*, San Francisco Superior Court, Case No.: CGC-17-561370 THE PEOPLE OF THE STATE OF CALIFORNIA, acting by and through the San Francisco City Attorney DAVID CHIU, and the CITY AND COUNTY OF SAN FRANCISCO, a Municipal Corporation, Plaintiffs, vs.	**SECOND AMENDED COMPLAINT FOR:** (1) PUBLIC NUISANCE ON BEHALF OF THE PEOPLE OF THE STATE OF CALIFORNIA; (2) PUBLIC NUISANCE; (3) PRIVATE NUISANCE; (4) TRESPASS; (5) STRICT PRODUCTS LIABILITY – FAILURE TO WARN; (6) NEGLIGENT PRODUCTS LIABILITY – FAILURE TO WARN; and (7) NEGLIGENCE **JURY TRIAL DEMANDED**

BP P.L.C.; BP AMERICA INC.; CHEVRON CORPORATION; CHEVRON U.S.A. INC.; CONOCOPHILLIPS; CONOCOPHILLIPS COMPANY; PHILLIPS 66; PHILLIPS 66 COMPANY; EXXON MOBIL CORPORATION; EXXONMOBIL OIL CORPORATION; SHELL PLC; SHELL USA, INC.; SHELL OIL PRODUCTS COMPANY LLC; and DOES 1 through 10,

Defendants.

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Plaintiffs—the People of the State of California, by and through San Francisco City Attorney David Chiu (the "People"), and the City and County of San Francisco ("City," and together with the People, "Plaintiffs")—bring this action against Defendants BP p.l.c.; BP America Inc.; Chevron Corporation; Chevron U.S.A. Inc.; ConocoPhillips; ConocoPhillips Company; Phillips 66; Phillips 66 Company; Exxon Mobil Corporation; ExxonMobil Oil Corporation; Shell plc; Shell USA, Inc.; Shell Oil Products Company LLC; and Does 1–10, (collectively, "Defendants"), and allege as follows:

I. INTRODUCTION

1. The fossil fuel industry has known for decades, based on its own internal research, that fossil fuels produce carbon dioxide and other greenhouse gas pollution that can have catastrophic consequences for the planet and its people. The industry took these internal scientific findings seriously, investing heavily to protect its own assets and infrastructure from rising seas, stronger storms, and other climate change impacts. But rather than warn consumers and the public, fossil fuel companies and their surrogates mounted a disinformation campaign to discredit the scientific consensus on climate change; create doubt in the minds of consumers, the media, business leaders, and the public about the climate change impacts of burning fossil fuels; and delay the energy economy's transition to a lower-carbon future while maximizing profits.

2. This successful climate deception campaign had the purpose and effect of inflating and sustaining the market for fossil fuels, which drove up greenhouse gas emissions, accelerated global warming, and brought about devastating climate change impacts to San Francisco and its environmental justice communities[1] in particular. Plaintiffs are already enduring the effects of global warming-induced sea level rise, extreme precipitation and heat, and poor air quality. As a result of the fossil fuel industry's lies and deceit, Plaintiffs are confronted with the need to protect San Francisco's people, businesses, and infrastructure from these and other climate change hazards.

[1] The term "environmental justice communities" is defined as areas facing the top one-third of cumulative environmental and socioeconomic burdens across San Francisco. *See* San Francisco General Plan, Environmental Justice Framework, https://generalplan.sfplanning.org/Environmental_Justice_Framework.htm.

3. Despite the clear harm to San Francisco and other communities across the country, Defendants continue to peddle climate disinformation and attempt to mislead the public concerning the environmental impacts of their fossil fuel products.

4. Plaintiffs bring this action against Defendants for creating, contributing to, and/or assisting in the creation of climate change-related harms in San Francisco. As more fully alleged below, Defendants created, contributed to, and/or assisted in the creation of a nuisance; caused trespasses to occur on City-owned property; failed to adequately warn consumers, the City, and the public of the risks of climate change, climate change-related harms, and other dangers that Defendants knew would inevitably follow from the intended or reasonably foreseeable use of their products; and violated their duties of care to exercise due care in the marketing, sale, and/or labeling of their products and to act reasonably for the protection of San Francisco and its residents and to avoid inflicting the injuries described herein.

5. Defendants are major, publicly-owned members of the fossil fuel industry, including extractors, producers, refiners, manufacturers, distributors, promoters, marketers, and/or sellers of raw and refined fossil fuel products. Each Defendant funded, staffed, organized, and otherwise supported efforts to deceive the public and consumers—in and outside of San Francisco—about the role of fossil fuel products in causing the global climate crisis.

6. The rate at which Defendants have extracted and sold fossil fuel products has exploded since the Second World War, which has driven a concurrent increase in carbon dioxide ("CO_2") and other emissions from those products. Fossil fuel emissions—especially CO_2—are far and away the dominant driver of global warming.[2] The substantial majority of all anthropogenic greenhouse gas emissions in history have occurred from the 1950s to the present, a period known as the "Great Acceleration."[3] About three-quarters of all industrial CO_2 emissions in history have

[2] *See* Intergovernmental Panel on Climate Change ("IPCC"), *Summary for Policymakers in Climate Change 2021: The Physical Science Basis. Contribution of Working Group I in the Sixth Assessment Report* (2021), at 4–9, https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf.

[3] Will Steffen et al., *The Trajectory of the Anthropocene: The Great Acceleration*, 2 The Anthropocene Review 81, 81 (2015).

occurred since the 1960s,[4] and more than half have occurred since the late 1980s.[5] The annual rate of CO_2 emissions from extraction, production, and consumption of fossil fuels has increased substantially since 1990.[6]

7. Defendants have known for more than 50 years that greenhouse gas pollution from fossil fuel products would have significant adverse impacts on the Earth's climate and sea levels. Armed with that knowledge, Defendants took steps to protect their own assets from climate change-related harms and risks through immense internal investment in research, infrastructure improvements, and plans to exploit new business opportunities in a warming world.

8. But instead of warning the public of the known consequences flowing from the intended and foreseeable use of their products or representing those consequences truthfully, Defendants concealed and misrepresented the dangers of fossil fuels; disseminated false and misleading information about the existence, causes, and dangers of climate change; and aggressively promoted the profligate use of their products at ever-greater volumes without regard for the dangers of doing so. Since at least the late 1980s, Defendants have spent millions of dollars orchestrating a massive disinformation campaign to cast doubt on the science of climate change; to shuttle climate denialist theories into mainstream media and science despite the fact that their own scientists had already debunked those theories; and to conceal the role of fossil fuels in driving the climate crisis. More recently, Defendants have pivoted to a new strategy of commercial deception: greenwashing. Today, Defendants misleadingly exaggerate their investments in wind, solar, and other lower carbon energy resources to encourage continued consumption of their fossil fuel products. Defendants also falsely advertise certain fossil fuel products as "green" or "clean," while concealing the fact that those very same products are leading causes of climate change. Defendants individually and collectively played leadership roles in all of these campaigns, which were intended to and did target consumers, including those in San Francisco.

[4] R.J. Andres et al., *A Synthesis of Carbon Dioxide Emissions from Fossil-Fuel Combustion*, 9 Biogeosciences 1845, 1851 (2012).

[5] *Ibid.*

[6] Global Carbon Project, Global Carbon Budget 2021, https://www.globalcarbonproject.org/global/images/carbonbudget/Infographic_Emissions2021.pdf.

9. Defendants, individually and collectively, have substantially and measurably contributed to San Francisco's climate crisis-related injuries. All Defendants' actions in concealing the dangers of, and promoting false and misleading information about, their fossil fuel products have contributed substantially to consumer demand for fossil fuels and the consequent buildup of CO_2 in the atmosphere that drives global warming and its physical, environmental, and socioeconomic consequences, including those affecting Plaintiffs. Consequently, substantially more anthropogenic greenhouse gases have been emitted into the atmosphere than would have been emitted absent Defendants' tortious and deceptive conduct. If not for Defendants' tortious and deceptive conduct, the damaging consequences of climate change in San Francisco would have been far less extreme than those currently occurring. Similarly, future harmful effects would also have been far less damaging and costly—or would have been avoided entirely.

10. While Defendants have promoted and profited from the extraction and consumption of fossil fuels, Plaintiffs have spent, and will continue to spend, millions of dollars to recover from and adapt to climate change-induced harms. For example, Plaintiffs will have to fortify infrastructure against sea level rise and extreme precipitation and the attendant coastal and inland flooding. Plaintiffs will also have to undertake numerous other interventions that have and will become necessary to protect San Francisco's people and infrastructure from extreme heat, poor air quality, and other climate change hazards.[7]

11. Sea levels are rising at rates unprecedented in the history of human civilization because of global warming.[8] Global warming-induced sea level rise is already causing flooding of low-lying areas of San Francisco, increased shoreline erosion, and salt water impacts to San Francisco's infrastructure.[9] The rapidly rising sea level along the Pacific coast and in San Francisco

[7] *See* San Francisco Climate Action Plan 2021, at 26–27, https://www.sfenvironment.org/files/events/2021_climate_action_plan.pdf.

[8] Gary Griggs et al., Rising Seas in California: an update on sea-level rise science, California Ocean Science Trust, at 8 (Apr. 2017) ("Rising Seas in California"), http://www.opc.ca.gov/webmaster/ftp/pdf/docs/rising-seas-in-california-an-update-on-sea-level-rise-science.pdf.

[9] San Francisco Sea Level Rise Action Plan at 6 (Mar. 2016), http://default.sfplanning.org/plans-and-programs/planning-for-the-city/sea-level-rise/160309_SLRAP_Executive_Summary_EDreduced.pdf.

Bay, moreover, poses an imminent threat of catastrophic storm surge flooding because any storm would be superimposed on a higher sea level.[10] This threat to human safety and to public and private property is becoming more dire every day as global warming reaches ever more dangerous levels and sea level rise accelerates. The global warming-induced sea level rise from Defendants' deceptive conduct is an irreversible condition on any relevant time scale: it will last hundreds or even thousands of years. San Francisco must take abatement action now to protect public and private property from this looming threat by building costly sea level rise adaptation infrastructure.

12. Similarly, climate change causes more frequent and extreme weather events, extreme heat, and reduced air quality, which damage public infrastructure and create cascading public health problems. Destructive and deadly atmospheric river events dropped record amounts of rainfall in San Francisco during the winter of 2022–23 and are expected to become more frequent.[11] On September 1, 2017, San Francisco's temperatures hit 106° F—the highest temperature ever recorded in San Francisco. Emergency medical calls during this heat wave increased by 51%, emergency department visits increased by 12%, and hospitalizations increased by 15%.[12] And during the 2018 Butte County Camp Fire, wildfire smoke caused San Francisco's Air Quality Index to exceed 150, "unhealthy," for 12 consecutive days, peaking at 250.[13]

13. Defendants' deceptive and tortious conduct was a substantial factor in bringing about all these dire climate change impacts in San Francisco, including: sea level rise,[14] more frequent and

[10] Rising Seas in California at 16–17 (Apr. 2017); Climate Change Impacts in the United States: The Third National Climate Assessment, southwest chapter at 469-70 (2014), http://nca2014.globalchange.gov/system/files_force/downloads/low/NCA3_Full_Report_20_Southwest_LowRes.pdf?download=1.

[11] *See* C. Patricola et al., *Future Changes in Extreme Precipitation Over the San Francisco Bay Area: Dependence on Atmospheric River and Extratropical Cyclone Events*, 36 Weather and Climate Extremes (June 2022), at 2, https://doi.org/10.1016/j.wace.2022.100440.

[12] Office of Resilience and Capital Planning, Department of Public Health, & Department of Emergency Management, *The Heat and Air Quality Resilience Plan* (May 2023), at 16.

[13] F. K. Chow et al., *High-Resolution Smoke Forecasting for the 2018 Camp Fire in California*, 103 Bulletin of the American Meteorological Society 1531 (June 24, 2022), https://doi.org/10.1175/BAMS-D-20-0329.1.

[14] *See* San Francisco Sea Level Rise Action Plan, Executive Summary at 4 (2016), http://default.sfplanning.org/plans-and-programs/planning-for-the-city/sea-level-rise/160309_SLRAP_Executive_Summary_EDreduced.pdf.

extreme precipitation events and associated flooding,[15] more frequent and intense heat waves along with exacerbation of localized "heat island" effects, and degraded air quality.[16]

14. These consequences have and will continue to disproportionately impact San Francisco's environmental justice communities, as climate change exacerbates existing environmental and public health stressors associated with socioeconomic and racial disparities.

15. Defendants' individual and collective conduct—including, but not limited to, their introduction of fossil fuel products into the stream of commerce while knowing but failing to warn of the threats those products posed to the world's climate; their wrongful promotion of fossil fuel products, including the misrepresentation and concealment of known hazards associated with the intended use of those products; and their public deception campaigns designed to obscure the connection between fossil fuel products and global warming—was a direct and proximate cause of Plaintiffs' injuries.

16. Accordingly, Plaintiffs bring this action against Defendants for public nuisance, private nuisance, trespass, failure to warn, and negligence. Plaintiffs respectfully request that this Court order Defendants to abate the nuisance they have created, contributed to, and/or assisted in the creation of, and that this Court use its equitable powers to order Defendants to mitigate future harm to the environment and people of San Francisco attributable to Defendants' unlawful actions, including, but not limited to, by granting preliminary and permanent equitable relief. Plaintiffs respectfully request that this Court order Defendants to pay damages.

17. Plaintiffs do not seek relief as to state-owned property and assets. Plaintiffs do not seek any remedy for harms or violations for which the State or State agencies have exclusive authority to recover damages or obtain injunctive relief.

18. Plaintiffs hereby disclaim injuries arising on federal property and those arising from Defendants' provision of non-commercial, specialized fossil fuel products to the federal government for military and national defense purposes. Plaintiffs seek no recovery or relief attributable to these injuries.

[15] *See* Patricola et al. (2022), *supra* note 11, at 2.

[16] *See The Heat and Air Quality Resilience Plan* (2023), *supra* note 12.

19. Plaintiffs do *not* seek to impose liability on Defendants for their direct emissions of greenhouse gases and do *not* seek to restrain Defendants from engaging in their business operations.

20. This case is fundamentally about shifting the costs of climate change-related harms back onto the companies whose deception caused and exacerbated them. Plaintiffs seek to ensure that the parties who have profited from deceiving consumers and the public about climate change bear the costs of that deceptive commercial activity.

II. JURISDICTION AND VENUE

21. Jurisdiction is proper in California Superior Court, San Francisco County, where this case was originally filed, because Defendants have contributed to the creation of a public nuisance in San Francisco, and the San Francisco City Attorney has the right and authority to seek abatement of that nuisance on behalf of the People of the State of California. Injuries the City has suffered personally have also occurred within San Francisco County.

22. This Court has personal jurisdiction over Defendants, pursuant to Code of Civil Procedure section 410.10, because each Defendant purposefully availed itself of the California market, and thus of the benefits of the laws of the State, during all times relevant to this Complaint, so as to render California courts' exercise of jurisdiction over each Defendant consistent with traditional notions of fair play and substantial justice. Each Defendant researched, developed, manufactured, designed, marketed, distributed, released, promoted, and/or otherwise sold its fossil fuel products in markets around the United States, including within California.

23. Additionally, jurisdiction is proper over each non-resident Defendant for the following reasons:

i. With respect to its subsidiaries, each non-resident Defendant controls and has controlled its direct and indirect subsidiaries' decisions about the quantity and extent of its fossil fuel production and sales; determines whether and to what extent to market, produce, and/or distribute its fossil fuel products; and controls and has controlled its direct and indirect subsidiaries' decisions related to its marketing and advertising, specifically communications strategies concerning climate change and the link between fossil fuel use and impacts on the environment. Each subsidiary Defendant is the agent of its parent Defendant. As agents, the subsidiaries of each non-resident

Defendant conducted activities in California at the direction and for the benefit of its parent company. Specifically, the subsidiaries furthered each parent company's campaign of deception and denial through misrepresentations, omissions, and affirmative promotion of the company's fossil fuel products as safe with knowledge of the climate change-related harms that would result from the intended use of those products, all of which resulted in climate change-related injuries in San Francisco and increased sales to the parent company. The subsidiaries' jurisdictional activities are properly attributed to each parent company and serve as a basis to assert jurisdiction over each of the non-resident Defendant parent companies.

ii. Through their various agreements with dealers, franchises, or otherwise, Defendants direct and control the branding, marketing, sales, promotions, image development, signage, and advertising of their branded fossil fuel products at their respectively branded gas stations in California, including point-of-sale advertising and marketing. Defendants dictate which grades and formulations of their gasoline may be sold at their respectively branded stations.

iii. Defendants, in coordination with trade organizations, conspired to conceal and misrepresent the known dangers of burning fossil fuels, to knowingly withhold material information regarding the consequences of using fossil fuel products, to spread knowingly false and misleading information to the public regarding the weight of climate science research, and to promote consumer demand for their fossil fuel products which they knew were harmful. Through their own actions and through their membership and participation in climate denialist front groups, each Defendant was and is a member of that conspiracy. Defendants committed substantial acts to further the conspiracy in California by making misrepresentations and misleading omissions to California consumers about the existence, causes, and effects of global warming; by affirmatively promoting Defendants' fossil fuel products as safe, with knowledge of the disastrous impacts that would result from the intended use of those products; and by failing to warn California consumers about the disastrous impacts of fossil fuel use. A substantial effect of the conspiracy has also and will also occur in San Francisco, as Plaintiffs have suffered and will suffer injuries from Defendants' wrongful conduct, including but not limited to the following: sea level rise, massive storms, flooding, extreme heat, reduced air quality, and other social and economic consequences of these environmental changes. Defendants

knew or should have known based on information provided to them from their internal research divisions, affiliates, trade associations, and industry groups that their actions in California and elsewhere would result in these injuries in and to San Francisco. Finally, the climate effects described herein are direct and foreseeable results of Defendants' conduct in furtherance of the conspiracy.

24. Venue is proper in this Court pursuant to Code of Civil Procedure sections 395 and 395.5 because the injury giving rise to the claims alleged in this Complaint occurred in San Francisco County.

25. Additionally, venue is also proper in San Francisco County pursuant to the February 9, 2024 order from the Judicial Council of California. This and other actions are coordinated into JCCP 5310, Fuel Industry Climate Cases, in San Francisco County.

III. PARTIES

A. Plaintiffs

26. Plaintiff the People of the State of California, by and through the San Francisco City Attorney David Chiu, brings this suit pursuant to Code of Civil Procedure section 731, and Civil Code sections 3479, 3480, 3491, and 3494, to abate the public nuisance caused by Defendants within San Francisco.

27. Plaintiff City and County of San Francisco is a municipal corporation organized and existing under and by virtue of the laws of the State of California and is a city and county. San Francisco owns and manages property and structures that are threatened by climate change-related harms, including sea level rise, more frequent and extreme precipitation and heat events, and poor air quality. The City brings causes of action in its own name as the real party in interest for injuries it has suffered personally, pursuant to Code of Civil Procedure section 367 and Government Code section 23004(a).

B. Defendants

28. Defendants include some of the largest oil and gas companies in the world. When this complaint references an act or omission of Defendants, unless otherwise stated, such references should be interpreted to mean that the officers, directors, agents, employees, or representatives of Defendants committed or authorized such an act or omission, or failed to adequately supervise or

properly control or direct their employees while engaged in the management, direction, operation or control of the affairs of Defendants, and did so while acting within the scope of their employment or agency.

29. **BP entities: BP P.L.C. and BP America Inc.**

i. Defendant **BP P.L.C.** is a multinational, vertically integrated energy and petrochemical public limited company, registered in England and Wales with its principal place of business in London, England. BP P.L.C. consists of three main operating segments: (1) exploration and production, (2) refining and marketing, and (3) "gas and low-carbon energy." BP P.L.C. is the ultimate parent company of numerous subsidiaries, referred to collectively as the "BP Group," which explore for and extract oil and gas worldwide; refine oil into fossil fuel products such as gasoline; and market and sell oil, gasoline, other refined petroleum products, and natural gas worldwide. BP P.L.C.'s subsidiaries explore for oil and natural gas under a wide range of licensing, joint arrangement, and other contractual agreements.

ii. BP P.L.C. controls and has controlled group-wide decisions about the quantity and rate of fossil fuel production and sales, including those of its subsidiaries. BP P.L.C. is the ultimate decisionmaker on fundamental decisions about the BP Group's core business, i.e., the volume of group-wide fossil fuels to produce and market, including among BP P.L.C.'s subsidiaries. For instance, BP P.L.C. reported that, in 2016–17, it brought online thirteen major exploration and production projects. These contributed to a 12% increase in the BP Group's overall fossil fuel product production. These projects were carried out by BP P.L.C.'s subsidiaries. Based on these projects, BP P.L.C. expected the BP Group to deliver to customers 900,000 barrels of new product per day by 2021. BP P.L.C. further reported that in 2017 it sanctioned three new exploration projects in Trinidad, India, and the Gulf of Mexico.

iii. BP P.L.C. controls and has controlled group-wide decisions, including those of its subsidiaries, related to marketing, advertising, climate change, and greenhouse gas emissions from its fossil fuel products, as well as communications strategies concerning climate change and the link between fossil fuel use and climate change-related impacts on the environment and humans. BP P.L.C. makes decisions on production and use of fossil fuel reserves for the entire BP Group

based on factors including climate change. BP P.L.C.'s Board of Directors is the company's highest decision-making body, with direct responsibility for the BP Group's policies concerning climate change policies. BP P.L.C.'s chief executive is responsible for maintaining the BP Group's system of internal control that governs the BP Group's business conduct. BP P.L.C.'s senior leadership directly oversees a carbon steering group, which manages climate change-related matters and consists of two committees—both overseen directly by the board—focused on climate change-related investments.

iv. Defendant **BP America Inc.** is a wholly owned subsidiary of BP P.L.C. that acts on BP P.L.C.'s behalf and is subject to BP P.L.C.'s control. BP America Inc. is a vertically integrated energy and petrochemical company incorporated in the state of Delaware with its headquarters and principal place of business in Houston, Texas. BP America Inc. is registered to do business in California. BP America Inc. consists of numerous divisions and affiliates in all aspects of the fossil fuel industry, including exploration for and production of crude oil and natural gas; manufacture of petroleum products; and transportation, marketing, and sale of crude oil, natural gas, and petroleum products. BP America Inc. was formerly known as, did or does business as, is or was affiliated with, and/or is the successor in liability to Amoco Oil Company; Amoco Production Company; ARCO Products Company; BP Exploration & Oil, Inc.; BP Products North America Inc.; BP Amoco Corporation; BP Oil, Inc.; BP Oil Company; Sohio Oil Company; Standard Oil of Ohio (SOHIO); Standard Oil (Indiana); and Atlantic Richfield Company (a Pennsylvania Corporation) and its division, the Arco Chemical Company.

v. Defendants BP P.L.C. and BP America, Inc., together with their predecessors, successors, parents, subsidiaries, affiliates, and divisions, are collectively referred to herein as "BP."

vi. Plaintiffs' claims against BP arise out of and are related to the acts and omissions of BP in California and elsewhere that caused or will cause injuries in California, including in San Francisco.

vii. BP has purposefully directed its tortious conduct toward California by distributing, marketing, advertising, promoting, and supplying its fossil fuel products in California, with knowledge that the intended use of those products for combustion have caused and will continue

to cause climate change-related harms in San Francisco, including Plaintiffs' injuries. BP's statements in San Francisco, in California, and elsewhere made in furtherance of its campaign of deception about and denial of climate change, and BP's affirmative promotion of its fossil fuel products as safe with knowledge of how the intended use of those products would cause climate change-related harms, were designed to conceal and mislead consumers and the public, including Plaintiffs, about the serious adverse consequences that would result from continued use of BP's products. That conduct was purposefully directed to reach San Francisco and obscure the dangers of BP's fossil fuel products from San Francisco and its residents such that use of BP's fossil fuel products in San Francisco would not decline.

viii. Over the last several decades and continuing to the present day, BP—especially BP p.l.c.—spent millions of dollars on radio, television, online, social media, and outdoor advertisements in the California market related to its fossil fuel products. Since at least 1988 and continuing to the present day, BP has advertised in print publications circulated widely to California consumers, including but not limited to the following: *The San Francisco Chronicle*, *The Atlantic*, *Life*, *Newsweek*, *The New York Times*, *Sports Illustrated*, *Time*, *The Wall Street Journal*, and *The Washington Post*. As further detailed herein, these include advertisements containing false or misleading statements, misrepresentations, and/or material omissions obfuscating the connection between the production and use of BP's fossil fuel products and climate change, and/or misrepresenting BP's products or BP itself as environmentally friendly.

ix. Significant quantities of BP's fossil fuel products are or have been transported, traded, distributed, promoted, marketed, manufactured, sold, and/or consumed in California, including in San Francisco, from which activities BP derives and has derived substantial revenue. BP conducts and controls, either directly or through franchise agreements, retail fossil fuel sales at gas station locations throughout San Francisco and California, at which locations it promotes, advertises, and sells its fossil fuel products under its ARCO brand name. Among other operations, BP operates more than 300 ARCO-licensed and branded gas stations in California. From 2000 to 2013, BP also owned and operated an oil refinery in Carson, California. During the period relevant to this Complaint, BP sold a substantial percentage of all retail gasoline sold in California. BP's

marketing and trading business maintains an office in Irvine, California. BP maintains an energy research center in San Diego, California.

x. BP also markets and sells other fossil fuel products, including engine lubricant and motor oils, to San Francisco and California consumers under its Castrol brand name.

xi. BP historically directed its fossil fuel product advertising, marketing, and promotional campaigns to San Francisco and California, including through maps that identified the locations of its service stations in California, including in San Francisco. BP markets and advertises its fossil fuel products in California to California residents by maintaining an interactive website available to prospective customers by which it directs San Francisco's residents to BP's nearby retail service stations and/or lubricant distributors.

xii. By BP's own description, its "retail stations in California serve more than 640,000 customers every day."[17] BP claims to support 3,000 jobs in California, including at least 1,400 BP employees, and has invested over $100 million through vendors in California.

30. **Chevron entities: Chevron Corporation and Chevron U.S.A. Inc.**

i. Defendant **Chevron Corporation** is a multinational, vertically integrated energy and chemicals company incorporated in Delaware, with its global headquarters and principal place of business in San Ramon, California. Chevron Corporation, through its predecessor Standard Oil Company of California, has been registered to do business in California since 1926. Chevron Corporation was formerly known as, did or does business as, and/or is the successor in liability to Standard Oil Company of California (also known as "Socal"), Texaco Inc., and ChevronTexaco Corporation.

ii. Chevron Corporation operates through a web of United States and international subsidiaries at all levels of the fossil fuel supply chain. Chevron Corporation 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

[17] BP, *Bp in California*, https://www.bp.com/content/dam/bp/country-sites/en_us/united-states/home/documents/where-we-operate/states/bp%20in%20California.pdf.

products and marketing those products; and manufacturing and marketing commodity petrochemicals, plastics for industrial uses, and fuel and lubricant additives.

iii. Chevron Corporation controls and has controlled group-wide decisions about the quantity and rate of fossil fuel production and sales, including those of its subsidiaries. Chevron Corporation determines whether and to what extent its corporate holdings market, produce, and/or distribute fossil fuel products.

iv. Chevron Corporation controls and has controlled group-wide decisions, including those of its subsidiaries, related to marketing, advertising, greenhouse gas emissions and climate change resulting from the company's fossil fuel products, and communications strategies concerning climate change and the link between fossil fuel use and climate change-related impacts on the environment and humans. Overall accountability for climate change within Chevron Corporation lies with Chevron Corporation's Board of Directors and Executive Committee.

v. Defendant **Chevron U.S.A. Inc.** is a wholly owned subsidiary of Chevron Corporation that acts on Chevron Corporation's behalf and is subject to Chevron Corporation's control. Chevron U.S.A. Inc. is a Pennsylvania corporation, with its principal place of business in San Ramon, California. Through its predecessors, Chevron U.S.A. Inc. has been registered to do business in California since 1965. Chevron U.S.A. Inc. was formerly known as, did or does business as, and/or is the successor in liability to Gulf Oil Corporation, Gulf Oil Corporation of Pennsylvania, Chevron Products Company, Chevron Chemical Company, and Chevron Chemical Company LLC.

vi. Defendants Chevron Corporation and Chevron U.S.A. Inc., together with their predecessors, successors, parents, subsidiaries, affiliates, and divisions, are collectively referred to herein as "Chevron."

vii. Plaintiffs' claims against Chevron arise out of and are related to the acts and omissions of Chevron in California and elsewhere that caused and will cause injuries in California, including in San Francisco.

viii. Chevron has purposefully directed its tortious conduct toward California by distributing, marketing, advertising, promoting, and supplying its fossil fuel products in California, with knowledge that the intended use of those products for combustion has caused and will continue

to cause climate change-related harms in San Francisco, including Plaintiffs' injuries. Chevron's statements in San Francisco, in California, and elsewhere made in furtherance of its campaign of deception about and denial of climate change, and Chevron's affirmative promotion of its fossil fuel products as safe with knowledge of how the intended use of those products would cause climate change-related harms, were designed to conceal and mislead consumers and the public, including the City and its residents, about the serious adverse consequences that would result from continued use of Chevron's products. That conduct was purposefully directed to reach San Francisco and obscure the dangers of Chevron's fossil fuel products from San Francisco and its residents such that use of Chevron's fossil fuel products in San Francisco would not decline.

ix. Over the last several decades and continuing to the present day, Chevron spent millions of dollars on radio, television, online, social media, and outdoor advertisements in the California market related to its fossil fuel products. Since at least 1970, and continuing to the present day, Chevron has advertised in print publications circulated widely to California consumers, including but not limited to the following: *The San Francisco Chronicle*, *The Atlantic*, *Life*, *National Geographic*, *The New York Times*, *Sports Illustrated*, *Time Magazine*, *The Wall Street Journal*, and *The Washington Post*. As further detailed herein, these include advertisements containing false or misleading statements, misrepresentations, and/or material omissions obfuscating the connection between the production and use of Chevron's fossil fuel products and climate change, and/or misrepresenting Chevron's products or Chevron itself as environmentally friendly.

x. Significant quantities of Chevron's fossil fuel products are or have been transported, traded, distributed, promoted, marketed, manufactured, sold, and/or consumed in California, from which activities Chevron derives and has derived substantial revenue. Chevron conducts and controls, either directly or through franchise agreements, retail fossil fuel sales at gas station locations throughout San Francisco and California, at which locations it promotes, advertises, and sells its fossil fuel products under its various brand names, including Chevron, Texaco, and other brand names. Chevron operates over 1,500 Chevron-branded petroleum service stations in California. Chevron has owned and operated an oil refinery in Richmond, California, since 1902, and has owned and operated an oil refinery in El Segundo, California, since 1911. During the period

relevant to this Complaint, Chevron sold a substantial percentage of all retail gasoline sold in California.

xi. Chevron historically directed its fossil fuel product advertising, marketing, and promotional campaigns to California, including through maps that identified the locations of its service stations in California, including in San Francisco. Chevron markets and advertises its fossil fuel products in California to California residents by maintaining an interactive website available to prospective customers by which it directs California residents to Chevron's nearby retail service stations and/or lubricant distributors. Chevron markets and sells engine lubricants and motor oils to California customers under its Delo, IsoClean, Techron, and Havoline brand names at retail outlets.

xii. Chevron offers a proprietary credit card known as the "Chevron Techron Advantage Credit Card," which allows consumers in San Francisco and California to pay for gasoline and other products at Chevron-branded service stations, and which encouraged San Francisco and California consumers to use Chevron-branded service stations by offering various rewards, including discounts on gasoline purchases at Chevron service stations and cash rebates. Chevron further maintains two smartphone applications known as the "Chevron App" and the "Texaco App," both part of the "Chevron Texaco Rewards" program. The program offers San Francisco and California consumers a cashless payment method for gasoline and other products at Chevron- and Texaco-branded service stations. San Francisco and California consumers utilize the payment method by providing their credit card information through the application. San Francisco and California consumers can also receive rewards, including discounts on gasoline purchases, by registering their personal identifying information in the apps and by using the applications to identify and activate gas pumps at Chevron and Texaco service stations during a purchase.

31. **ConocoPhillips entities: ConocoPhillips, ConocoPhillips Company, Phillips 66, and Phillips 66 Company**

i. Defendant **ConocoPhillips** is a multinational energy company incorporated in Delaware, with its principal place of business in Houston, Texas. ConocoPhillips consists of numerous divisions, subsidiaries, and affiliates that execute ConocoPhillips' fundamental decisions

related to all aspects of fossil fuel production, including exploration, extraction, production, manufacture, transport, and marketing.

ii. ConocoPhillips controls and has controlled group-wide decisions about the quantity and rate of fossil fuel production and sales, including those of its subsidiaries. ConocoPhillips determines whether and to what extent its corporate holdings market, produce, and/or distribute fossil fuel products. ConocoPhillips' most recent annual report to the Securities and Exchange Commission ("SEC") subsumes the operations of ConocoPhillips' subsidiaries under its name. In ConocoPhillips' Form 10-K filed with the SEC for Fiscal Year 2022, the company represents that its value—for which ConocoPhillips maintains ultimate responsibility—is a function of its decisions to direct subsidiaries to develop crude oil, bitumen, natural gas, and natural gas liquids from ConocoPhillips' reserves into fossil fuel products and to explore for and replace those reserves with more fossil fuels: "Unless we successfully develop resources, the scope of our business will decline, resulting in an adverse impact to our business. . . . If we are not successful in replacing the resources we produce with good prospects for future organic development or through acquisitions, our business will decline."

iii. ConocoPhillips optimizes the ConocoPhillips group's oil and gas portfolio to fit ConocoPhillips' strategic plan. For example, ConocoPhillips' 10-K in 2022 summarizes the "continued development of onshore assets" in the United States and new exploration activities in Alaska, Canada, the North Sea, and elsewhere. Similarly, in November 2016, ConocoPhillips announced a plan to generate $5 billion to $8 billion of proceeds over two years by optimizing its business portfolio, including its fossil fuel product business, to focus on low cost-of-supply fossil fuel production projects that strategically fit its development plans.

iv. ConocoPhillips controls and has controlled group-wide decisions, including those of its subsidiaries, related to marketing, advertising, climate change and greenhouse gas emissions from its fossil fuel products, and communications strategies concerning climate change and the link between fossil fuel use and climate change-related impacts on the environment and communities. For instance, ConocoPhillips' board has the highest level of direct responsibility for climate change policy within the company. ConocoPhillips has developed and purportedly

implements a corporate Climate Change Action Plan to govern climate change decision-making across all entities in the ConocoPhillips group.

v. Defendant **ConocoPhillips Company** is a wholly owned subsidiary of ConocoPhillips that acts on ConocoPhillips' behalf and is subject to ConocoPhillips' control. ConocoPhillips Company is incorporated in Delaware, with its principal place of business in Houston, Texas, and has been registered to do business in California since 1947. ConocoPhillips Company was formerly known as, did or does business as, and/or is the successor in liability to Phillips Petroleum Company.

vi. Defendant **Phillips 66** is a multinational energy and petrochemical company incorporated in Delaware, with its principal place of business in Houston, Texas. It encompasses downstream fossil fuel processing, refining, transport, and marketing segments that were formerly owned and/or controlled by ConocoPhillips.

vii. Defendant **Phillips 66 Company** is a wholly owned subsidiary of Phillips 66 that acts on Phillips 66's behalf and is subject to Phillips 66's control. Phillips 66 Company is incorporated in Delaware, with its principal place of business in Houston, Texas, and has been registered to do business in California since 2011. Phillips 66 Company had been registered since 1964 under a different name, Phillips Chemical Company, which was a wholly owned subsidiary of the Phillips Petroleum Company. Phillips Chemical Company changed its name to Phillips 66 Company in 1985, and that iteration of Phillips 66 Company was terminated in 1991. Phillips 66 Company was formerly known as, did or does business as, and/or is the successor in liability to Phillips Petroleum Company; Phillips Chemical Company; Conoco, Inc.; Tosco Corporation; and Tosco Refining Co.

viii. Defendants ConocoPhillips, ConocoPhillips Company, Phillips 66, and Phillips 66 Company, as well as their predecessors, successors, parents, subsidiaries, affiliates, and divisions, are collectively referred to herein as "ConocoPhillips."

ix. Plaintiffs' claims against ConocoPhillips arise out of and are related to the acts and omissions of ConocoPhillips in California and elsewhere that caused and will cause injuries in California, including in San Francisco.

x. ConocoPhillips has purposefully directed its tortious conduct toward California by distributing, marketing, advertising, promoting, and supplying its fossil fuel products in California, with knowledge that the intended use of those products for combustion has caused and will continue to cause climate change-related harms in San Francisco, including Plaintiffs' injuries. ConocoPhillips' statements in San Francisco, in California, and elsewhere made in furtherance of its campaign of deception about and denial of climate change, and ConocoPhillips' affirmative promotion of its fossil fuel products as safe with knowledge of how the intended use of those products would cause climate change-related harms, were designed to conceal and mislead consumers and the public, including the City and its residents, about the serious adverse consequences that would result from continued use of ConocoPhillips' products. That conduct was purposefully directed to reach San Francisco and obscure the dangers of ConocoPhillips' fossil fuel products from San Francisco and its residents such that use of ConocoPhillips' fossil fuel products in San Francisco would not decline.

xi. Over the last several decades and continuing to the present day, ConocoPhillips spent millions of dollars on radio, television, online, social media, and outdoor advertisements in the California market related to its fossil fuel products. Since at least 1970, and continuing to the present day, ConocoPhillips has advertised in print publications circulated widely to California consumers, including but not limited to the following: *The San Francisco Chronicle*, *The Atlantic*, *Life*, *National Geographic*, *Newsweek*, *The New York Times*, *People*, *Sports Illustrated*, *Time Magazine*, *The Wall Street Journal*, and *The Washington Post*. As further detailed herein, these include advertisements containing false or misleading statements, misrepresentations, and/or material omissions obfuscating the connection between the production and use of ConocoPhillips' fossil fuel products and climate change, and/or misrepresenting ConocoPhillips' products or ConocoPhillips itself as environmentally friendly.

xii. Significant quantities of ConocoPhillips' fossil fuel products are or have been transported, traded, distributed, promoted, marketed, manufactured, sold, and/or consumed in California, from which activities ConocoPhillips derives and has derived substantial revenue.

xiii. ConocoPhillips conducts and controls, either directly or through franchise agreements, retail fossil fuel sales at gas station locations throughout San Francisco and California, at which locations it promotes, advertises, and sells its fossil fuel products under its various brand names, including Conoco, Phillips 66, and 76. ConocoPhillips also markets and sells to California customers at retail outlets engine lubricants and motor oils under its Phillips 66, Kendall, and Red Line brand names. ConocoPhillips operates hundreds of 76-branded petroleum service stations throughout California, including in San Francisco. During the period relevant to this Complaint, ConocoPhillips sold a substantial percentage of all retail gasoline sold in California.

xiv. ConocoPhillips does substantial fossil fuel product-related business in California, and a substantial quantity of its fossil fuel products are extracted, refined, transported, traded, distributed, marketed, and/or sold in California. For instance, ConocoPhillips owns and/or operates oil and natural gas terminals in Richmond and Los Angeles, California; owns and operates oil refineries in Arroyo Grande, Colton, and Wilmington, California; and distributes ConocoPhillips fossil fuel products throughout California, including San Francisco. Phillips 66 also owns and operates oil refineries in Rodeo, Santa Maria, and Los Angeles, California. All of these refineries were owned and operated by ConocoPhillips and its predecessors-in-interest from 1997 to 2012.

xv. ConocoPhillips has historically directed its fossil fuel product advertising, marketing, and promotional campaigns to California, including through maps identifying its services throughout California. ConocoPhillips markets and advertises its fossil fuel products in California to California residents by maintaining an interactive website available to prospective customers by which it directs San Francisco and California residents to ConocoPhillips' nearby retail service stations. ConocoPhillips offers a proprietary credit card known as the "76 Credit Card," which allows consumers in San Francisco and California to pay for gasoline and other products at 76-branded service stations, and which encourages San Francisco and California consumers to use 76-branded service stations by offering various rewards, including discounts on gasoline purchases at 76-branded service stations and cash rebates. ConocoPhillips further maintains a nationwide smartphone application known as the "Fuel Forward App." The application offers San Francisco and California consumers a cashless payment method for gasoline and other products at 76-branded service stations.

San Francisco and California consumers utilize the payment method by providing their credit card information through the application. San Francisco and California consumers can also apply for a 76 Credit Card through the application. By registering their personal identifying information in the application and by using the application to identify and activate gas pumps at 76-branded service stations, San Francisco and California consumers can receive additional rewards, such as further discounts on ConocoPhillips gasoline purchases.

32. **Exxon entities: Exxon Mobil Corporation and ExxonMobil Oil Corporation**

i. Defendant **Exxon Mobil Corporation** is a New Jersey corporation headquartered in Spring, Texas, and has been registered to do business in California since 1972. Exxon Mobil Corporation is a multinational, vertically integrated energy and chemical company and one of the largest publicly traded international oil and gas companies in the world. Exxon Mobil Corporation was formerly known as, did or does business as, and/or is the successor in liability to Exxon Corporation; ExxonMobil Refining and Supply Company; Exxon Chemical U.S.A.; ExxonMobil Chemical Corporation; ExxonMobil Chemical U.S.A.; ExxonMobil Refining & Supply Corporation; Exxon Company, U.S.A.; Standard Oil Company of New Jersey; and Mobil Corporation.

ii. Defendant **ExxonMobil Oil Corporation** is a wholly owned subsidiary of Exxon Mobil Corporation, acts on Exxon Mobil Corporation's behalf, and is subject to Exxon Mobil Corporation's control. ExxonMobil Oil Corporation is a New York corporation headquartered in Spring, Texas, and has been registered to do business in California since 1959. ExxonMobil Oil Corporation was formerly known as, did or does business as, and/or is the successor in liability to Mobil Oil Corporation. ExxonMobil Oil Corporation is engaged in the business of oil and natural gas production, refining, marketing, and distribution.

iii. Exxon Mobil Corporation controls and has controlled group-wide decisions about the quantity and rate of fossil fuel production and sales, including those of its subsidiaries. Exxon Mobil Corporation's 2022 Form 10-K filed with the SEC represents that its success, including its "ability to mitigate risk and provide attractive returns to shareholders, depends on [its] ability to successfully manage [its] overall portfolio, including diversification among types and locations of

[its] projects, products produced, and strategies to divest assets." Exxon Mobil Corporation determines whether and to what extent its subsidiaries market, produce, and/or distribute fossil fuel products. For example, on October 11, 2023, Exxon Mobil Corporation announced its acquisition of Pioneer Natural Resources in a press release that referred to the corporate family generally as "ExxonMobil."

iv. Exxon Mobil Corporation controls and has controlled group-wide decisions, including those of its subsidiaries, related to marketing, advertising, greenhouse gas emissions and climate change resulting from the company's fossil fuel products, and communications strategies concerning climate change and the link between fossil fuel use and climate change-related impacts on the environment and humans. Exxon Mobil Corporation's Board holds the highest level of direct responsibility for climate change policy. Exxon Mobil Corporation's Chairman of the Board and Chief Executive Officer, its President, and the other members of its Management Committee have been actively engaged in discussions relating to greenhouse gas emissions and the risks of climate change on an ongoing basis. Exxon Mobil Corporation requires its subsidiaries, when seeking funding for capital investments, to provide estimates of project costs related to greenhouse gas emissions.

v. Defendants Exxon Mobil Corporation, ExxonMobil Oil Corporation, and their predecessors, successors, parents, subsidiaries, affiliates, and divisions, are collectively referred to herein as "Exxon."

vi. Plaintiffs' claims against Exxon arise out of and are related to the acts and omissions of Exxon in California and elsewhere that caused and will cause injuries in California, including in San Francisco.

vii. Exxon consists of numerous divisions and affiliates in all areas of the fossil fuel industry, including exploration for and production of crude oil and natural gas; manufacture of petroleum products; and transportation, promotion, marketing, and sale of crude oil, natural gas, and petroleum products. Exxon is also a major manufacturer and marketer of commodity petrochemical products.

viii. Exxon has purposefully directed its tortious conduct toward California by distributing, marketing, advertising, promoting, and supplying its fossil fuel products in California, with knowledge that the intended use of those products for combustion has caused and will continue to cause climate change-related harms in San Francisco, including Plaintiffs' injuries. Exxon's statements in San Francisco, in California and elsewhere, made in furtherance of its campaign of deception about and denial of climate change, and Exxon's affirmative promotion of its fossil fuel products as safe with knowledge of how the intended use of those products would cause climate change-related harms, were designed to conceal and mislead consumers and the public, including the City and its residents, about the serious adverse consequences that would result from continued use of Exxon's products. That conduct was purposefully directed to reach San Francisco and obscure the dangers of Exxon's fossil fuel products from San Francisco and its residents such that use of Exxon's fossil fuel products in San Francisco would not decline.

ix. Over the past several decades and continuing to the present day, Exxon spent millions of dollars on radio, television, online, social media, and outdoor advertisements in the California market related to its fossil fuel products. Since at least 1972, and continuing to the present day, Exxon has advertised its fossil fuel products in print publications circulated widely to California consumers, including but not limited to: *The San Francisco Chronicle*, *The Atlantic*, *Life*, *National Geographic*, *The New York Times*, *People*, *Sports Illustrated*, *Time*, *The Wall Street Journa*l, and *The Washington Post*. As further detailed herein, these include advertisements containing false or misleading statements, misrepresentations, and/or material omissions designed to hide the connection between the production and use of Exxon's fossil fuel products and climate change, and/or misrepresenting Exxon's products or Exxon itself as environmentally friendly.

x. Significant quantities of Exxon's fossil fuel products are or have been transported, traded, distributed, promoted, marketed, manufactured, sold, and/or consumed in San Francisco and in California, from which activities Exxon derives and has derived substantial revenue. Exxon owns and operates a petroleum storage and transport facility in the San Ardo Oil Field in San Ardo, California. Exxon and its predecessors owned and operated an oil refinery in Torrance, California from 1966 to 2016, shortly after an explosion disabled the refinery. Exxon Co. USA, an

ExxonMobil subsidiary, operated a petroleum refinery in Benicia, California, from 1968 to 2000. Exxon also—both directly and through its subsidiaries and/or predecessors-in-interest—has supplied substantial quantities of fossil fuel products to California, including in San Francisco, during the period relevant to this Complaint. Currently, Exxon promotes, markets, and sells gasoline and other fossil fuel products to California consumers through approximately 600 Exxon- and Mobil-branded petroleum service stations in California. During the period relevant to this Complaint, Exxon sold a substantial percentage of all retail gasoline in California. Exxon also markets and sells petroleum products, including engine lubricants and motor oils sold under the "Mobil 1" brand name, to California customers through local retailers.

xi. Exxon historically directed its fossil fuel product advertising, marketing, and promotional campaigns to San Francisco and California residents, including through maps that identify the locations of its service stations in California, including in San Francisco. To this day, Exxon continues to market and advertise its fossil fuel products in California to California residents by maintaining an interactive website available to prospective customers that directs San Francisco and California residents to Exxon's nearby retail service stations and lubricant distributors. Further, Exxon promotes its products in San Francisco and California by regularly updating and actively promoting its mobile device application, "Exxon Mobil Rewards+," throughout San Francisco and California, which encourages San Francisco and California users to consume fuel at Exxon stations in San Francisco and California in exchange for rewards on every fuel purchase.

33. **Shell entities: Shell plc, Shell USA, Inc., and Shell Oil Products Company LLC**

i. Defendant **Shell plc** (formerly Royal Dutch Shell PLC) is a vertically integrated multinational energy and petrochemical company. Shell plc is incorporated in England and Wales, with its headquarters and principal place of business in The Hague, Netherlands. Shell plc is the ultimate parent company of numerous divisions, subsidiaries, and affiliates, referred to collectively as the "Shell Group," that engage in all aspects of fossil fuel production, including exploration, development, extraction, manufacturing and energy production, transport, trading, marketing, and sales.

ii. Shell plc controls and has controlled group-wide decisions about the quantity and extent of fossil fuel production and sales, including those of its subsidiaries. Shell plc's Board of Directors determines whether and to what extent Shell subsidiary holdings around the globe produce Shell-branded fossil fuel products.

iii. Shell plc controls and has controlled group-wide decisions, including those of its subsidiaries, related to marketing, advertising, greenhouse gas emissions and climate change resulting from the company's fossil fuel products, and communications strategies concerning climate change and the link between fossil fuel use and climate change-related impacts on the environment and humans. Overall accountability for climate change within the Shell Group lies with Shell plc's Chief Executive Officer and Executive Committee. For instance, at least as early as 1988, Shell plc, through its predecessors and subsidiaries, was researching company-wide CO_2 emissions and concluded that the Shell Group accounted for 4% of the CO_2 emitted worldwide from combustion, and that climatic changes could compel the Shell Group, as controlled by Shell plc, to examine the possibilities of expanding and contracting its business accordingly.

iv. Defendant **Shell USA, Inc.** (formerly Shell Oil Company) is a wholly owned subsidiary of Shell plc that acts on Shell plc's behalf and is subject to Shell plc's control. Shell USA, Inc. is incorporated in Delaware, with its principal place of business in Houston, Texas. Shell USA, Inc. has been registered to do business in California since 1949. Shell USA, Inc. was formerly known as, did or does business as, and/or is the successor in liability to Shell Oil Company; Shell Oil; Deer Park Refining LP; Shell Oil Products US; Shell Chemical LP; Shell Trading (US) Company; Shell Energy Resources Company; Shell Energy Services Company, L.L.C.; The Pennzoil Company; and Pennzoil-Quaker State Company.

v. Defendant **Shell Oil Products Company LLC** is a wholly owned subsidiary of Shell USA, Inc., that acts on Shell USA, Inc.'s behalf and is subject to Shell USA, Inc.'s control. Shell Oil Products Company LLC is incorporated in Delaware, with its principal place of business in Houston, Texas, and has been registered to do business in California since 2001. Shell Oil Products Company LLC was formerly known as, did or does business as, and/or is the successor in liability to

Shell Oil Products Company, which was a Delaware corporation that converted to a limited liability company in 2001.

vi. Defendants Shell plc, Shell USA, Inc., Shell Oil Products Company LLC, and their predecessors, successors, parents, subsidiaries, affiliates, and divisions are collectively referred to herein as "Shell."

vii. Plaintiffs' claims against Shell arise out of and are related to the acts and omissions of Shell in California and elsewhere that caused and will cause injuries in California, including in San Francisco.

viii. Shell has purposefully directed its tortious conduct toward California by distributing, marketing, advertising, promoting, and supplying its fossil fuel products in California, with knowledge that the intended use of those products for combustion has caused and will continue to cause climate change-related harms in San Francisco, including Plaintiffs' injuries. Shell's statements in San Francisco, in California, and elsewhere made in furtherance of its campaign of deception about and denial of climate change, and Shell's affirmative promotion of its fossil fuel products as safe with knowledge of how the intended use of those products would cause climate change-related harms, were designed to conceal these harms and mislead consumers and the public, including the City and its residents, about the serious adverse consequences that would result from continued use of Shell's products. That conduct was purposefully directed to reach San Francisco and obscure the dangers of Shell's fossil fuel products from San Francisco and its residents such that use of Shell's fossil fuel products in San Francisco would not decline.

ix. Over the last several decades and continuing to the present day, Shell spent millions of dollars on radio, television, online, social media, and outdoor advertisements in the California market related to its fossil fuel products. Since at least 1970, and continuing to the present day, Shell has advertised its fossil fuel products in print publications circulated widely to California consumers, including but not limited to the following: *The San Francisco Chronicle*, *The Atlantic*, *The Economist*, *Life*, *National Geographic*, *Newsweek*, *The New York Times*, *Sports Illustrated*, *Time Magazine*, *The Wall Street Journal*, and *The Washington Post*. As further detailed herein, these include advertisements containing false or misleading statements, misrepresentations, and/or

material omissions obfuscating the connection between the production and use of Shell's fossil fuel products and climate change, and/or misrepresenting Shell's products or Shell itself as environmentally friendly.

x. Significant quantities of Shell's fossil fuel products are or have been transported, traded, distributed, promoted, marketed, manufactured, sold, and/or consumed in California, including in San Francisco, from which activities Shell derives and has derived substantial revenue. Shell conducts and controls, either directly or through franchise agreements, retail fossil fuel sales at gas station locations throughout California, including in San Francisco, at which locations it promotes, advertises, and sells its fossil fuel products under its Shell brand name. Shell operates over 1,000 Shell-branded petroleum service stations in California. During the period relevant to this Complaint, Shell sold a substantial percentage of all retail gasoline sold in California. Shell also supplies, markets, and promotes its Pennzoil line of lubricants at retail and service stations throughout California. From 1924 to 1992, Shell owned and operated an oil refinery in Carson, California, where it now owns and operates the property as a distribution facility for petroleum and petroleum products throughout Southern California. From 1915 to 2020, Shell owned and operated an oil refinery in Martinez, California. From 1998 to 2007, Shell owned and operated an oil refinery in Wilmington, California. From 1998 to 2005, Shell owned and operated an oil refinery in Bakersfield, California.

xi. Shell historically directed its fossil fuel product advertising, marketing, and promotional campaigns to San Francisco and California, including through maps that identified the locations of its service stations in California, including in San Francisco. Shell markets and advertises its fossil fuel products in California to California residents by maintaining an interactive website available to prospective customers by which it directs California residents to Shell's nearby retail service stations. Shell offers a proprietary credit card known as the "Shell Fuel Rewards Card," which allows consumers in San Francisco and in California to pay for gasoline and other products at Shell-branded service stations, and which encourages consumers to use Shell-branded gas stations by offering various rewards, including discounts on gasoline purchases. Shell further maintains a smartphone application known as the "Shell US App" that offers San Francisco and California

consumers a cashless payment method for gasoline and other products at Shell-branded service stations. San Francisco and California consumers utilize the payment method by providing their credit card information through the application. San Francisco and California consumers can also receive rewards, including discounts on gasoline purchases, by registering their personal identifying information in the Shell US App and using the application to identify and activate gas pumps at Shell service stations during a purchase.

C. Doe Defendants

34. The true names and capacities, whether individual, corporate, associate, or otherwise of Defendants Does 1 through 10, inclusive, are unknown to Plaintiffs, who therefore sue said Defendants by such fictitious names pursuant to Code of Civil Procedure section 474. Plaintiffs are informed and believe, and on that basis allege, that each of the fictitiously named Defendants is responsible in some manner for the acts and occurrences herein alleged, and that Plaintiffs' harms were caused by such Defendants.

IV. DEFENDANTS' AGENTS AND CO-CONSPIRATORS

35. As detailed below, each Defendant had actual knowledge, or should have known, that its fossil fuel products were hazardous in that the intended use of the fossil fuel products for combustion would substantially contribute to climate change and result in harms to Plaintiffs. Defendants obtained knowledge of the hazards of their products independently and through their membership and involvement in trade associations.

36. Defendants employed, financed, and participated in several industry-created front groups to serve their mission of flooding the markets with climate change disinformation and denialism. These organizations, acting on behalf of and under Defendants' supervision and control, assisted the deception campaign by implementing public advertising and outreach campaigns to discredit climate science, funding scientists to cast doubt upon climate science and upon the extent to which climate change is caused by human activity. In sum, Defendants, through their front groups, engaged in a significant marketing campaign that misrepresented and concealed the dangers of their fossil fuel products with the aim of protecting or enhancing sales of these products to consumers, including consumers in California. Defendants actively supervised, facilitated, consented to, and/or

directly participated in the misleading messaging of these front groups, from which Defendants profited significantly, including in the form of increased sales in California.

37. **The American Petroleum Institute ("API")**

i. API is a national trade association representing the oil and gas industry, created in 1919. With more than 600 members, API is the country's largest oil trade association. API's purpose is to advance its members' collective business interests, which includes increasing consumer consumption of oil and gas for the financial profit of Defendants and other oil and gas companies. Among other functions, API also coordinates members of the petroleum industry, gathers information of interest to the industry, and disseminates that information to its members. Acting on behalf of and under the supervision and control of Defendants, API has, since at least 1988, participated in and led several coalitions, front groups, and organizations that have promoted disinformation about the climate impacts of fossil fuel products to consumers—including, but not limited to, the Global Climate Coalition, Partnership for a Better Energy Future, Coalition for American Jobs, Alliance for Energy and Economic Growth, and Alliance for Climate Strategies. These front groups were formed to promote climate disinformation and advocacy from a purportedly objective source, when in fact these groups were financed and controlled by Defendants and other oil and gas companies. Defendants have benefited from the spread of this disinformation because, among other things, it has ensured a thriving consumer market for oil and gas, resulting in substantial profits for Defendants. In effect, API acts and has acted as a marketing arm for its member companies, including Defendants. Over the last several decades, API has spent millions of dollars on television, newspaper, radio, social media, and internet advertisements in the California market.

ii. Member companies participate in API strategy, governance, and operation through their membership dues and by contributing company officers and other personnel to API boards, committees, and task forces. Defendants have collectively steered the policies and trade practices of API through membership, Executive Committee roles, and/or providing budgetary funding for API. Defendants have used their control over and involvement in API to develop and execute a long-term advertising and communications campaign centered on climate change denialism. The goal of the campaign was to influence consumer demand for Defendants' fossil fuel

products. Defendants directly controlled, supervised, and participated in API's misleading messaging regarding climate change. That conduct directly impacted California, as Defendants worked with API to create and disseminate misleading advertisements that distinctly promote consumption of fossil fuel products throughout California.

iii. All Defendants and/or their predecessors-in-interest have been key API members at all times relevant to this Complaint. All Defendants are currently members of API. Executives from Exxon, Shell, Chevron, ConocoPhillips, and BP have served on the API Executive Committee and/or as API Chairman, serving as corporate officers. For example, Exxon's CEO served on API's Executive Committee, including as President and Chairman, for 21 of the 29 years between 1991 and 2020. Multiple high-level executives from Exxon, such as Presidents, Vice Presidents, CEOs, COOs, and Chairmans, served on API's Board in each year between 1994–2002. BP's CEO served as API's Chairman in 1988, 1989, and 1998. Multiple high-level executives from BP served on API's Board of Directors between 1994–2002. The Chairman and CEO of BP's predecessor ARCO served as API treasurer in 1998 and Chairman in 1999. Chevron's CEO served as API Chairman in 1994, 1995, 1997, 1998, 2003, and 2012. In 2002, Chevron's CEO served as API treasurer. Chairman and CEO of Chevron's predecessor Texaco served as API Board Chairman in 2001, and as treasurer in 1999. Multiple high-level executives from Chevron served on API's Board of Directors in each year between 1994–2002. Shell's President served as API treasurer in 1997 and sat on the Board's executive committee from at least 2005–2006. Multiple high-level Shell executives served on API's Board of Directors between 1994–2002. ConocoPhillips Chairman and CEO was API Chairman from 2016–2018, and currently serves on API's executive committee. In 2020, API elected Phillips 66 Chairman and CEO to serve a two-year term as its Board President, and Phillips 66's current President and CEO is on the API Board's executive committee. Multiple high-level ConocoPhillips executives served on API's Board of Directors between 1994–2002.

iv. Relevant information was shared among API and Defendants and Defendants' predecessors-in-interest through the following: (1) API's distribution of information to its members, and/or (2) participation of Defendants' officers and other personnel, and those of Defendants' predecessors-in-interest, on API boards, committees, and task forces. This includes representatives

of Exxon, Chevron, BP, Shell and ConocoPhillips sitting on both API's Committee for Air and Water Conservation and a special advisory group to API's Committee for Public Affairs, which worked together to develop research reports on air emissions and other environmental topics. Different representatives of Exxon, Chevron, BP, Shell and ConocoPhillips rotated in and out of these positions throughout the time periods discussed in this complaint. In addition, representatives from Chevron and Exxon chaired API's Engineering and Technical Research Committee, and representatives from BP and Exxon chaired API's Health and Biological Research Committee, also developing research documents. Different representatives of Exxon, Chevron, BP, Shell and ConocoPhillips rotated in and out of these positions throughout the time periods discussed in this complaint.[18]

38. **The Information Council for the Environment ("ICE")** was formed by coal companies and their allies, including Western Fuels Association and the National Coal Association. Associated companies included Pittsburg and Midway Coal Mining (Chevron).

39. **The Global Climate Coalition ("GCC")** was an industry group formed to preserve and expand consumer demand for fossil fuels by publicly casting doubt on climate science and opposing greenhouse gas emission reduction initiatives. The GCC was founded in 1989 in reaction to the first meeting of the Intergovernmental Panel on Climate Change ("IPCC"), the United Nations body for assessing the science related to climate change, and to NASA scientist James Hansen's presentation to the Senate Committee on Energy and Natural Resources, in which Hansen emphasized that climate change was already happening and would lead to dire consequences if left unaddressed. The GCC disbanded in or around 2001. Founding members included API, Shell Oil Company (currently, Shell); Texaco, Inc. (currently, Chevron); Amoco (currently, BP); ARCO (owned by BP at the time); and Phillips Petroleum Company (currently, ConocoPhillips). GCC board membership during its existence included high-level executives from the founding members and Chevron, Exxon, and Mobil (Exxon). Tom Lambrix, director of government relations for Phillips

[18] American Petroleum Institute, Comm. For Air and Water Conservation & Comm. On Public Affairs, *Environmental Research: A Status Report* (1972) (listing members of relevant committees and their fossil fuel company affiliations), https://files.eric.ed.gov/fulltext/ED066339.pdf.

Petroleum, was the first chairman of the GCC. Exxon was also a corporate member of the GCC over the course of the GCC's existence. The GCC Board of Directors was composed of high-level executives from the fossil fuel industry: in 1994, for instance, the GCC Board was composed of executives from API, Exxon, Phillips Petroleum Company (ConocoPhillips), and Texaco (Chevron).[19] In 1995, GCC's Board of Directors included high-level executives from Texaco (Chevron), American Petroleum Institute, ARCO, and Phillips Petroleum Company.[20]

V. FACTUAL BACKGROUND

A. Defendants Are Responsible for Causing and Accelerating Climate Change.

40. The atmosphere and oceans are warming, sea level is rising, snow and ice cover is diminishing, oceans are acidifying, and hydrogeologic systems have been altered, among other environmental changes.[21] These changes are directly harming people's health, lives, lifestyles, and livelihoods, including in San Francisco. According to the IPCC, the evidence that humans are causing this warming of the Earth is unequivocal.[22]

41. The mechanism by which human activity causes global warming and climate disruption is equally well-established: ocean and atmospheric warming is overwhelmingly caused by anthropogenic greenhouse gas emissions.[23] Over the past few decades, those emission rates have exceeded those predicted under previous "worst case" global emissions scenarios.

42. When used as intended to produce energy and create petrochemical products, fossil fuels release greenhouse gases, including CO_2 and methane, which trap atmospheric heat and increase global temperatures. Carbon dioxide is by far the most important greenhouse gas because

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[19] 1994 GCC Board Member List and Background Information, Climate Investigations Center, https://www.climatefiles.com/denial-groups/global-climate-coalition-collection/1994-board-member-list-general-info/.

[20] 1995 GCC IRS 1024 and Attachments, Climate Investigations Center (1995), https://www.documentcloud.org/documents/5798254-GCC-IRS-1023#document/p17.

[21] IPCC, *Global Carbon and Other Biogeochemical Cycles and Feedbacks*, in *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I in the Sixth Assessment Report* 688 (2021).

[22] *Climate Change 2021: The Physical Science Basis*, THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, at v, 4, 41, 63, 150, 425, 506 (2021), https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf.

[23] *Id.* at 41.

combustion of massive amounts of fossil fuels has released hundreds of billions of tons of CO_2 into the atmosphere.

43. Prior to World War II, most anthropogenic CO_2 emissions were caused by land-use practices, such as forestry and agriculture, which altered the capacity of the land and global biosphere to absorb and sequester CO_2 from the atmosphere. Those activities did not significantly alter atmospheric CO_2 concentrations, and their impacts on Earth's climate were relatively minor. Since that time, however, both the annual rate and total volume of anthropogenic CO_2 emissions have increased enormously following the dramatic rise of the combustion of oil, gas, and coal. Figure 1 below shows that while CO_2 emissions attributable to forestry and other land-use changes have remained relatively constant, total emissions attributable to fossil fuels have increased dramatically since the 1950s.[24]

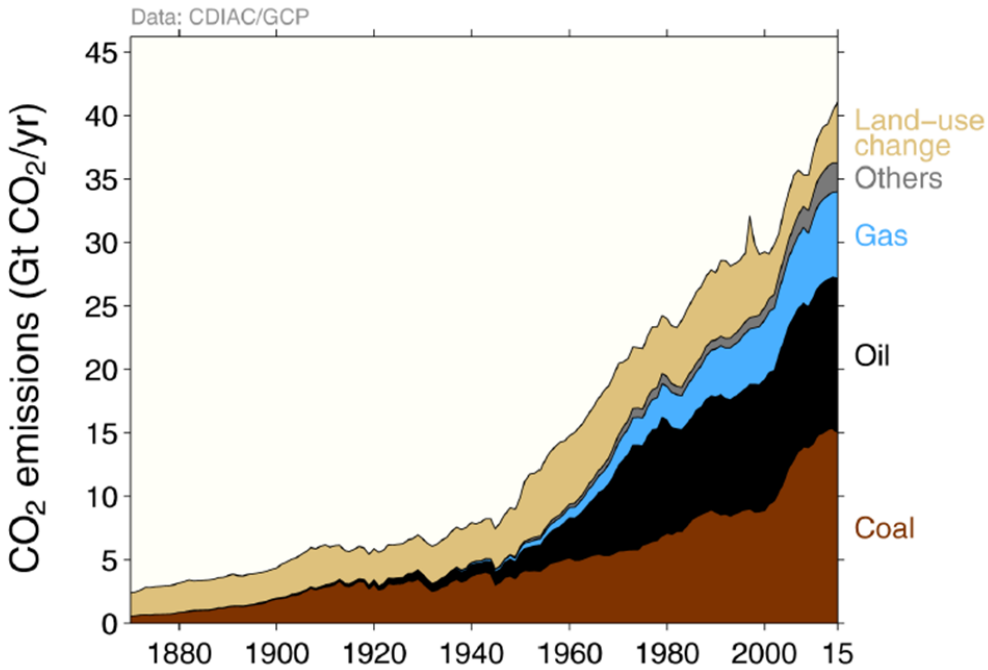
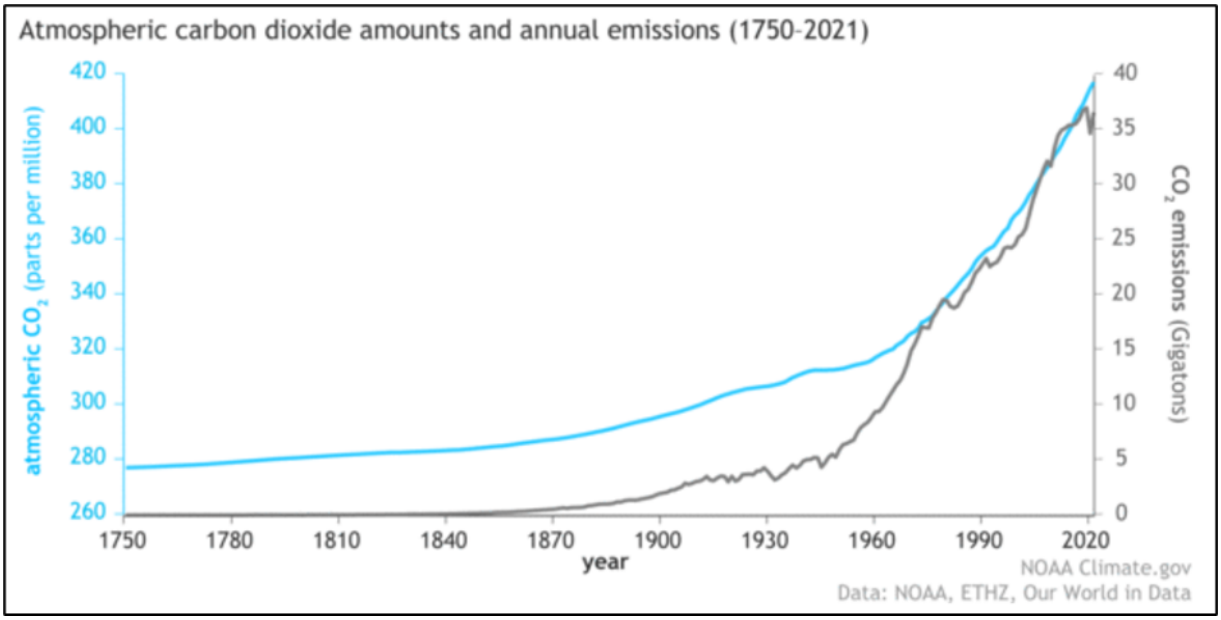


Figure 1: Total Annual Carbon Dioxide Emissions by Source, 1860-2015

[24] Global Carbon Project, *Global Carbon Budget 2016* (Nov. 14, 2016), www.globalcarbonproject.org/carbonbudget/16/files/GCP_CarbonBudget_2016.pdf, *citing* CDIAC; R.A. Houghton et al., *Carbon emissions from land use and land-cover change* (2012), http://www.biogeosciences.net/9/5125/2012/bg-9-5125-2012.html; Louis Giglio et al., *Analysis of daily, monthly, and annual burned area using the fourth-generation global fire emissions database* (2013), http://onlinelibrary.wiley.com/doi/10.1002/jgrg.20042/abstract; C. Le Quéré et al., *Global Carbon Budget 2016*, Earth Syst. Sci. Data 8 (2016), http://www.earth-syst-sci-data.net/8/605/2016/.

44. This acceleration of fossil fuel emissions has led to a correspondingly sharp rise in atmospheric concentration of CO_2. Since 1960, the concentration of CO_2 in the atmosphere has spiked from under 320 parts per million (ppm) to approximately 427 ppm.[25] The concentration of atmospheric CO_2 has also been accelerating. From 1960 to 1970, atmospheric CO_2 increased by an average of approximately 0.9 ppm per year.[26]

45. The graph below (Figure 2) indicates the tight nexus between the sharp increase in emissions from the combustion of fossil fuels and the steep rise of atmospheric concentrations of CO_2.



[25] *Trends in Atmospheric Carbon Dioxide: Full Record*, Global Monitoring Laboratory, https://gml.noaa.gov/ccgg/trends/mlo.html.

[26] *Trends in Atmospheric Carbon Dioxide: Growth Rate*, Global Monitoring Laboratory https://gml.noaa.gov/ccgg/trends/gr.html.

Figure 2: Atmospheric CO_2 Concentration and Annual Emissions[27]

46. The increase in atmospheric CO_2 caused by fossil fuel combustion has been clearly documented and measured, and the ratio of different carbon isotopes in the atmosphere indicates that fossil fuel combustion is the overwhelming source of the increased concentration.[28]

47. Because of the increased burning of fossil fuel products, concentrations of greenhouse gases in the atmosphere are now at an unprecedented level, one not seen in at least three million years.[29]

48. As greenhouse gases accumulate in the atmosphere, the Earth radiates less energy back to space. The result has been dramatic planetary warming. Ocean and land surface temperatures have increased at a rapid pace during the late 20th and early 21st centuries:

i. 2023 was the hottest year on record by globally averaged surface temperatures, exceeding mid-20th century mean ocean and land surface temperatures by approximately 2.12° F. Each month in 2023 was one of the seven hottest by globally averaged surface temperatures of those respective months in any previous year. June, July, August, September, October, November, and December 2023 were all the hottest average surface temperatures for those months.[30]

ii. The second hottest year on record by globally averaged surface temperatures was 2016, and the third hottest was 2020.[31]

iii. The ten hottest years on record by globally averaged surface temperature have all occurred since 2014.[32]

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[27] Rebecca Lindsey, *Climate Change: Atmospheric Carbon Dioxide*, Climate.gov (May 12, 2023), https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide.

[28] *The Data: What Carbon-14 Tells Us*, Global Monitoring Laboratory, https://gml.noaa.gov/ccgg/isotopes/c14tellsus.html.

[29] *More CO_2 than ever before in 3 million years, shows unprecedented computer simulation*, Science Daily (Apr. 3, 2019), https://www.sciencedaily.com/releases/2019/04/190403155436.htm.

[30] NOAA National Center for Environmental Information, NOAA, Annual 2023 Global Climate Report (Jan. 2024), https://www.ncei.noaa.gov/access/monitoring/monthly-report/global/202313.

[31] *Ibid.*

[32] *Ibid.*

49. The average global surface and ocean temperature in 2023 was approximately 2.12° F warmer than the 20th century baseline, which is the greatest positive anomaly observed since at least 1850.[33] The increase in hotter temperatures and more frequent positive anomalies during the Great Acceleration is occurring both globally and locally, including in San Francisco. The graph below (Figure 3) shows the increase in global land and ocean temperature anomalies since 1850, as measured against the 1901–2000 global average temperature.[34]

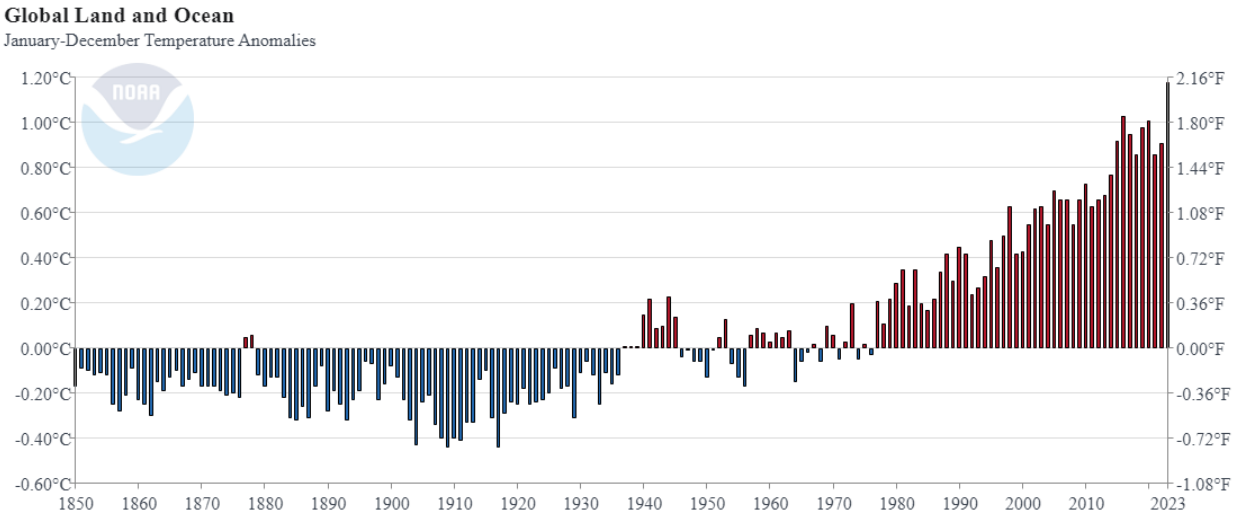

Figure 3: Global Land and Ocean Temperature Anomalies, January – December

50. Warming in California has accelerated since 1850, with seven of the past eight years setting records for warmest year on record.[35]

51. Increasing surface temperatures, both locally and globally, is disrupting the Earth's energy balance and leading to myriad environmental and physical consequences, including, but not limited to, the following:

i. Increased frequency and intensity of heat waves.

[33] NOAA National Center for Environmental Information, NOAA, Annual 2023 Global Climate Report (Jan. 2024), https://www.ncei.noaa.gov/access/monitoring/monthly-report/global/202313.

[34] *See ibid.*

[35] Cal. Office of Environmental Health Hazard Assessment, *Air temperatures*, https://oehha.ca.gov/climate-change/epic-2022/changes-climate/air-temperatures.

ii. Sea level rise, due to the thermal expansion of warming ocean waters and runoff from melting glaciers and ice sheets.

iii. Changes to the global climate generally, bringing about longer droughts and dry periods interspersed with fewer and more severe periods of precipitation, and associated impacts to the quantity and quality of water resources available to both human and ecological systems.

iv. Increased frequency and intensity of extreme weather events due to increases in evaporation, evapotranspiration, and precipitation, a consequence of the warming atmosphere's increased ability to hold moisture.

v. Adverse impacts on human health associated with extreme weather, extreme heat, worsening air quality, and vector-borne illnesses.

vi. Flooding and inundation of land and infrastructure, increased erosion, higher wave run-up and tides, increased frequency and severity of storm surges, saltwater intrusion, and other impacts of higher sea levels.

vii. Ocean acidification, primarily due to the increased uptake of atmospheric carbon dioxide by the oceans.

viii. Changes to terrestrial and marine ecosystems, and consequent impacts on the populations and ranges of flora and fauna.

B. Defendants Knew or Should Have Known the Dangers Associated with Their Fossil Fuel Products.

52. For decades, Defendants have known that their fossil fuel products pose risks of "severe" and even "catastrophic" impacts on the global climate through the work and warnings of their own scientists and/or through trade associations such as API. Defendants consistently researched or funded research into significant issues relevant to fossil fuels and were aware of significant scientific reports on climate change science and impacts at the time they were issued. Thus, Defendants developed a sophisticated understanding of climate change that far exceeded the knowledge of the public, ordinary consumers, and the City. Yet each Defendant decided to continue its conduct and commit itself to massive fossil fuel production. This was a deliberate decision to place company profits ahead of human safety and well-being and to foist onto the public the costs of abating and adapting to the public nuisance of global warming.

53. Although concealed at the time, the industry's knowledge was later uncovered by journalists at *Inside Climate News* and the *Los Angeles Times*, among others.[36] In 1954, geochemist Harrison Brown and his colleagues at the California Institute of Technology wrote to API, informing the trade association that preliminary measurements of natural archives of carbon in tree rings indicated that fossil fuels had caused atmospheric carbon dioxide levels to increase by about 5% since 1840.[37] API provided those scientists funding for various research projects, and measurements of carbon dioxide continued for at least one year and possibly longer, although the results were never published or otherwise made available to the public.[38] In 1957, H.R. Brannon of Humble Oil Company (predecessor-in-interest to Exxon) measured an increase in atmospheric carbon dioxide attributable to fossil fuels, similar to—and in agreement with—that measured by Harrison Brown.[39]

54. In 1959, API organized a centennial celebration of the American oil industry at Columbia University in New York City.[40] High-level representatives of Defendants were in attendance. One of the keynote speakers was nuclear physicist Edward Teller. Teller warned the industry that "a temperature rise corresponding to a 10[%] increase in carbon dioxide will be sufficient to melt the icecap and submerge . . . [a]ll the coastal cities." Teller added that since "a considerable percentage of the human race lives in coastal regions, I think that this chemical contamination is more serious than most people tend to believe."[41] Following his speech, Teller was asked to "summarize briefly the danger from increased carbon dioxide content in the atmosphere in

[36] *See* discussion *infra* ¶¶ 147–50.

[37] *See* Benjamin Franta, *Early Oil Industry Knowledge of CO2 and Global Warming*, 8 Nature Climate Change 1024, 1024–25 (2018).

[38] *Ibid.*

[39] *Ibid.*; Brannon, Jr. et al., *Radiocarbon Evidence on the Dilution of Atmospheric and Oceanic Carbon by Carbon from Fossil Fuels* (1957) 38 Am. Geophysical Union Transactions 643, 644–46.

[40] *See* Allan Nevins & Robert G. Dunlop, *Energy and Man: A Symposium* (Appleton-Century-Crofts, New York 1960); *see also* Franta (2018), *supra* note 37, at 1024–25.

[41] Edward Teller, *Energy Patterns of the Future*, in *Energy and Man: A Symposium* 53–72 (1960).

this century." He responded that "there is a possibility the icecaps will start melting and the level of the oceans will begin to rise."[42]

55. In 1965, the president of API, Frank Ikard, relayed the findings of a recent report to leaders of the fossil fuel industry at API's annual meeting, saying, "[o]ne 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," and quoting 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."[43]

56. Thus, by 1965, Defendants and their predecessors-in-interest were aware that the scientific community had found that fossil fuel products, if used profligately, would cause global warming by the end of the century, and that such global warming would have wide-ranging and costly consequences.

57. In 1968, API received a report from the Stanford Research Institute, which it had hired to assess the state of research on environmental pollutants, including carbon dioxide.[44] The assessment endorsed the findings of President Johnson's Scientific Advisory Council from three years prior, stating that carbon dioxide emissions were "almost certain" to produce "significant" temperature increases by 2000, and that these emissions were almost certainly attributable to fossil fuels. The report warned of "major changes in the earth's environment" and a "rise in sea levels," and concluded: "there seems to be no doubt that the potential damage to our environment could be severe." The scientists warned of "melting of the Antarctic ice cap" and informed API that "[p]ast and present studies of CO_2 are detailed and seem to explain adequately the present state of CO_2 in

[42] *Id.* at 70.

[43] Ikard, *Meeting the Challenges of 1966*, in Proceedings of the American Petroleum Institute (1965) at 13, https://www.documentcloud.org/documents/5348130-1965-API-Proceedings.

[44] Elmer Robinson & R.C. Robbins, *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants*, Stanford Rsch. Inst. (Feb. 1968), https://www.smokeandfumes.org/documents/document16.

the atmosphere." What was missing, the scientists said, was work on "air pollution technology and . . . systems in which CO_2 emissions would be brought under control."[45]

58. In 1969, the Stanford Research Institute delivered a supplemental report on air pollution to API, projecting with alarming particularity that atmospheric CO_2 concentrations would reach 370 parts per million (ppm) by 2000.[46] This projection turned out to almost exactly match the actual CO_2 concentrations measured in 2000 of 369.64 ppm.[47] The report explicitly connected the rise in CO_2 levels to the combustion of fossil fuels, finding it "unlikely that the observed rise in atmospheric CO_2 has been due to changes in the biosphere."

59. By virtue of their membership and participation in API at that time, Defendants received or should have received the Stanford Research Institute reports and were on notice of their conclusions.

60. In 1972, API members—including Defendants—received a status report on all environmental research projects funded by API. The report summarized the 1968 SRI report describing the impact of fossil fuel products—including Defendants'—on the environment, including global warming and its attendant consequences. Defendants and/or their predecessors-in-interest that received this report included but were not limited to: American Standard of Indiana (BP), Asiatic (Shell), Atlantic Richfield (BP), British Petroleum (BP), Chevron Standard of California (Chevron), Esso Research (Exxon), Ethyl (formerly affiliated with Esso, which was subsumed by Exxon), Getty (Exxon), Gulf (Chevron, among others), Humble Standard of New Jersey (Exxon, Chevron, BP), Mobil (Exxon), Pan American (BP), Shell, Standard of Ohio (BP), Texaco (Chevron), Union (Chevron), Skelly (Exxon), Colonial Pipeline (ownership has included BP, ExxonMobil, and

[45] *Id.* at 108, 112.

[46] Elmer Robinson & R.C. Robbins, *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants Supplement*, Stanford Rsch. Inst. (June 1969).

[47] NASA Goddard Institute for Space Studies, *Global Mean CO2 Mixing Ratios (ppm): Observations*, https://data.giss.nasa.gov/modelforce/ghgases/Fig1A.ext.txt.

Chevron entities, among others), Continental (ConocoPhillips), Dupont (former owner of Conoco), Phillips (ConocoPhillips), and Caltex (Chevron).[48]

61. In 1977, James Black of Exxon gave a presentation to Exxon executives on the "greenhouse effect," which was summarized in an internal memo the following year. Black reported that "[t]here is 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." He noted that "current scientific opinion overwhelmingly favors attributing atmospheric carbon dioxide increase to fossil fuel consumption," and relayed that doubling atmospheric carbon dioxide would, according to the best climate model available, "produce a mean temperature increase of about 2 °C to 3 °C [3.6 °F to 5.4 °F] over most of the earth," with two to three times as much warming at the poles.[49] Black also reported that "[p]resent thinking holds 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."[50] Figure 4 below, reproduced from Black's memo, illustrates Exxon's understanding of the timescale and magnitude of global warming that its products would cause.

[48] American Petroleum Institute, *Committee for Air and Water Conservation, Environmental Research: A Status Report* (Jan. 1972), http://files.eric.ed.gov/fulltext/ED066339.pdf.

[49] J.F. Black, Exxon Research and Engineering Co., memorandum to F.G. Turpin, Exxon Research and Engineering Co. re The Greenhouse Effect (June 6, 1978) at 2, 23, 26, https://www.documentcloud.org/documents/2805568-1978-Exxon-Presentation-on-GreenhouseEffect.

[50] *Id.* at 2.

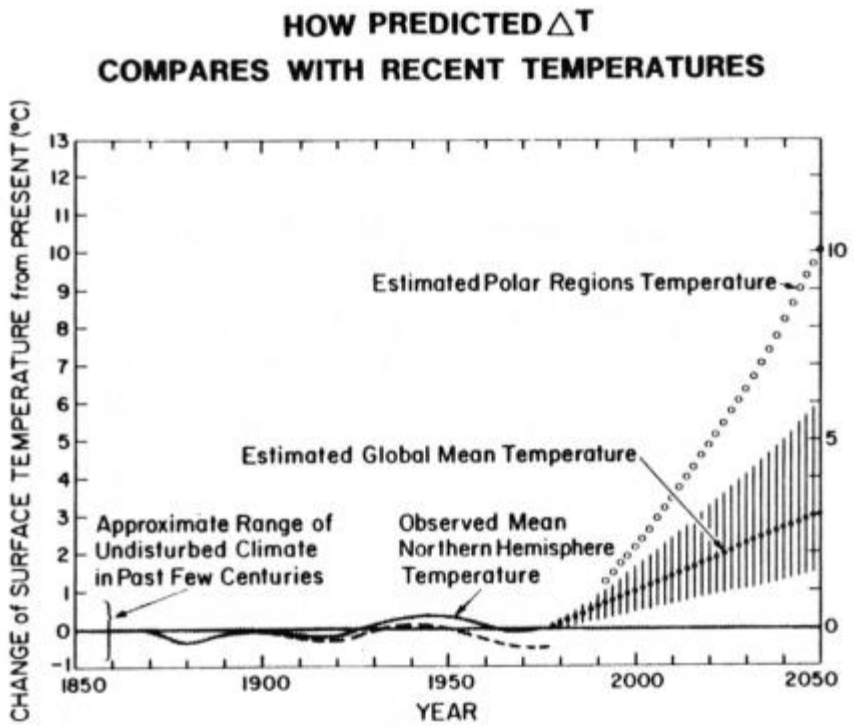

Figure 4: Future Global Warming Predicted Internally by Exxon in 1977[51]

62. Also in 1977, Henry Shaw of the Exxon Research and Engineering Technology Feasibility Center attended a meeting of scientists and governmental officials in Atlanta, Georgia, on developing research programs to study carbon dioxide and global warming. Shaw's internal memo to Exxon's John W. Harrison reported that "[t]he climatic effects of carbon dioxide release may be the primary limiting factor on energy production from fossil fuels[.]"[52]

63. In 1979, an internal Exxon memorandum stated, "The most widely held theory [about the increase in CO_2 concentration in the atmosphere] is that: The increase is due to fossil fuel combustion; [i]ncreasing CO_2 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. . . . The potential problem is great and urgent." The memo added that, if limits were not placed on fossil fuel production,

[51] *Id.* at 26. The company predicted global warming of 1°C to 3°C (1.8°F to 5.4°F) by 2050, with 10°C (18°F) warming in polar regions. The difference between the lower dashed and solid curves prior to 1977 represents global warming that Exxon believed may already have been occurring. *Ibid.*

[52] Henry Shaw, *Environmental Effects of Carbon Dioxide, Climate Investigations Ctr.* (Oct. 31, 1977), https://www.industrydocuments.ucsf.edu/docs/tpwl0228.

> Noticeable temperature changes would occur around 2010 as the [CO_2] concentration reaches 400 ppm. Significant climatic changes occur around 2035 when the concentration approaches 500 ppm. A doubling of the pre-industrial concentration [i.e., 580 ppm] occurs around 2050. The doubling would bring about dramatic changes in the world's environment[.][53]

Those projections proved remarkably accurate. Annual average atmospheric CO_2 concentrations surpassed 400 ppm in 2015 for the first time in millions of years.[54] And due to "committed warming"—the reality that future increases in global temperatures are caused by greenhouse gases that have *already* been emitted—future warming is certain to occur even if all greenhouse gas emissions ceased today. Put differently, because greenhouse gases can linger in the atmosphere for hundreds of years, there is a lag time between emissions on the one hand, and atmospheric greenhouse gas concentrations that lead to warming, on the other hand. Given this lag time, limiting the CO_2 concentration in the atmosphere to 440 ppm, or a 50% increase over preindustrial levels, which the Exxon memo said was "assumed to be a relatively safe level for the environment," would require fossil fuel emissions to peak in the 1990s and non-fossil energy systems to be rapidly deployed. Eighty percent of fossil fuel resources, the memo calculated, would have to be left in the ground to avoid doubling atmospheric carbon dioxide concentrations. Certain fossil fuels, such as shale oil, could not be substantially exploited at all.[55]

64. But instead of disclosing to consumers any aspects of these research findings, in November 1979, according to internal correspondence, Exxon urged "a very aggressive defensive program in . . . atmospheric science and climate" to "anticipate the strong intervention of environmental groups."[56] It urged an expanded research effort to "prepare[] for, and [get] ahead of the government in making the public aware of pollution problems."

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[53] W.L. Ferrall, Exxon Research and Engineering Co., memorandum to Dr. R.L. Hirsch re Controlling Atmospheric CO_2 (Oct. 16, 1979) at 1–2, 5, https://www.industrydocuments.ucsf.edu/docs/mqwl0228.

[54] Nicola Jones, *How the World Passed a Carbon Threshold and Why It Matters*, Yale Env't 360 (Jan. 26, 2017), https://e360.yale.edu/features/how-the-world-passed-a-carbon-threshold-400ppm-and-why-it-matters.

[55] W.L. Ferrall, Controlling Atmospheric CO_2, *supra*, at 3, 6–7.

[56] H. Shaw memorandum to H.N. Weinberg re Research in Atmospheric Science (Nov. 19, 1979) at 2, https://www.industrydocuments.ucsf.edu/docs/yqwl0228.

65. In 1979, API and its members, including Defendants, convened a task force to monitor and share cutting edge climate research among the oil industry. The group was initially called the CO_2 and Climate Task Force, but changed its name to the Climate and Energy Task Force in 1980 (hereinafter referred to as "Task Force"). API kept and distributed meeting minutes to Task Force members. Membership included senior scientists and engineers from nearly every major U.S. and multinational oil and gas company, including Exxon, Mobil (Exxon), Amoco (BP), Phillips (ConocoPhillips), Texaco (Chevron), Shell, Sunoco, Sohio (BP) as well as Standard Oil of California (Chevron) and Gulf Oil (Chevron, among others). The Task Force was charged with assessing the implications of emerging science on the petroleum and gas industries and identifying where reductions in greenhouse gas emissions from Defendants' fossil fuel products could be made.[57]

66. In 1979, a paper prepared by API for the Task Force asserted that CO_2 concentrations were rising, and predicted that, although global warming would occur, it would likely go undetected until approximately the year 2000 because its effects were being temporarily masked by a natural cooling trend.[58]

67. In 1980, the Task Force invited Dr. J.A. Laurman, a "recognized expert in the field of CO_2 and climate," to make a presentation to its members.[59] The meeting lasted for seven hours and included a "complete technical discussion" of global warming caused by fossil fuels, including "the scientific basis and technical evidence of CO_2 buildup, impact on society, methods of modeling and their consequences, uncertainties, policy implications, and conclusions that can be drawn from present knowledge." Attendees to the presentation included scientists and executives from API, Texaco (a predecessor to Chevron), Exxon, and SOHIO (a predecessor to BP), and the minutes of the meeting were distributed to the entire Task Force. Dr. Laurman's written presentation informed

[57] American Petroleum Institute, *AQ-9 Task Force Meeting Minutes* (March 18, 1980), http://insideclimatenews.org/sites/default/files/documents/AQ-9%20Task%20Force%20Meeting%20%281980%29.pdf (AQ-9 refers to the "CO2 and Climate" Task Force).

[58] R.J. Campion memorandum to J.T. Burgess re Comments on The API's Background Paper on CO_2 Effects (Sept. 6, 1979), https://www.industrydocuments.ucsf.edu/docs/lqwl0228.

[59] J. J. Nelson, American Petroleum Institute, letter to AQ-9 Task Force re The CO_2 Problem; Addressing Research Agenda Development (Mar. 18, 1980) at 2, https://www.industrydocuments.ucsf.edu/docs/gffl0228.

the Task Force that there was a "Scientific Consensus on the Potential for Large Future Climatic Response to Increased CO_2 Levels." He further informed the Task Force in his presentation that, though the exact temperature increases were difficult to predict, the "physical facts agree on the probability of large effects 50 years away." He warned the Task Force of a 2.5ºC (4.5ºF) global temperature rise by 2038, which would likely have "MAJOR ECONOMIC CONSEQUENCES," and a 5ºC (9ºF) rise by 2067, which would likely produce "GLOBALLY CATASTROPHIC EFFECTS." He also suggested that, despite uncertainty, "THERE IS NO LEEWAY" in the time for acting.

68. At this presentation, API minutes show that the Task Force discussed topics including "the technical implications of energy source changeover" and "ground rules for energy release of fuels and the cleanup of fuels as they relate to CO_2 creation." The Task Force also discussed a potential area for investigation: alternative energy sources as a means of mitigating CO_2 emissions from Defendants' fossil fuel products. These efforts called for research and development to "Investigate the Market Penetration Requirements of Introducing a New Energy Source into World Wide Use." Such investigation was to include the technical implications of energy source changeover, research timing, and requirements.[60] The Task Force even asked the question "what is the 50 year future of fossil fuels?"

69. In 1980, a Canadian Esso (Exxon) company report sent to managers and staff at affiliated Esso and Exxon companies stated that there was "no doubt" that fossil fuels were aggravating the build-up of CO_2 in the atmosphere, and that "[t]echnology exists to remove CO_2 from stack gases but removal of only 50% of the CO_2 would double the cost of power generation."[61]

70. In December 1980, an Exxon manager distributed a memorandum on the "CO_2 Greenhouse Effect" attributing future buildup of carbon dioxide to fossil fuel use, and explaining that internal calculations indicated that atmospheric carbon dioxide could double by around 2060,

[60] *Ibid.*

[61] Imperial Oil Ltd., Review of Environmental Protection Activities for 1978–1979 (Aug. 6, 1980) at 2, http://www.documentcloud.org/documents/2827784-1980-ImperialOil-Review-of-Environmental.html#document/.

"most likely" resulting in global warming of approximately 3.0 ± 1.5°C (2.7 to 8.1°F).[62] Calculations predicting a lower temperature increase, such as 0.25°C (0.45°F), were "not held in high regard by the scientific community[.]" The memo also reported that such global warming would cause "increased rainfall[] and increased evaporation," which would have a "dramatic impact on soil moisture, and in turn, on agriculture" and other "serious global problems[.]" The memo called for "society" to pay the bill, estimating that some adaptive measures would cost no more than "a few percent" of gross national product.[63] Shaw also reported that Exxon had studied various responses for avoiding or reducing a carbon dioxide build-up, including "stopping all fossil fuel combustion at the 1980 rate" and "investigat[ing] the market penetration of non-fossil fuel technologies." The memo estimated that such non-fossil energy technologies "would need about 50 years to penetrate and achieve roughly half of the total [energy] market."[64] The memo included Figure 5 below, which illustrates global warming anticipated by Exxon as well as the company's understanding that significant global warming would occur before exceeding the range of natural variability.

[62] Henry Shaw memorandum to T.K. Kett re Exxon Research and Engineering Company's Technological Forecast: CO_2 Greenhouse Effect (Dec. 18, 1980) at 3, https://www.documentcloud.org/documents/2805573-1980-Exxon-Memo-Summarizing-Current-Models-And.html.

[63] *Id.* at 3–5.

[64] *Id.* at 5–6.

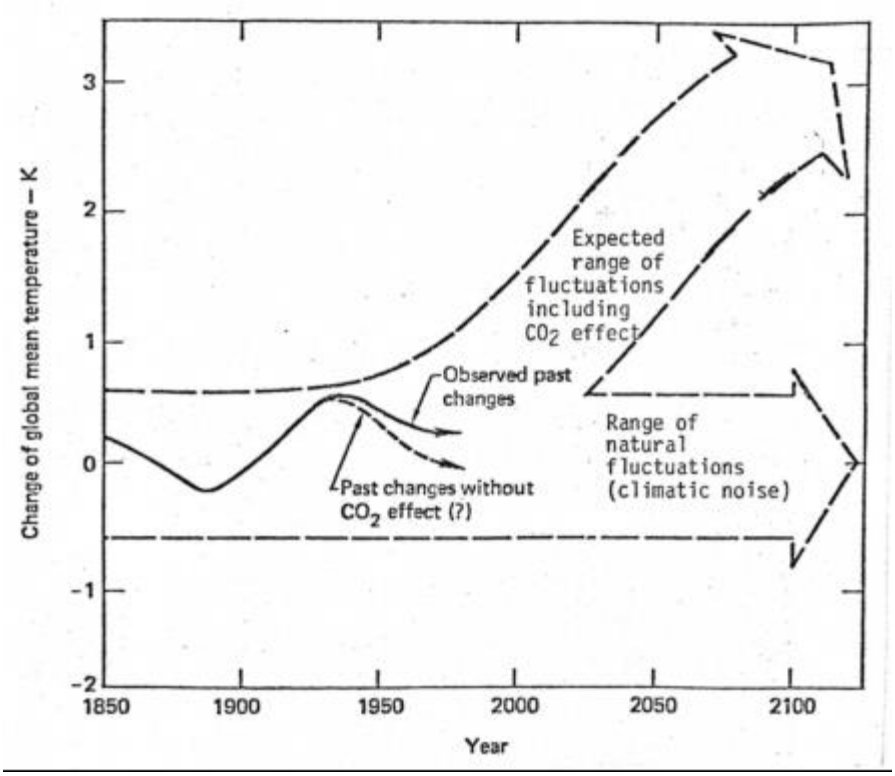

Figure 5: Future Global Warming Predicted Internally by Exxon in 1980[65]

71. In February 1981, Exxon's Contract Research Office prepared and distributed a "Scoping Study on CO_2" to the leadership of Exxon Research and Engineering Company.[66] The study reviewed Exxon's carbon dioxide research and considered whether to expand its research on carbon dioxide or global warming further. It recommended against expanding those research areas because Exxon's current research programs were sufficient for achieving the company's goals of closely monitoring federal research, building credibility and public relations value, and developing in-house expertise regarding CO_2 and global warming, and noted that Exxon employees were actively monitoring and keeping the company apprised of outside research developments, including those on climate modeling and "CO_2-induced effects." In discussing "options for reducing CO_2 build-up in the atmosphere," the study noted that although capturing CO_2 from flue gases (i.e.,

[65] *Id.* at 12. The company anticipated a doubling of carbon dioxide by around 2060 and that the oceans would delay the warming effect by a few decades, leading to approximately 3°C (5.4°F) warming by the end of the century.

[66] G.H. Long, Exxon Research and Engineering Co., letter to P.J. Lucchesi et al. re Atmospheric CO Scoping Study (Feb. 5, 1981), https://www.industrydocuments.ucsf.edu/docs/yxfl0228.

exhaust gas produced by combustion) was technologically possible, the cost was high, and "energy conservation or shifting to renewable energy sources[] represent the only options that might make sense."[67]

72. Exxon scientist Roger Cohen warned his colleagues in a 1981 internal memorandum that "future developments in global data gathering and analysis, along with advances in climate modeling, may provide strong evidence for a delayed CO_2 effect of a truly substantial magnitude," and that under certain circumstances it would be "very likely that we will unambiguously recognize the threat by the year 2000."[68] Cohen had expressed concern that the memorandum understated the potential effects of reckless CO_2 emissions from Defendants' fossil fuel products, saying, "it is distinctly possible" that CO_2 emissions "will later produce effects which will indeed be catastrophic (at least for a substantial fraction of the earth's population)."[69]

73. Also in 1981, Exxon's Henry Shaw, the company's lead climate researcher at the time, prepared a summary of Exxon's current position on the greenhouse effect for Edward David Jr., president of Exxon Research and Engineering Company, stating in relevant part:

- "Atmospheric CO_2 will double in 100 years if fossil fuels grow at 1.4% [per year].
- 3^oC global average temperature rise and 10^oC at poles if CO_2 doubles.
    - Major shifts in rainfall/agriculture
    - Polar ice may melt"[70]

74. Thus, by 1981, Exxon and other fossil fuel companies knew CO_2 accumulation in the atmosphere from fossil fuel consumption would lead to global warming, were actively monitoring all aspects of CO_2 and global warming research, and recognized that a shift away from fossil fuels

[67] *Ibid.*

[68] R.W. Cohen memorandum to W. Glass (Aug. 18, 1981), http://www.climatefiles.com/exxonmobil/1981-exxon-memo-on-possible-emissionconsequences-of-fossil-fuel-consumption.

[69] *Ibid.*

[70] Henry Shaw, *Exxon Memo to E. E. David, Jr. about "CO_2Position Statement"*, Exxon Inter-Office Correspondence (May 15, 1981), https://www.climatefiles.com/exxonmobil/co2-research-program/1981-internal-exxon-co2-position-statement/.

and towards renewable energy sources would be necessary to avoid a large CO_2 buildup in the atmosphere and resultant global warming.

75. In 1982, another API-commissioned report showed the average increase in global temperature from a doubling of atmospheric concentrations of CO_2 and projected, based upon computer modeling, global warming of between 2 ºC and 3.5 ºC [3.6 ºF to 6.3 ºF]. The report projected potentially "serious consequences for man's comfort and survival," and noted that "the height of the sea level can increase considerably."[71] Exxon's own modeling research confirmed this.[72] In a 1982 internal memorandum, Exxon's Corporate Research and Science Laboratories acknowledged a "clear scientific consensus," based on computer modeling, that "a doubling of atmospheric CO_2 from its pre-industrial revolution value would result in an average global temperature rise of (3.0 ± 1.5) ºC [2.7 ºF to 8.1 ºF]."[73] The memo continued: "There is unanimous agreement in the scientific community that a temperature increase of this magnitude would bring about significant changes in the earth's climate, including rainfall distribution and alterations in the biosphere."

76. Also in 1982, Exxon's Environmental Affairs Manager distributed a primer on climate change to a "wide circulation [of] Exxon management . . . intended to familiarize Exxon personnel with the subject."[74] The primer also was "restricted to Exxon personnel and not to be distributed externally."[75] The primer compiled science on climate change available at the time, and confirmed fossil fuel combustion as a primary anthropogenic contributor to global warming. The primer included Figure 6 below, which estimated a CO_2 doubling around 2090 based on Exxon's

[71] American Petroleum Institute, Climate Models and CO_2 Warming: A Selective Review and Summary (Mar. 1982) at 4, https://www.climatefiles.com/trade-group/americanpetroleum-institute/api-climate-models-and-co2-warming-a-selective-review-and-summary/.

[72] *See* Roger W. Cohen, Exxon Research and Engineering Co., memorandum to A.M. Natkin, Office of Science and Technology, Exxon Corp. (Sept. 2, 1982), https://www.climatefiles.com/exxonmobil/1982-exxon-memo-summarizing-climate-modelingand-co2-greenhouse-effect-research/.

[73] *Id.* at 1.

[74] M. B. Glaser, *Exxon Memo to Management about "CO_2 'Greenhouse' Effect"*, Exxon Research and Engineering Company (Nov. 12, 1982), https://insideclimatenews.org/wp-content/uploads/2015/09/1982-Exxon-Primer-on-CO2-Greenhouse-Effect.pdf.

[75] *Ibid.*

long-range modeled outlook. The author warned that the melting of the Antarctic ice sheet could result in global sea level rise of five feet which would "cause flooding on much of the U.S. East Coast, including the State of Florida and Washington, D.C."[76] Indeed, it warned that "there are some potentially catastrophic events that must be considered," including sea level rise from melting polar ice sheets. It noted that some scientific groups were concerned "that once the effects are measurable, they might not be reversible."[77]

[76] *Ibid.*
[77] *Ibid.*

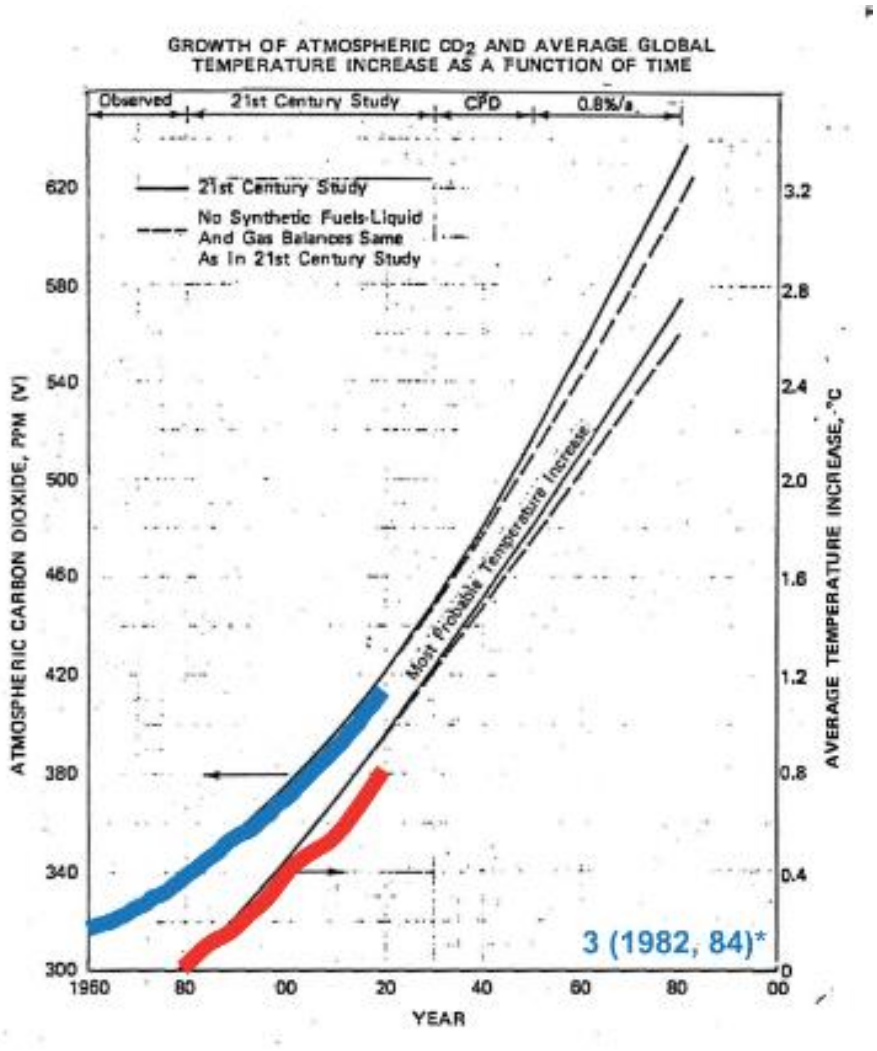

Figure 6: Exxon's Internal Prediction of Future CO_2 Increase and Global Warming from 1982[78]

The report recommended studying "soil erosion, salinization, or the collapse of irrigation systems" in order to understand how society might be affected and might respond to global warming, as well as "[h]ealth effects" and "stress associated with climate related famine or migration[.]"[79] The report again estimated that undertaking "[s]ome adaptive measures" (not all of them) would cost "a few percent of the gross national product estimated in the middle of the next century" (gross national

[78] *Id.* at 7. The company predicted a doubling of atmospheric carbon dioxide concentrations above preindustrial levels by around 2090 (left curve), with a temperature increase of more than 2°C (3.6°F) over the 1979 level (right curve).

[79] *Id.* at 14.

product was $25.925 trillion in 2022).[80] To avoid such impacts, the report discussed a scientific analysis which studied energy alternatives and requirements for introducing them into widespread use, and which recommended that "vigorous development of non-fossil energy sources be initiated as soon as possible."[81] The primer also noted that the analysis indicated that other greenhouse gases related to fossil fuel production, such as methane (which is a more powerful greenhouse gas than CO_2), "may significantly contribute to a global warming," and that concerns over CO_2 would be reduced if fossil fuel use were decreased due to "high price, scarcity, [or] unavailability."[82] "Mitigation of the 'greenhouse effect' would require major reductions in fossil fuel combustion," the primer stated.[83] The primer was widely distributed to Exxon leadership.

77. In September 1982, the Director of Exxon's Theoretical and Mathematical Sciences Laboratory, Roger Cohen, wrote Alvin Natkin of Exxon's Office of Science and Technology to summarize Exxon's internal research on climate modeling.[84] Cohen reported:

> [O]ver the past several years a clear scientific consensus has emerged regarding the expected climatic effects of increased atmospheric CO_2. The consensus is that a doubling of atmospheric CO_2 from its pre-industrial revolution value would result in an average global temperature rise of (3.0 ± 1.5) °C [(2.7 to 8.1) °F]. . . . The temperature rise is predicted to be distributed nonuniformly over the earth, with above-average temperature elevations in the polar regions and relatively small increases near the equator. There is unanimous agreement in the scientific community that a temperature increase of this magnitude would bring about significant changes in the earth's climate, including rainfall distribution and alterations of the biosphere. The time required for doubling of atmospheric CO_2 depends on future world consumption of fossil fuels.

Cohen described Exxon's own climate modeling experiments, reporting that they produced "a global averaged temperature increase that falls well within the range of the scientific consensus," were

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[80] *Ibid.*; *see* Fed. Reserve Bank of St. Louis, Gross National Product (updated Mar. 30, 2023), https://fred.stlouisfed.org/series/GNPA.

[81] M.B. Glaser, CO_2 "Greenhouse" Effect, *supra* note 74, at 18.

[82] *Id.* at 18, 29.

[83] *Id.* at 2.

[84] Roger W. Cohen, Exxon Research and Engineering Co., memorandum to A.M. Natkin, Exxon Corp. Office of Science and Technology (Sept. 2, 1982), https://www.climatefiles.com/exxonmobil/1982-exxon-memo-summarizing-climate-modelingand-co2-greenhouse-effect-research/.

"consistent with the published predictions of more complex climate models," and were "also in agreement with estimates of the global temperature distribution during a certain prehistoric period when the earth was much warmer than today." "In summary," Cohen wrote, "the results of our research are in accord with the scientific consensus on the effect of increased atmospheric CO_2 on climate."

78. In October 1982, at the fourth biennial Maurice Ewing Symposium at the Lamont- Doherty Geophysical Observatory, which was attended by members of API and Exxon Research and Engineering Company, the Observatory's president E.E. David delivered a speech titled, "Inventing the Future: Energy and the CO_2 'Greenhouse Effect.'"[85] His remarks included the following statement: "[i]t is ironic that the biggest uncertainties about the CO_2 buildup are not in predicting what the climate will do, but in predicting what people will do."[86]

79. Throughout the early 1980s, at Exxon's direction, Exxon climate scientist Henry Shaw forecasted emissions of CO_2 from fossil fuel use. Those estimates were incorporated into Exxon's twenty-first century energy projections and were distributed among Exxon's various divisions. Shaw's conclusions included an expectation that atmospheric CO_2 concentrations would double in 2090 per the Exxon model, with an attendant 2.3°C to 5.6°C (4.1°F to 10.1°F) average global temperature increase.[87]

80. During the 1980s, many Defendants formed their own research units focused on climate modeling. API, including the Task Force, provided a forum for Defendants to share their research efforts and corroborate their findings related to anthropogenic greenhouse gas emissions.[88]

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[85] Dr. E.E. David, Jr., President, Exxon Research and Engineering Co., Remarks at the Fourth Annual Ewing Symposium, Tenafly, NJ, ClimateFiles (Oct. 26, 1982), http://www.climatefiles.com/exxonmobil/inventing-future-energy-co2-greenhouse-effect.

[86] *Id.*

[87] Neela Banerjee, *More Exxon Documents Show How Much It Knew About Climate 35 Years Ago*, Inside Climate News (Dec. 1, 2015), https://insideclimatenews.org/news/01122015/documents-exxons-early-co2-position-seniorexecutives-engage-and-warming-forecast/.

[88] 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-aboutclimate-change-dangers-1970s-american-petroleum-institute-api-shell-chevron-texaco/.

81. During this time, Defendants' statements expressed an understanding of their obligation to consider and mitigate the externalities of reckless promotion, marketing, and consumption of their fossil fuel products. For example, in 1988, Richard Tucker, the president of Mobil Oil, presented at the American Institute of Chemical Engineers National Meeting, the premier educational forum for chemical engineers, where he stated:

> [H]umanity, which has created the industrial system that has transformed civilization, is also responsible for the environment, which sometimes is at risk because of unintended consequences of industrialization. . . . Maintaining the health of this life-support system is emerging as one of the highest priorities. . . . [W]e must all be environmentalists.
>
> The environmental covenant requires action on many fronts . . . the low-atmosphere ozone problem, the upper-atmosphere ozone problem and the greenhouse effect, to name a few. . . . Our strategy must be to reduce pollution before it is ever generated—to prevent problems at the source.
>
> Prevention means engineering a new generation of fuels, lubricants and chemical products. . . . Prevention means designing catalysts and processes that minimize or eliminate the production of unwanted byproducts. . . . Prevention on a global scale may even require a dramatic reduction in our dependence on fossil fuels—and a shift towards solar, hydrogen, and safe nuclear power. It may be possible that—just possible—that the energy industry will transform itself so completely that observers will declare it a new industry. . . . Brute force, low-tech responses and money alone won't meet the challenges we face in the energy industry.[89]

82. In 1987, Shell published an internal "brief for companies of the Royal Dutch/Shell Group" titled "Air pollution: an oil industry perspective." In this report, the company described the greenhouse effect as occurring "largely as a result of burning fossil fuels and deforestation."[90] Shell further acknowledged the "concern that further increases in carbon dioxide levels could cause climatic changes, notably a rise in overall temperature, having major environmental, social and economic consequences."[91]

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[89] Richard E. Tucker, *High Tech Frontiers in the Energy Industry: The Challenge Ahead*, AIChE National Meeting (Nov. 30, 1988), https://hdl.handle.net/2027/pur1.32754074119482?urlappend=%3Bseq=528.

[90] Shell Briefing Service, *Air pollution: an oil industry perspective* (1987) at 4, https://www.documentcloud.org/documents/24359057-shell-briefing-service-air-pollution-an-oil-industry-perspective-nr1-1987.

[91] *Id.* at 5.

83. In 1988, the Shell Greenhouse Effect Working Group issued a confidential internal report, "The Greenhouse Effect," which acknowledged global warming's anthropogenic nature: "Man-made carbon dioxide, released into and accumulated in the atmosphere, is believed to warm the earth through the so-called greenhouse effect." The authors also noted the burning of fossil fuels as a primary driver of CO_2 buildup and warned that warming could "create significant changes in sea level, ocean currents, precipitation patterns, regional temperature and weather." They further pointed to the potential for "direct operational consequences" of sea level rise on "offshore installations, coastal facilities and operations (e.g. platforms, harbors, refineries, depots)."[92]

84. Similar to early warnings by Exxon scientists, the 1988 Shell report noted 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." The authors mentioned the need to consider policy changes on multiple occasions, noting that "the potential implications for the world are . . . so large that policy options need to be considered much earlier" and that research should be "directed more to the analysis of policy and energy options than to studies of what we will be facing exactly."[93]

85. Defendants also meticulously examined plausible scenarios if they failed to act in the face of their internal knowledge. For instance, Shell evaluated in a 1989 internal confidential planning document the issue of "climate change – the greenhouse effect, global warming," which the document identified as "the most important issue for the energy industry."[94] The document compared a scenario in which society "addresses the potential problem" with one in which it does not. Acknowledging that "[c]hanging emission levels … and changing atmospheric CO2 concentration has been likened to turning around a VLCC [very large crude carrier]," even

[92] Shell Internationale Petroleum, Greenhouse Effect Working Group, The Greenhouse Effect (May 1988) at 1, 27, available at https://www.documentcloud.org/documents/4411090-Document3.html#document/p9/a411239.

[93] *Id.* at 1, 6.

[94] Shell, *Scenarios 1989–2010: Challenge and Response* at 33 (Oct. 1989) at 33, available at 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.

"substantial efforts" by 2010 would have "hardly any impact on CO2 concentration." In later years, however, the impacts are "strikingly different;" early efforts "will not prevent the problem arising, but … could mitigate the problem." The document described the consequences of failing to address the problem right away:

> These seem small changes but they mask more dramatic temperature changes which would take place at temperate latitudes. 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. Something as simple as a moderate change in rainfall pattern disrupts eco-systems, and many species of trees, plants, animals and insects would not be able to move and adapt.
>
> The changes would, however, most impact on humans. In earlier times, man was able to respond with his feet. Today, there is no place to go because people already stand there. Perhaps those in industrial countries could cope with a rise in sea level (the Dutch examples) but for poor countries such defences are not possible. The potential refugee problem … could be unprecedented. Africans would push into Europe, Chinese into the Soviet Union, Latins into the United States, Indonesians into Australia. Boundaries would count for little – overwhelmed by the numbers. Conflicts would abound. Civilization could prove a fragile thing.[95]

86. In another 1989 confidential internal planning document, Shell anticipated that "public/media pressures" to "adopt[] environmental programmes" such as "much tighter targets for CO_2 emissions" could prompt "effective consumer responses" that "will lead to intense and unpredictable pressures on business."[96] The scenario envisioned that "[c]oncerns about global warming and depletion will depress production of fossil fuels, their market share declining as renewables are actively promoted," given that "[w]here there can be real consumer choice it will be a dominant force, especially where interest is heightened by obvious environmental impact."[97]

[95] *Id.* at 36.

[96] *See* Shell UK, *UK Scenarios 1989* (Nov. 1989), at 31, 34, available at https://embed.documentcloud.org/documents/24359062-snippets-of-confidential-shell-uk-november-1989-scenarios.

[97] *Id.* at 34.

87. In yet another scenario published in a 1998 internal report, Shell paints an eerily prescient scene:

> In 2010, a series of violent storms causes extensive damage to the eastern coast of the U.S. Although it is not clear whether the storms are caused by climate change, people are not willing to take further chances. The insurance industry refuses to accept liability, setting off a fierce debate over who is liable: the insurance industry or the government. After all, two successive IPCC reports since 1993 have reinforced the human connection to climate change . . . Following the storms, a coalition of environmental NGOs brings a class-action suit against the US government and fossil-fuel companies on the grounds of neglecting what scientists (including their own) have been saying for years: that something must be done. A social reaction to the use of fossil fuels grows, and individuals become 'vigilante environmentalists' in the same way, a generation earlier, they had become fiercely anti-tobacco. Direct-action campaigns against companies escalate. Young consumers, especially, demand action.[98]

88. In a 1997 speech at Stanford University, John Browne, Group Executive for BP America, noted that "there is now an effective consensus among the world's leading scientists and serious and well informed people outside the scientific community that there is a discernible human influence on the climate, and a link between the concentration of carbon dioxide and the increase in temperature."[99]

89. Climate change research conducted by Defendants and their industry associations frequently acknowledged uncertainties in their climate modeling. Those uncertainties, however, were largely with respect to the magnitude and timing of climate impacts resulting from fossil fuel consumption, not with respect to whether significant changes would eventually occur. Defendants' researchers and the researchers at their industry associations harbored little doubt that climate change was occurring and that fossil fuel products were, and are, the primary cause. As Ken Croasdale, a

[98] Royal Dutch/Shell Group, *Group Scenarios 1998–2020* 115, 122 (1998), http://www.documentcloud.org/documents/4430277-27-1-Compiled.html.

[99] John Browne, *BP Climate Change Speech to Stanford*, ClimateFiles (May 19, 1997), http://www.climatefiles.com/bp/bp-climate-change-speech-to-stanford.

senior researcher for Exxon's subsidiary Imperial Oil, stated to an audience of engineers in 1991, greenhouse gases are rising "due to the burning of fossil fuels. Nobody disputes this fact."[100]

C. Despite Their Early Knowledge of Real and Severe Harm Posed by the Consumption of Fossil Fuel Products, Defendants Affirmatively Acted to Obscure Those Harms and Engaged in a Campaign to Deceptively Protect and Expand the Use of Their Fossil Fuel Products.

90. Despite the overwhelming evidence about the threats to people and the planet posed by continued use of their fossil fuel products amassed leading up to and throughout the 1980s, Defendants failed to act reasonably to mitigate or avoid those dire adverse impacts. Defendants instead adopted the position that they had a license to continue the unfettered pursuit of profits from those products—including by intentionally misleading and deceiving the public regarding these threats.

91. Exxon has all but admitted to these decisions. In a secretly recorded video from 2021, an Exxon executive stated:

> Did we aggressively fight against some of the science? Yes.
> Did we join some of these shadow groups to work against some of the early efforts? Yes, that's true. There's nothing illegal about that.
>
> We were looking out for our investments. We were looking out for our shareholders."[101]

92. On notice that their products were causing global climate change and dire effects on the planet, Defendants could and should have issued reasonable warnings to consumers and the public of the dangers known of consuming of their fossil fuel products. Instead, Defendants engaged in advertising and communications campaigns intended to promote consumer demand for their fossil fuel products by downplaying the harms and risks of global warming. Initially, the campaigns tried to show that global warming was not occurring. More recently, the campaigns have sought to minimize the risks and harms from global warming. The deception campaigns have had the purpose

[100] Jerving et al., *Special Report: What Exxon Knew About Global Warming's Impact on the Arctic*, L.A. Times (Oct. 10, 2015), https://www.latimes.com/business/la-na-advexxon-arctic-20151011-story.html.

[101] Jeff Brady, *Exxon Lobbyist Caught on Video Talking About Undermining Biden's Climate Push*, NPR (July 1, 2021, 11:37 AM ET), https://www.npr.org/2021/07/01/1012138741/exxon-lobbyist-caught-on-video-talks-about-undermining-bidens-climate-push.

and effect of inflating and sustaining the market for fossil fuels, which—in turn—drove up greenhouse gas emissions, accelerated global warming, delayed the energy economy's transition to a lower-carbon future, and brought about climate change harms to San Francisco.

93. Defendants' conduct was an abdication and contravention of their responsibility to consumers and the public, including the City, to act on their unique knowledge of the reasonably foreseeable hazards of reckless production and promotion of their fossil fuel products. Had Defendants acted responsibly to issue reasonable warnings instead of engaging in a disinformation campaign, consumers would have acted sooner and faster to reduce their fossil fuel consumption and stimulate demand for non-carbon energy alternatives whose use does not imperil the Earth. This process is now stutteringly underway, but was wrongfully delayed by Defendants' deception and continued downplaying of the reality and severity of climate change—and of fossil fuels' role in causing it.

94. Several key events during the period between 1988 and 1992 prompted Defendants to pivot from researching and discussing climate change internally to affirmatively deceiving consumers and the public about the climatic dangers of fossil fuels. As climate change—and the role of fossil fuels in causing it—became an increasingly prominent concern, Defendants realized that accurate consumer and public understanding of the dangers of fossil fuels would pose a paramount threat to their business model, their assets, and their profits. Key events that precipitated the shift from research to deception included the following:

i. In 1988, National Aeronautics and Space Administration ("NASA") scientists confirmed that human activities were actually contributing to global warming.[102] On June 23 of that year, NASA scientist James Hansen's presentation of this information to Congress engendered significant news coverage and publicity for the announcement, including coverage on the front page of *The New York Times*.

ii. On July 28, 1988, Senator Robert Stafford and four bipartisan co-sponsors introduced S. 2666, "The Global Environmental Protection Act," to regulate CO_2 and other

[102] *See* Peter C. Frumhoff et al., *The Climate Responsibilities of Industrial Carbon Producers* (2015) 132 Climatic Change 157, 161, http://dx.doi.org/10.1007/s10584-015-1472-5.

greenhouse gases. Three more bipartisan bills to significantly reduce CO_2 pollution were introduced over the following ten weeks, and in August, U.S. Presidential candidate George H.W. Bush pledged that his presidency would combat the greenhouse effect with "the White House effect."[103] Political will in the United States to reduce anthropogenic greenhouse gas emissions and mitigate the harms associated with Defendants' fossil fuel products was gaining momentum.

iii. In December 1988, the United Nations formed the IPCC, a scientific panel dedicated to providing the world's governments with an objective, scientific analysis of climate change and its environmental, political, and economic impacts.

iv. In 1990, the IPCC published its First Assessment Report on anthropogenic climate change,[104] which concluded that (1) "there is a natural greenhouse effect which already keeps the Earth warmer than it would otherwise be," and (2) that

> emissions resulting from human activities are substantially increasing the atmospheric concentrations of the greenhouse gases carbon dioxide, methane, chlorofluorocarbons (CFCs) and nitrous oxide. These increases will enhance the greenhouse effect, resulting on average in an additional warming of the Earth's surface. The main greenhouse gas, water vapour, will increase in response to global warming and further enhance it.[105]

The IPCC reconfirmed those conclusions in a 1992 supplement to the First Assessment Report.[106]

v. The United Nations held the 1992 Earth Summit in Rio de Janeiro, Brazil, a major, newsworthy gathering of 172 world governments, of which 116 sent their heads of state. The Summit resulted in the United Nations Framework Convention on Climate Change ("UNFCCC"), an international environmental treaty providing protocols for future negotiations aimed at

[103] N.Y. Times Editorial Board, *The White House and the Greenhouse*, N.Y. Times (May 9, 1989), http://www.nytimes.com/1989/05/09/opinion/the-white-house-and-thegreenhouse.html.

[104] *See* IPCC, *Reports*, ipcc.ch/reports.

[105] IPCC, *Climate Change: The IPCC Scientific Assessment* xi (1990), https://www.ipcc.ch/report/climate-change-the-ipcc-1990-and-1992-assessments.

[106] IPCC, *1992 IPCC Supplement to the First Assessment Report* (1992), https://www.ipcc.ch/report/climate-change-the-ipcc-1990-and-1992-assessments.

"stabiliz[ing] greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[107]

95. To perpetuate and maximize dependence on their fossil fuel products, Defendants embarked on a decades-long series of disinformation campaigns designed to stymie consumer and public understanding of climate change and the role of fossil fuel consumption in causing it.

96. Defendants' campaigns focused on concealing, discrediting, and/or misrepresenting information that tended to support decreasing consumption of fossil fuels, thereby preserving and inflating demand for Defendants' products and staving off the transition to a lower-carbon economy. The campaigns enabled Defendants to accelerate their business practice of exploiting fossil fuel reserves and to concurrently externalize the social and environmental costs of their fossil fuel products. Those activities directly contradicted Defendants' internal recognition that the science of anthropogenic climate change was clear and that profligate consumption of fossil fuels would result in dire consequences for the planet and communities like San Francisco.

97. In 1988, Joseph Carlson, an Exxon public affairs manager, stated in an internal memo that Exxon "is providing leadership through API in developing the petroleum industry position" on "the greenhouse effect."[108] He then went on to describe the "Exxon Position," which included two important messaging tenets among others: (1) "[e]mphasize the uncertainty in scientific conclusions regarding the potential enhanced Greenhouse Effect"; and (2) "[r]esist the overstatement and sensationalization [sic] of potential greenhouse effect which could lead to noneconomic development of nonfossil fuel resources."[109]

[107] United Nations, *United Nations Framework Convention on Climate Change* art. 2 (1992), https://unfccc.int/resource/docs/convkp/conveng.pdf.

[108] Memorandum from Joseph M. Carlson, *The Greenhouse Effect* (Aug. 3, 1988), https://assets.documentcloud.org/documents/3024180/1998-Exxon-Memo-on-the-Greenhouse-Effect.pdf.

[109] *Ibid.*

98. Reflecting on his time as an Exxon consultant in the 1980s, Professor Martin Hoffert, a former New York University physicist who researched climate change, expressed regret over Exxon's "climate science denial program campaign" in his sworn testimony before Congress:

> [O]ur research [at Exxon] was consistent with findings of the United Nations Intergovernmental Panel on Climate Change on human impacts of fossil fuel burning, which is that they are increasingly having a perceptible influence on Earth's climate. . . . If anything, adverse climate change from elevated CO_2 is proceeding faster than the average of the prior IPCC mild projections and fully consistent with what we knew back in the early 1980's at Exxon. . . . I was greatly distressed by the climate science denial program campaign that Exxon's front office launched around the time I stopped working as a consultant—but not collaborator—for Exxon. 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.[110]

99. Likewise, Shell "shaped a series of influential industry-backed publications that downplayed or omitted key risks; emphasized scientific uncertainties; and pushed for more fossil fuels, particularly coal."[111] In 1992, for instance, Shell had released a publication for wide external distribution purporting to describe the "Basic Scientific Facts" of the "Potential Augmented Greenhouse Effect."[112] This document downplayed the scientific consensus (that Shell internally acknowledged) by referring to the "relatively few established scientific fundamentals" regarding the causes of climate change.[113] It also misleadingly suggested that a "particular cause" of global warming was "difficult" to identify, even though Shell had identified the use of its products as a

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[110] *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://oversight.house.gov/legislation/hearings/examining-the-oil-industry-s-efforts-to-suppress-the-truth-about-climate-change.

[111] Matthew Green, *Lost Decade: How Shell Downplayed Early Warnings Over Climate Change*, DESMOG (Mar. 31, 2023), https://www.desmog.com/2023/03/31/lost-decade-how-shell-downplayed-early-warnings-over-climate-change/.

[112] Jan Kuyper, *Shell Group Planning, Business Environment Occasional Paper, Potential Augmented Greenhouse Effect: Basic Scientific Facts* (Sept. 1992), at 3, https://www.documentcloud.org/documents/24359060-1992-internal-shell-group-planning-report-potential-augmented-greenhouse-effect-and-depletion-of-the-ozone-layer.

[113] *Id.* at 5.

significant contributor to the greenhouse effect in the previous decade.[114] For example, in 1985, a Shell UK environmental scientist published an article laying out the scientific fact that "[b]urning of fossil fuels which have taken millions of years to form has effectively upset the balance [of the Carbon Cycle] leading to an increase in CO2 in the atmosphere."[115]

100. A 1994 Shell report entitled "The Enhanced Greenhouse Effect: A Review of the Scientific Aspects" similarly emphasized scientific uncertainty, noting, for example, that "the postulated link between any observed temperature rise and human activities has to be seen in relation to natural variability, which is still largely unpredictable."[116]

101. In 1996, Exxon released a publication called "Global Warming: Who's Right? Facts about a debate that's turned up more questions than answers." In the publication's preface, Exxon CEO Lee Raymond inaccurately stated that "taking drastic action immediately is unnecessary since many scientists agree there's ample time to better understand the climate system." The publication described the greenhouse effect as "unquestionably real and definitely a good thing," while ignoring the severe consequences that would result from the influence of the increased CO_2 concentration on the Earth's climate. Instead, it characterized the greenhouse effect as simply "what makes the earth's atmosphere livable." Directly contradicting Exxon's own internal knowledge and peer-reviewed science, the publication ascribed the rise in temperature since the late nineteenth century to "natural fluctuations that occur over long periods of time" rather than to the anthropogenic emissions that Exxon itself and other scientists had confirmed were responsible. The publication also falsely challenged the computer models that projected the future impacts of fossil fuel product consumption, including those developed by Exxon's own employees, as having been "proved to be inaccurate." The publication contradicted the numerous reports prepared by and circulated among Exxon's staff, and by API, stating that "the indications are that a warmer world would be far more benign than

[114] *Ibid.*

[115] T.G. Wilkinson, *Why and How to Control Energy Pollution: Can Harmonisation Work?*, 8 Conservation & Recycling 7, 19 (1985), https://www.documentcloud.org/documents/24359067-1985-03-why-and-how-to-control-energy-pollution-by-tg-wilkinson-shell.

[116] P. Langcake, Shell Internationale Petroleum, *The Enhanced Greenhouse Effect: A Review of the Scientific Aspects* (Dec. 1994), https://www.documentcloud.org/documents/4411099-Document11.html#document/p15/a411511.

many imagine . . . moderate warming would reduce mortality rates in the US, so a slightly warmer climate would be more healthful." Raymond concluded his preface by criticizing the basis for reducing consumption of his company's fossil fuel products as "drawing on bad science, faulty logic, or unrealistic assumptions"—despite the important role that Exxon's own scientists had played in compiling those same scientific underpinnings.[117]

102. Imperial Oil (Exxon) CEO Robert Peterson falsely denied the established connection between Defendants' fossil fuel products and anthropogenic climate change in the Summer 1998 Imperial Oil Review, "A Cleaner Canada":

> [T]his issue [referring to climate change] has absolutely nothing to do with pollution and air quality. Carbon dioxide is not a pollutant but an essential ingredient of life on this planet. . . . [T]he question of whether or not the trapping of 'greenhouse' gases will result in the planet's getting warmer . . . has no connection whatsoever with our day-to-day weather.
>
> There is absolutely no agreement among climatologists on whether or not the planet is getting warmer, or, if it is, on whether the warming is the result of man-made factors or natural variations in the climate. . . . I feel very safe in saying that the view that burning fossil fuels will result in global climate change remains an unproved hypothesis.[118]

103. Exxon and Mobil (Exxon) paid for a series of "advertorials," advertisements located in the editorial section of *The New York Times* and meant to look like editorials rather than paid ads. These ads discussed various aspects of the public discussion of climate change and sought to undermine the justifications for tackling greenhouse gas emissions as unsettled science. For example, the 1993 Mobil advertorial below argued that "what's wrong with so much of the global warming rhetoric" is "[t]he lack of solid scientific data," and quoted a purportedly neutral scientific expert who insisted that "'there is a large amount of empirical evidence suggesting that the apocalyptic vision is in error and that the highly touted greenhouse disaster is most improbable.'"[119] It also quoted

[117] Exxon Corp., *Global Warming: Who's Right?* (1996), https://www.documentcloud.org/documents/2805542-Exxon-Global-Warming-Whos-Right.html.

[118] Robert Peterson, *A Cleaner Canada in Imperial Oil Review* (1998), https://www.desmogblog.com/sites/beta.desmogblog.com/files/A%20Cleaner%20Canada%20Imperial%20Oil.pdf.

[119] Mobil, *Apocalypse No* (1993) New York Times, A19 (February 25, 1993), https://www.documentcloud.org/documents/357243-1993-2-25-mob-nyt-apocalypse-no.

another purportedly neutral scientist who asserted that "the net impact [of a modest warming] may yet be beneficial."

Apocalypse no

For the first half of 1992, America was inundated by the media with dire predictions of global warming catastrophes, all of which seemed to be aimed at heating up the rhetoric from the Earth Summit in Rio de Janeiro last June.

Unfortunately, the media hype proclaiming that the sky was falling did not properly portray the consensus of the scientific community. After the Earth Summit, there was a noticeable lack of evidence of the sky actually falling and subsequent colder than normal temperatures across the country cooled the warming hysteria as well.

Everybody, of course, remembers the Earth Summit and the tons of paper used up in reporting on it—paper now buried in landfills around the world. But few people ever heard of a major document issued at the same time and called the "Heidelberg Appeal." The reason? It just didn't make "news."

Perhaps that is because the Appeal urged Summit attendees to avoid making important environmental decisions based on "pseudo-scientific arguments or false and non-relevant data."

The Heidelberg Appeal was issued initially by some 264 scientists from around the world, including 52 Nobel Prize winners. Today, the Appeal carries the signatures of more than 2,300 scientists—65 of them Nobel Prize winners—from 79 countries. If nothing else, its message is illustrative of what's wrong with so much of the global warming rhetoric. The lack of solid scientific data.

Scientists can agree on certain facts pertaining to global warming. First, the greenhouse effect is a natural phenomenon; it accounts for the moderate temperature that makes our planet habitable. Second, the concentration of greenhouse gases (mainly carbon dioxide) has increased and there has been a slight increase in global temperatures over the past century. Finally, if present trends continue, carbon dioxide levels will double over the next 50 to 100 years.

Controversy arises when trying to link past changes in temperatures to increased concentrations of greenhouse gases. And it arises again when climate prediction models are used to conclude Earth's temperature will climb drastically in the next century and—based on such models—to propose policy decisions that could drastically affect the economy.

According to Arizona State University climatologist Dr. Robert C. Balling in his book, *The Heated Debate* (San Francisco: Pacific Research Institute for Public Policy, 1992), until knowledge of the interplay between oceans and the atmosphere improves, "model predictions must be treated with considerable caution." Moreover, models don't simulate the complexity of clouds, nor do they deal adequately with sea ice, snow or changes in intensity of the sun's energy.

And they don't stand up to reality testing. Comparing actual temperatures over the last 100 years against model calculations, the models predicted temperature increases higher than those that actually occurred. Moreover, most of the earth's temperature increase over the last century occurred before 1940. Yet, the real build-up in man-made CO_2 didn't occur until after 1940. Temperatures actually fell between 1940 and 1970.

Sifting through such data, Dr. Balling has concluded, "there is a large amount of empirical evidence suggesting that the apocalyptic vision is in error and that the highly touted greenhouse disaster is most improbable."

Other scientists have an even more interesting viewpoint. Notes atmospheric physicist S. Fred Singer, president of the Washington, D.C.-based Science & Environmental Policy Project, "the net impact [of a modest warming] may well be beneficial."

All of which would seem to suggest that the jury's still out on whether drastic steps to curb CO_2 emissions are needed. It would seem that the phenomenon—and its impact on the economy—are important enough to warrant considerably more research before proposing actions we may later regret.

Perhaps the sky isn't falling, after all.

Mobil®

Figure 7: 1993 Mobil Advertorial

The first of those purportedly neutral scientific experts, Robert C. Balling, acknowledged five years after the advertorial ran that he had received $408,000 in research funding from the fossil fuel industry over the past decade, including from Exxon.[120] The second, S. Fred Singer, was not a climatologist, and had previously been funded by tobacco companies to spread doubt about the scientific claim that exposure to second-hand smoke causes cancer.[121]

104. Many other Exxon and Mobil advertorials falsely or misleadingly characterized the state of climate science research to the readership of *The New York Times*' op-ed page. A sample of these untruthful statements includes:

- "We 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."[122]

- "[G]reenhouse-gas emissions, which have a warming effect, are offset by another combustion product—particulates—which leads to cooling."[123]

- "Even after two decades of progress, climatologists are still uncertain how—or even if—the buildup of man-made greenhouse gases is linked to global warming. It could be at least a decade before climate models will be able to link greenhouse warming unambiguously to human actions. Important answers on the science lie ahead."[124]

- "[I]t is impossible for scientists to attribute the recent small surface temperature increases to human causes."[125]

- "Within a decade, science is likely to provide more answers on what factors affect global warming, thereby improving our decision-making. We

[120] DeSmog, *Robert C. Balling, Jr.*, https://www.desmog.com/robert-c-balling-jr/.

[121] Naomi Oreskes & Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*, 150–54 (Bloomsbury Press, 1st ed. 2011).

[122] Mobil, *Climate Change: A Prudent Approach*, N.Y. Times (Nov. 13, 1997), https://www.documentcloud.org/documents/705548-mob-nyt-1997-11-13-climateprudentapproach.html.

[123] Mobil, *Less Heat, More Light on Climate Change*, N.Y. Times (July 18, 1996), https://www.documentcloud.org/documents/705544-mob-nyt-1996-jul-18-lessheatmorelight.html.

[124] Mobil, *Climate Change: Where We Come Out*, N.Y. Times (Nov. 20, 1997), https://www.documentcloud.org/documents/705549-mob-nyt-1997-11-20-ccwherewecomeout.html.

[125] ExxonMobil, *Unsettled Science* (Mar. 23, 2000), reproduced in https://www.theguardian.com/environment/2021/nov/18/the-forgotten-oil-ads-that-told-us-climate-change-was-nothing.

> just don't have this information today. Answers to questions about climate change will require more reliable measurements of temperature at many places on Earth, better understanding of clouds and ocean currents along with greater computer power."[126]

105. A peer-reviewed quantitative analysis of Exxon's climate communications between 1989 and 2004 found that, while 83% of the company's peer-reviewed papers and 80% of its internal documents acknowledged the reality and human origins of climate change, 81% of its advertorials communicated doubt about those conclusions.[127] Put differently, Exxon demonstrated a clear tendency to contradict its own peer-reviewed research in statements meant for lay audiences. Based on this "statistically significant" discrepancy between internal and external communications, the authors concluded that "ExxonMobil misled the public."[128]

106. Defendants also worked jointly through industry and front groups such as API, ICE, and the GCC to fund, conceive, plan, and carry out sustained and widespread campaigns of denial and disinformation about the existence of climate change and their products' contribution to it, despite their own knowledge and the growing national and international scientific consensus about the hazards of doing so. The campaigns included a long-term pattern of direct misrepresentations and material omissions to consumers, as well as a plan to influence consumers indirectly by affecting public opinion through the mass dissemination of misleading research. Although Defendants were competitors in the marketplace, they combined and collaborated with each other and with industry and front groups such as API, ICE, and the GCC on these public campaigns to misdirect and stifle public knowledge in order to inflate consumer demand for fossil fuels. The efforts included promoting hazardous fossil fuel products through advertising campaigns that failed to warn of the existential risks associated with the use of those products, and that were designed to influence

[126] Mobil, *Science: What We Know and Don't Know*, (1997), reproduced in https://www.theguardian.com/environment/2021/nov/18/the-forgotten-oil-ads-that-told-us-climate-change-was-nothing.

[127] Geoffrey Supran & Naomi Oreskes, *Assessing ExxonMobil's Climate Change Communications (1977–2014)*, 12 *Envtl. Research Letters, IOP Publishing Ltd.* 12 (2017), https://iopscience.iop.org/article/10.1088/1748-9326/aa815f/pdf.

[128] *Ibid.*

consumers to continue using Defendants' fossil fuel products irrespective of those products' damage to communities and the environment.

107. One of the key organizations formed by Defendants to coordinate the fossil fuel industry's response to the world's growing awareness of climate change was the International Petroleum Industry Environmental Conservation Association ("IPIECA"). In 1987, the IPIECA formed a "Working Group on Global Climate Change" chaired by Duane LeVine, Exxon's manager for science and strategy development. The Working Group also included Brian Flannery from Exxon, Leonard Bernstein from Mobil, Terry Yosie from API, and representatives from BP, Shell, and Texaco (Chevron). In 1990, the Working Group sent a strategy memo created by LeVine to hundreds of oil companies around the world, including Defendants. This memo explained that, to forestall a global shift away from burning fossil fuels for energy, the industry should emphasize uncertainties in climate science and the need for further research.[129]

108. In 1991, the Information Council for the Environment (ICE), whose members included affiliates, predecessors and/or subsidiaries of Defendants, launched a national climate change science denial campaign with full-page newspaper ads, radio commercials, a public relations tour schedule, "mailers," and research tools to measure campaign success. Included among the campaign strategies was to "reposition global warming as theory (not fact)." Its target audience included older less-educated males who are "predisposed to favor the ICE agenda, and likely to be even more supportive of that agenda following exposure to new info."[130]

109. A goal of ICE's advertising campaign was to change public opinion and consumer perceptions of climate risk. A memo from Richard Lawson, president of the National Coal Association, a predecessor to the National Mining Association, warned, "Public opinion polls reveal

[129] Benjamin A. Franta, *Big Carbon's Strategic Response to Global Warming, 1950-2020*, 140 (2022), https://purl.stanford.edu/hq437ph9153.

[130] Union of Concerned Scientists, *Deception Dossier #5: Coal's "Information Council on the Environment" Sham* (1991), http://www.ucsusa.org/sites/default/files/attach/2015/07/Climate-Deception-Dossier-5_ICE.pdf.

that 60% of the American people already believe global warming is a serious environmental problem. Our industry cannot sit on the sidelines in this debate."[131]

110. The following images are examples of ICE-funded print advertisements challenging the validity of climate science and intended to obscure the scientific consensus on anthropogenic climate change in order to inflate consumer demand for fossil fuels:[132]

Figure 8: Information Council for the Environment Advertisements

111. The Global Climate Coalition (GCC), on behalf of Defendants and other fossil fuel companies, spent millions of dollars on deceptive advertising campaigns and misleading material to discredit climate science and generate public uncertainty around the climate debate, and thereby inflate consumer demand for fossil fuels.[133] The GCC operated between 1989 and 2001. Its founding members included Defendants Exxon, Shell, Phillips Petroleum Company (ConocoPhillips), and API. Defendants BP and Chevron also participated as members of the GCC. William O'Keefe,

[131] Naomi Oreskes, *My Facts Are Better Than Your Facts: Spreading Good News About Global Warming* (2010), in Peter Howlett et al., *How Well Do Facts Travel?:* The Dissemination of Reliable Knowledge 136–66 (Cambridge University Press, 2011).

[132] Union of Concerned Scientists, *Deception Dossier #5: Coal's "Information Council on the Environment" Sham* at 47–49 (1991), http://www.ucsusa.org/sites/default/files/attach/2015/07/Climate-Deception-Dossier-5_ICE.pdf.

[133] *Ibid.*

former president of the GCC, was also a former executive of API.[134] GCC's position on climate change contradicted decades of its members' internal scientific reports by asserting that natural trends, not human combustion of fossil fuels, was responsible for rising global temperatures:

> The GCC believes that the preponderance of the evidence indicates that most, if not all, of the observed warming is part of [a] natural warming trend which began approximately 400 years ago. If there is an anthropogenic component to this observed warming, the GCC believes that it must be very small and must be superimposed on a much larger natural warming trend.[135]

112. The GCC's promotion of overt climate change skepticism also contravened its internal assessment that such theories lacked scientific support. In December 1995, the GCC's Science and Technology Advisory Committee ("GCC-STAC"), whose members included employees of Mobil Oil Corporation (an Exxon predecessor) and API, drafted a primer on the science of global warming for GCC members. The primer concluded that the GCC's contrarian theories "do not offer convincing arguments against the conventional model of greenhouse gas emission-induced climate change." However, the GCC excluded this section from the publicly released version of the report.[136] Nonetheless, for years afterward, the GCC and its members continued to tout their contrarian theories about global warming, even though the GCC had admitted internally these arguments were invalid. Between 1989 and 1998, the GCC spent $13 million on one ad campaign to obfuscate the public's understanding of climate science and undermine its trust in climate scientists.[137] For example, the

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[134] Jeff Nesmith, *Industry Promotes Skeptical View of Global Warming*, Cox News Service, May 28, 2003, http://www.heatisonline.org/contentserver/objecthandlers/index.cfm ?ID=4450&Method=Full.

[135] Global Climate Coalition, *Global Climate Coalition: An Overview* 2 (Nov. 1996), http://www.climatefiles.com/denial-groups/global-climatecoalition-collection/1996-global-climate-coalition-overview/.

[136] Memorandum from Gregory J. Dana, Assoc. of Int'l Auto. Mfrs., to AIAM Technical Committee, *Global Climate Coalition (GCC) - Primer on Climate Change Science - Final Draft* (Jan. 18, 1996), http://www.webcitation.org/6FyqHawb9.

[137] Wendy E. Franz, Kennedy School of Government, Harvard University, *Science, Skeptics and Non-State Actors in the Greenhouse*, ENRP Discussion Paper E-98-18 13 (Sept. 1998), https://www.belfercenter.org/sites/default/files/legacy/files/Science%20Skeptics%20and%20Non-State%20Actors%20in%20the%20Greenhouse%20-%20E-98-18.pdf.

GCC distributed a video to hundreds of journalists, which claimed that carbon dioxide emissions would increase crop production and feed the hungry people of the world.[138]

113. In a 1994 public report, the GCC stated that "observations have not yet confirmed evidence of global warming that can be attributed to human activities," and that "[t]he claim that serious impacts from climate change have occurred or will occur in the future simply has not been proven."[139] In 1994, the GCC Board of Directors was composed of high-level executives from API, Exxon, Phillips Petroleum Company (ConocoPhillips), and Texaco (Chevron). Representatives from Shell, Amoco (BP), and BP were also GCC members at that time.[140] In 1995, the GCC published a booklet called "Climate Change: Your Passport to the Facts," which stated, "While many warnings have reached the popular press about the consequences of a potential man-made warming of the Earth's atmosphere during the next 100 years, there remains no scientific evidence that such a dangerous warming will actually occur."[141] In 1995, GCC's Board of Directors included high-level executives from Texaco (Chevron), American Petroleum Institute, ARCO, and Phillips Petroleum Company.[142]

114. In 1997, William O'Keefe, chairman of the GCC and executive vice president of API, falsely wrote in a *Washington Post* op-ed, "[c]limate scientists don't say that burning oil, gas, and coal is steadily warming the earth."[143] This statement contradicted the established scientific

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[138] The Center for Media and Democracy, *Global Climate Coalition*, Source Watch, *http*://www.sourcewatch.org/index.php/Global_Climate_Coalition.

[139] GCC, *Issues and Options: Potential Global Climate Change, Climate Files* (1994), http://www.climatefiles.com/denial-groups/global-climate-coalition-collection/1994-potential-global-climate-change-issues.

[140] 1994 GCC Board Member List and Background Information, Climate Investigations Center, https://www.climatefiles.com/denial-groups/global-climate-coalition-collection/1994-board-member-list-general-info/.

[141] GCC, *Climate Change: Your Passport to the Facts, Climate Files* (1995), http://www.climatefiles.com/denial-groups/global-climate-coalition-collection/1995-climate-change-facts-passport.

[142] 1995 GCC IRS 1024 and Attachments, Climate Investigations Center (1995), https://www.documentcloud.org/documents/5798254-GCC-IRS-1023#document/p17.

[143] William O'Keefe, *A Climate Policy, in The Washington Post* (July 5, 1997), https://www.washingtonpost.com/archive/opinions/1997/07/05/a-climate-policy/6a11899a-c020-4d59-a185-b0e7eebf19cc/.

consensus as well as Defendants' own knowledge. Yet Defendants did nothing to correct the public record, and instead continued to fund the GCC's anti-scientific climate skepticism.

115. In addition to publicly spreading false and misleading information about the climate science consensus, the GCC also sought to undermine credible climate science from within the IPCC. After becoming a reviewer of IPCC's Second Assessment Report in 1996, the GCC used its position to accuse the convening author of a key chapter in the Report of modifying its conclusions. The GCC claimed that the author, climatologist Ben Santer, had engaged in "scientific cleansing" that "understate[d] uncertainties about climate change causes and effect . . . to increase the apparent scientific support for attribution of changes to climate to human activities."[144] The GCC also arranged to spread the accusation among reporters, editors of scientific journals, and even the op-ed page of the *Wall Street Journal*.[145] This effort "was widely perceived to be an attempt on the part of the GCC to undermine the credibility of the IPCC."[146]

116. In the late 1990s, Defendants shifted away from openly denying anthropogenic warming toward peddling a subtler form of climate change skepticism. Defendants became alarmed by significant legal judgments Big Tobacco now faced as a result of decades spent publicly denying the health risks of smoking cigarettes, with a Shell employee explaining that the company "didn't want to fall into the same trap as the tobacco companies who have become trapped in all their lies."[147] Defendants began to shift their communications strategy, claiming they had accepted climate science all along.[148] Several large fossil fuel companies, including BP and Shell, left the GCC (although all Defendants remained members of API).[149] At this point in time, Defendants publicly claimed to

[144] Franz, *supra* note 137, at 14.

[145] Naomi Oreskes & Erik Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*, New York: Bloomsbury Press 205–13 (2011). *See also* S. Fred Singer, *Climate Change and Consensus*, Science vol. 271, no. 5249 (Feb. 2, 1996); Frederick Seitz, *A Major Deception on 'Global Warming', Wall Street Journal* (June 12, 1996).

[146] Franz, *supra* note 137, at 15.

[147] Nathaniel Rich, *Losing Earth: A Recent History*, London: Picador 186 (2020).

[148] Franta (2022), *supra* note 129, at 170.

[149] *Id.* at 177.

accept the reality that the climate is changing (or Earth is warming) and that climate change is primarily caused by human activities.

117. Despite the shift in public messaging, Defendants surreptitiously continued to organize and fund programs designed to deceive the public about the weight and veracity of the climate science consensus. In 1998, API convened a Global Climate Science Communications Team ("GCSCT") whose members representatives from Exxon, Chevron, and API. There were no scientists on the "Global Climate Science Communications Team." Steve Milloy (a key player in the tobacco industry's deception campaigns) and his organization, The Advancement of Sound Science Coalition ("TASSC"), were also founding members of the GCSCT. TASSC was a fake grassroots citizen group created by the tobacco industry to sow uncertainty by discrediting the scientific link between exposure to second-hand cigarette smoke and increased rates of cancer and heart disease. Philip Morris launched TASSC on the advice of its public relations firm, which advised Philip Morris that the tobacco company itself would not be a credible voice on the issue of smoking and public health. TASSC, through API and with the approval of Defendants, also became a front group for the fossil fuel industry beyond its roll in GCSCT, using the same tactics it had honed while operating on behalf of tobacco companies to spread doubt about climate science. Although TASSC posed as a grassroots group of concerned citizens, it received significant funding from Defendants. For example, between 2000 and 2004, Exxon donated $50,000 to Milloy's Advancement of Sound Science Center; and an additional $60,000 to the Free Enterprise Education Institute and $50,000 to the Free Enterprise Action Institute, both of which were registered to Milloy's home address.[150] The GCSCT, including TASSC, represented a continuation of Defendants' concerted actions to sow doubt and confusion about climate change in order to inflate consumer demand for fossil fuels.

118. The GCSCT continued Defendants' efforts to expand the market for fossil fuels by convincing the public that the scientific basis for climate change was in doubt. The multi-million-dollar, multi-year plan, among other elements, sought to: (a) "[d]evelop and implement a national

[150] Union of Concerned Scientists, *Smoke, Mirrors & Hot Air: How ExxonMobil Uses Big Tobacco's Tactics to Manufacture Uncertainty on Climate Science* (July 16, 2007), https://www.ucsusa.org/resources/smoke-mirrors-hot-air.

media relations program to inform the media about uncertainties in climate science to generate national, regional, and local media coverage on the scientific uncertainties"; (b) "[d]evelop a global climate science information kit for media including peer-reviewed papers that undercut the 'conventional wisdom' on climate science"; (c) "[p]roduce . . . a steady stream of op-ed columns"; and (d) "[d]evelop and implement a direct outreach program to inform and educate members of Congress . . . and school teachers/students about uncertainties in climate science"[151]—a blatant attempt to deceive consumers and the public in order to ensure a continued and unimpeded market for their fossil fuel products.

119. Exxon, Chevron, and API directed and contributed to the development of the plan, which plainly set forth the criteria by which the contributors would know when their efforts to manufacture doubt had been successful. "Victory," they wrote, "will be achieved when . . . average citizens 'understand' (recognize) uncertainties in climate science" and "recognition of uncertainties becomes part of the 'conventional wisdom.'"[152] In other words, the plan was part of Defendants' goal to use disinformation to plant doubt about the reality of climate change in an effort to inflate consumer demand for their fossil fuel products and their large profits.

120. In furtherance of the strategies described in these memoranda, Defendants made misleading statements to consumers about climate change, the relationship between climate change and their fossil fuel products, and the urgency of the problem. Defendants made these statements in public fora and in advertisements published in newspapers and other media with substantial circulation to San Francisco and California, including regional and national publications such as *The San Francisco Chronicle, The New York Times, The Wall Street Journal,* and *The Washington Post*.

121. Another key strategy in Defendants' efforts to discredit scientific consensus on climate change and the IPCC was to bankroll unqualified or unscrupulous scientists to advance fringe conclusions about climate change. These scientists obtained part or all of their research budget from

[151] Email from Joe Walker to Global Climate Science Team, *Draft Global Climate Science Communications Plan* (Apr. 3, 1998), https://assets.documentcloud.org/documents/784572/api-global-climate-science-communications-plan.pdf.

[152] *Ibid.*

Defendants directly or through Defendant-funded organizations like API.[153] During the early- to mid-1990s, Exxon directed some of this funding to Dr. Fred Seitz, Dr. Fred Singer, and/or Seitz and Singer's Science and Environmental Policy Project ("SEPP") in order to launch repeated attacks on mainstream climate science and IPCC conclusions, even as Exxon scientists participated in the IPCC.[154] Seitz and Singer were not climate scientists. Rather, they and SEPP had previously been paid by the tobacco industry to create doubt in the public mind about the hazards of smoking.[155]

122. Industry-funded scientists frequently failed to disclose their fossil fuel industry underwriters.[156] At least one, Dr. Wei-Hock Soon, contractually agreed to allow donors to review his research before publication, and his housing institution agreed not to disclose the funding arrangement without prior permission from his fossil fuel donors.[157] Between 2001 and 2012, various fossil fuel interests, including Exxon and API, paid Soon over $1.2 million.[158] "Dr. Soon, in correspondence with his corporate funders, described many of his scientific papers as 'deliverables' that he completed in exchange for their money."[159] His Defendant-funded research includes articles in scientific journals accusing the IPCC of overstating the negative environmental effects of carbon dioxide emissions and arguing that the sun is responsible for recent climate trends. Soon was the lead author of a 2003 article that argued that the climate had not changed significantly. The article was

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[153] *E.g.*, Willie Soon & Sallie Baliunas, *Proxy Climatic and Environmental Changes of the Past 1000 Years*, 23 Climate Rsch. 88, 105 (Jan. 31, 2003), http://www.int-res.com/articles/cr2003/23/c023p089.pdf.

[154] Union of Concerned Scientists (2007), *supra* note 150.

[155] The Center for Media and Democracy, *S. Fred Singer*, Source Watch, http://www.sourcewatch.org/index.php/S._Fred_Singer ; The Center for Media and Democracy, *Frederick Seitz*, http://www.sourcewatch.org/ index.php/Frederick_Seitz.

[156] *E.g.*, *Smithsonian Statement: Dr. Wei-Hock (Willie) Soon, Smithsonian* (Feb. 26, 2015), https://web.archive.org/web/20181105223030/https://www.si.edu/newsdesk/releases/smithsonian-statement-dr-wei-hock-willie-soon.

[157] Union of Concerned Scientists, *Climate Deception Dossier #1: Dr. Wei-Hock Soon's Smithsonian Contracts*, (July 2015), https://www.ucsusa.org/sites/default/files/attach/2015/07/The-Climate-Deception-Dossiers.pdf. [https://perma.cc/JL2V-XYGL] & https://s3.amazonaws.com/ucs-documents/global-warming/Climate-Deception-Dossier-1_Willie-Soon.pdf.

[158] Justin Gillis & John Schwartz, Deeper Ties to Corporate Cash for Doubtful Climate Researcher, *New York Times* (Feb. 21, 2015), https://www.nytimes.com/2015/02/22/us/ties-to-corporate-cash-for-climate-change-researcher-Wei-Hock-Soon.html?mcubz=1.

[159] *Ibid.*

widely promoted by other denial groups funded by Exxon, including via "Tech Central Station," a website supported by Exxon.[160] Soon published other bogus "research" in 2009, attributing global warming to solar activity, for which Exxon paid him $76,106.[161] This 2009 grant was made several years after Exxon had publicly committed not to fund climate change deniers.[162]

123. Defendants intended for the papers of authors they funded to be distributed to and relied on by consumers when buying Defendants' products, including by consumers in San Francisco.

124. Defendants have also funded dozens of think tanks, front groups, and dark money foundations pushing climate change denial. These include the Competitive Enterprise Institute, the Heartland Institute, Frontiers for Freedom, Committee for a Constructive Tomorrow, and Heritage Foundation. According to the Union of Concerned Scientists, from 1998 to 2017, Exxon spent over $36 million funding numerous organizations misrepresenting the scientific consensus[163] that fossil fuel products were causing climate change, sea level rise, and injuries to San Francisco, among other communities. Several Defendants have been linked to other groups that undermine the scientific basis linking fossil fuel products to climate change and sea level rise, including the Frontiers of Freedom Institute and the George C. Marshall Institute.

125. Philip Cooney, an attorney at API from 1996 to 2001, testified at a 2007 Congressional hearing that it was "typical" for API to fund think tanks and advocacy groups that minimized fossil fuels' role in causing climate change.[164]

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[160] Union of Concerned Scientists (2007), *supra* note 150, at 13–14.

[161] *Willie Soon FOIA Grants Chart*, https://www.documentcloud.org/documents/682765-willie-soon-foia-grants-chart-02-08-2011.html.

[162] http://www.socialfunds.com/shared/reports/1211896380_ExxonMobil_2007_Corporate_Citizenship_Report.pdf.

[163] Union of Concerned Scientists, ExxonMobil Foundation & Corporate Giving to Climate Change Denier & Obstructionist Organizations (1998–2017), https://www.ucsusa.org/sites/default/files/attach/2019/ExxonMobil-Worldwide-Giving-1998-2017.pdf.

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

126. Creating a false perception of disagreement in the scientific community (despite the consensus that its own scientists, experts, and managers had previously acknowledged) disrupted vital channels of communication between scientists and the public. A 2007 Yale University-Gallup poll found that only 48% of Americans believed that there was a consensus among the scientific community that global warming was happening, and 40% believed there was a lot of 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] Further, it found that 33% of Americans believe that climate change is mostly due to natural causes, compared to the 97% of peer-reviewed papers that acknowledge that global warming is real and at least partly human-caused.[167] The lack of progress, and even regress, in the public understanding of climate science over this period—during which Defendants professed to accept the conclusions of mainstream climate science—testifies to the success of Defendants' deception campaign in thwarting dissemination of accurate scientific expertise to the public regarding the effects fossil fuel consumption.

127. As a result of Defendants' tortious, false, and misleading conduct, consumers of Defendants' fossil fuel products in San Francisco and elsewhere, have been deliberately and unnecessarily deceived about: the role of fossil fuel products in causing global warming, sea level rise, disruptions to the hydrologic cycle, and increased extreme precipitation, heat waves, and other consequences of the climate crisis; the acceleration of global warming since the mid-twentieth century and the continuation thereof; and the fact that the continued increase in fossil fuel consumption creates severe environmental threats and significant economic costs for coastal communities, including San Francisco. Consumers in San Francisco and elsewhere have also been

[165] *American Opinions on Global Warming: A Yale/Gallup/Clearvision Poll*, Yale Program on Climate Change Communication (July 31, 2007), http://climatecommunication.yale.edu/publications/american-opinions-on-global-warming.

[166] Leiserowitz et al., *Climate Change in the American Mind* (Yale Program on Climate Change Comm. & Geo. Mason U., Ctr. for Climate Change Comm eds., Oct. 2015), https://climatecommunication.yale.edu/wp-content/uploads/2015/11/Climate-Change-American-Mind-October-20151.pdf.

[167] *Id.* at 7.

deceived about the depth and breadth of the state of the scientific evidence on anthropogenic climate change and, in particular, about the strength of the scientific consensus demonstrating the role of fossil fuels in causing both climate change and a wide range of potentially destructive impacts, including sea level rise, disruptions to the hydrologic cycle, extreme precipitation, heat waves, and associated consequences.

D. In Contrast to Public Misrepresentations About the Risks of Climate Change, Defendants' Internal Actions Demonstrate Their Awareness of and Intent to Profit from Uses of Fossil Fuel Products They Knew Were Hazardous.

128. In contrast to their public-facing efforts challenging the validity of the scientific consensus about anthropogenic climate change, Defendants' acts and omissions evidence their internal acknowledgement of the reality of climate change and its likely consequences. Those actions include, but are not limited to, making multi-billion-dollar infrastructure investments for their own operations that acknowledge the reality of coming anthropogenic climate change-related change. Those investments included (among others): raising offshore oil platforms to protect against sea level rise; reinforcing offshore oil platforms to withstand increased wave strength and storm severity; developing technology and infrastructure to extract, store, and transport fossil fuels in a warming arctic environment; and developing and patenting designs for equipment intended to extract crude oil and/or natural gas in areas previously unreachable because of the presence of polar ice sheets.[168]

129. For example, oil and gas reserves in the Arctic that were not previously reachable due to sea ice are becoming increasingly reachable as sea ice thins and melts due to climate change.[169] In 1973, Exxon obtained a patent for a cargo ship capable of breaking through sea ice[170] and for an oil tanker[171] designed specifically for use in previously unreachable areas of the Arctic.

[168] Amy Lieberman & Susanne Rust, *Big Oil braced for global warming while it fought regulations*, *L.A. Times* (Dec. 31, 2015), https://graphics.latimes.com/oil-operations.

[169] Henderson & Loe, The Prospects and Challenges for Arctic Oil Development, Oxford Institute for Energy Studies (Nov. 2014) p. 1, https://www.oxfordenergy.org/publications/the-prospects-and-challenges-for-arctic-oildevelopment/.

[170] ExxonMobil Research Engineering Co., *Patent US3727571A: Icebreaking cargo vessel* (granted Apr. 17, 1973), https://www.google.com/patents/US3727571.

[171] ExxonMobil Research Engineering Co., *Patent US3745960A: Tanker vessel* (granted July 17, 1973), https://www.google.com/patents/US3745960.

130. In 1974, Chevron obtained a patent for a mobile arctic drilling platform designed to withstand significant interference from lateral ice masses,[172] allowing for drilling in areas with increased ice floe movement due to elevated temperature.

131. That same year, Texaco (Chevron) worked toward obtaining a patent for a method and apparatus for reducing ice forces on a marine structure prone to being frozen in ice through natural weather conditions,[173] allowing for drilling in previously unreachable Arctic areas that would become seasonally accessible.

132. In 1984, Shell obtained a patent for an Arctic offshore platform adapted for conducting operations in the Beaufort Sea, an area that previously was largely unreachable because of ice but has become increasingly accessible as polar ice has melted.[174]

133. As described below, in 1989, Norske Shell, Royal Dutch Shell's Norwegian subsidiary, altered designs for a natural gas platform planned for construction in the North Sea to account for anticipated sea level rise. Those design changes were ultimately carried out by Shell's contractors, adding substantial costs to the project.[175]

i. The Troll natural gas and oil field, off the Norwegian coast in the North Sea, was proven to contain large natural oil and gas deposits in 1979, shortly after Norske Shell was approved by Norwegian oil and gas regulators to operate a portion of the field.

ii. In 1986, the Norwegian parliament granted Norske Shell authority to complete the first development phase of the Troll field gas deposits, and Norske Shell began designing the "Troll A" gas platform, with the intent to begin operation of the platform in approximately 1995. Based on the very large size of the gas deposits in the Troll field, the Troll A platform was projected to operate for approximately 70 years.

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[172] Chevron Research & Technology Co., *Patent US3831385A: Arctic offshore platform* (granted Aug. 27, 1974), https://www.google.com/patents/US3831385.

[173] Texaco Inc., *Patent US3793840A: Mobile, arctic drilling and production platform* (granted Feb. 26, 1974), https://www.google.com/patents/US3793840.

[174] Shell Oil Co., *Patent US4427320A: Arctic offshore platform* (granted Jan. 24, 1984), https://www.google.com/patents/US4427320.

[175] *Greenhouse Effect: Shell Anticipates a Sea Change*, *N.Y. Times* (Dec. 20, 1989), http://www.nytimes.com/1989/12/20/business/greenhouse-effect-shell-anticipates-a-sea-change.html.

iii. The platform was originally designed to stand approximately 100 feet above sea level—the amount necessary to stay above waves in a once-in-a-century strength storm.

iv. In 1989, Shell engineers revised their plans to increase the above-water height of the platform by 3 to 6 feet, specifically to account for higher anticipated average sea levels and increased storm intensity due to global warming over the platform's 70-year operational life.[176]

v. Shell projected that the additional 3 to 6 feet of above-water construction would increase the cost of the Troll A platform by as much as $40 million.

134. In 1989, Esso Resources Canada (Exxon) commissioned a report on the impacts 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.[177] It reported that "large zones of the Mackenzie Valley could be affected dramatically by climatic change" and that "the greatest concern in Norman Wells [oil town in North West Territories, Canada] should be the changes in permafrost that are likely to occur under conditions of climate warming."[178] The report concluded that, in light of climate models showing a "general tendency towards warmer and wetter climate," operation of those facilities would be compromised by increased precipitation, increase in air temperature, changes in permafrost conditions, and, significantly, sea level rise and erosion damage.[179] The authors recommended factoring those eventualities into future development planning and also warned that "a rise in sea level could cause increased flooding and erosion damage on Richards Island."

135. In the mid-1990s, Exxon, Shell, and Imperial Oil (Exxon) jointly undertook the Sable Offshore Energy Project in Nova Scotia. The project's own Environmental Impact Statement declared, "The impact of a global warming sea level rise may be particularly significant in Nova Scotia. The long-term tide gauge records at a number of locations along the N.S. coast have shown

[176] *Ibid.*; Lieberman & Rust, *supra* note 168.

[177] *See* Stephen Lonergan & Kathy Young, *An Assessment of the Effects of Climate Warming on Energy Developments in the Mackenzie River Valley and Delta, Canadian Arctic*, 7 Energy Exploration & Exploitation 359–81 (1989).

[178] *Id.* at 369, 376.

[179] *Id.* at 360, 377–78.

sea level has been rising over the past century. . . . For the design of coastal and offshore structures, an estimated rise in water level, due to global warming, of 0.5 m [1.64 feet] may be assumed for the proposed project life (25 years)."[180]

E. Defendants Slowed the Development of Alternative Energy Sources and Knowingly Exacerbated the Costs of Adapting to and Mitigating the Adverse Impacts of the Climate Crisis.

136. As greenhouse gas pollution accumulates in the atmosphere, some of which does not dissipate for potentially thousands of years (namely CO_2), climate changes and consequent adverse environmental changes compound, and their frequencies and magnitudes increase. As those adverse environmental changes compound and their frequencies and magnitudes increase, so too do the physical, environmental, economic, and social injuries that result from them.

137. By sowing doubt about the future consequences of unrestricted fossil fuel consumption, Defendants' deception campaign successfully delayed the transition to alternative energy sources, which Defendants forecasted could penetrate half of a competitive energy market in 50 years if allowed to develop unimpeded. This delay caused emission of huge amounts of avoidable greenhouse gases, and has increased the magnitude and cost to address environmental harms, including in San Francisco, that have already occurred or are locked in by previous emissions.

138. Knowledge of full extent of the risks associated with the routine use of fossil fuel products is material to consumers' decisions to purchase and use those products. Had consumer demand to transition away from fossil fuels—and the market for affordable, reliable sources of clean energy—developed earlier, the subsequent impacts of climate change could have been avoided or mitigated.

139. As with cigarettes, history demonstrates that when consumers are made aware of the extent of the harmful effects or qualities of the products they purchase, they often choose to stop purchasing them, to reduce their purchases, or to make different purchasing decisions. This phenomenon holds especially true when products have been shown to harm public health or the environment. For example, increased consumer awareness of the role of pesticides in harming human

[180] ExxonMobil, Sable Project Development Plan, vol. 3, Environmental Impact Statement (Feb. 1996), at 4–77.

health, worker health, and the environment has spurred a growing market for food grown organically and without the use of pesticides. With access to information about how their food is grown, consumers have demanded healthier choices, and the market has responded.

140. A consumer who received accurate information that fossil fuel use was a primary driver of drastic climate change, and about the extent of the resultant dangers to the environment and to public health, likely would have decreased their use of fossil fuel products and/or demanded lower-carbon transportation options. Indeed, recent studies and surveys have found that consumers with substantial awareness of climate change are largely willing "to change their consumption habits . . . to help reduce the impacts of climate change."[181] If consumers were aware of what Defendants knew about climate change when Defendants knew it, consumers might have opted to avoid or minimize airplane travel; avoid or combine car travel trips; carpool; switch to more fuel-efficient vehicles, hybrid vehicles, or electric vehicles; demand more charging infrastructure for electric vehicles; use a car-sharing service; seek transportation alternatives all or some of the time, if and when available (e.g., public transportation, biking, or walking); electrify houses and office buildings, or adopt any combination of these choices. In addition, informed consumers often attempt to contribute toward solving environmental problems by supporting companies that they perceive to be developing "green" or more environmentally friendly products.[182]

141. Defendants have been aware for decades that clean energy presents a feasible alternative to fossil fuels. In 1980, Exxon forecasted that non-fossil fuel energy sources, if pursued,

[181] The Conference Board, Changes in Consumers' Habits Related to Climate Change May Require New Marketing and Business Models (Oct. 26, 2022), https://www.conference-board.org/topics/consumers-attitudes-sustainability/changes-in- consumer-habits-related-to-climate-change.

[182] *See, e.g.*, Leiserwitz et al., Program on Climate Change Communication, Yale University, and Center for Climate Change Communication, George Mason University, Consumer Activism on Global Warming, September 2021 (2021), https://climatecommunication.yale.edu/wp-content/uploads/2021/12/consumer-activism-onglobal-warming-september-2021.pdf. About a third of American consumers surveyed report "reward[ing] companies that are taking steps to reduce global warming by buying their products" and "punish[ing] companies that are opposing steps to reduce global warming by not buying their products," *id*. at 3.

could penetrate half of a competitive energy market in approximately 50 years.[183] This internal estimate was based on extensive modeling within the academic community, including research conducted by the Massachusetts Institute of Technology's David Rose, which concluded that a transition to non-fossil energy could be achieved in around 50 years. Exxon circulated an internal memo approving of Rose's conclusions, stating they were "based on reasonable assumptions."[184] But instead of warning consumers about the dangers of burning fossil fuels, Defendants chose to deceive consumers to preserve Defendants' profits and assets. As a result, much time has been lost during which consumers and market forces would have spurred a societal transition away from fossil fuels, which would have reduced or eliminated entirely the harmful effects of climate change in San Francisco.

142. By casting doubt upon the scientific consensus on climate change, Defendants deceived consumers about the relationship between consumption of fossil fuels and climate change, and the magnitude of the threat posed by fossil fuel use. Consumers equipped with complete and accurate knowledge about the climate and the public health effects of continued consumption of fossil fuels would have likely formed a receptive customer base for clean energy alternatives decades before such demand in fact developed. Instead, Defendants' campaign of deception allowed them to exploit public uncertainty to reap substantial profits.

143. The delayed emergence of a scalable market for non-fossil fuel energy is attributable to consumers' ignorance of the reality and severity of the climatic consequences associated with normal use of fossil fuels caused by Defendants' deception. The societal transition to a low-carbon economy would have been far cheaper had Defendants issued reasonable warnings about the dangers of runaway consumption of fossil fuels of which they were aware.

[183] Shaw & McCall, Exxon Research and Engineering Company's Technological Forecast: CO2 Greenhouse Effect (Dec. 18, 1980) at 5, https://www.climatefiles.com/exxonmobil/1980-exxon-memo-on-the-co2-greenhouse-effect-andcurrent-programs-studying-the-issue/.

[184] Exxon Research and Engineering Company, Coordination and Planning Division, CO_2 Greenhouse Effect: A Technical Review (Apr. 1, 1982) at 17–18, https://www.climatefiles.com/exxonmobil/1982-memo-to-exxon-management-about-co2-greenhouse-effect/.

144. Despite Defendants' knowledge of the foreseeable, measurable, and significant harms associated with the unrestrained consumption and use of their fossil fuel products, and despite Defendants' knowledge of technologies and practices that could have helped to reduce the foreseeable dangers associated with their fossil fuel products, Defendants continued to misleadingly and wrongfully market and promote heavy fossil fuel use and mounted a campaign to obscure the connection between their fossil fuel products and the climate crisis, dramatically increasing the cost of abatement. This campaign was intended to and did reach and influence consumers and the public, including in San Francisco and California.

145. At all relevant times, Defendants were deeply familiar with opportunities to reduce the use of their fossil fuel products and associated global greenhouse emissions, mitigate the harms associated with the use and consumption of their products, and promote development of alternative, clean energy sources. Examples of that recognition include, but are not limited to, the following:

i. In 1961, Phillips Petroleum Company filed a patent application for a method to purify gas, among other things, because "natural gas containing gasoline hydrocarbons can contain undesirable amounts of sulfur and other compounds such as carbon dioxide which are undesirable in the finished gasoline product."[185]

ii. In 1963, Esso (Exxon) obtained multiple patents on technologies for fuel cells,[186] including on the design of a fuel cell and necessary electrodes,[187] and on a process for increasing the oxidation of a fuel, specifically methanol, to produce electricity in a fuel cell.[188]

iii. In 1970, Esso (Exxon) obtained a patent for a "low-polluting engine and drive system" that used an interburner and air compressor to reduce pollutant emissions, including CO_2 emissions, from gasoline combustion engines (the system also increased the efficiency of the fossil

[185] Phillips Petroleum Co., *Patent US3228874A: Method for recovering a purified component from a gas* (filed Aug. 22, 1961), https://patents.google.com/patent/US3228874.

[186] Fuel cells use the chemical energy of hydrogen or other fuels to produce electricity. *See* U.S. Dep't of Energy, *Fuel Cells*, https://www.energy.gov/eere/fuelcells/fuel-cells.

[187] ExxonMobil Research Engineering Co., *Patent US3116169A: Fuel cell and fuel cell electrodes* (granted Dec. 31, 1963), https://www.google.com/patents/US3116169.

[188] ExxonMobil Research Engineering Co., *Patent US3113049A: Direct production of electrical energy from liquid fuels* (granted Dec. 3, 1963), https://www.google.com/patents/US3113049.

fuel products used in such engines, thereby lowering the amount of fossil fuel product necessary to operate engines equipped with this technology).[189]

iv. In 1980, Imperial Oil wrote in its "Review of Environmental Protection Activities for 1978–79": "There is no doubt that increases in fossil fuel usage and decreases in forest cover are aggravating the potential problem of increased CO_2 in the atmosphere. Technology exists to remove CO_2 from stack gases but removal of only 50% of the CO_2 would double the cost of power generation."[190]

v. A 1987 company briefing Shell produced on "Synthetic Fuels and Renewable Energy" noted that while "immediate prospects" were "limited," "nevertheless it is by pursuing commercial opportunities now and in the near future that the valuable experience needed for further development will be gained." The brief also noted that "the task of replacing oil resources is likely to become increasingly difficult and expensive and there will be a growing need to develop lean, convenient alternatives. Initially these will supplement and eventually replace valuable oil products. Many potential energy options are as yet unknown or at very early stages of research and development. New energy sources take decades to make a major global contribution. Sustained commitment is therefore needed during the remainder of this century to ensure that new technologies and those currently at a relatively early stage of development are available to meet energy needs in the next century."[191]

vi. A 1989 article in a publication from Exxon Corporate Research for company use only stated: "CO_2 emissions contribute about half the forcing leading to a potential enhancement of the Greenhouse Effect. Since energy generation from fossil fuels dominates modern CO_2 emissions, strategies to limit CO_2 growth focus near term on energy efficiency and long term on developing alternative energy sources. Practiced at a level to significantly reduce the growth of

[189] ExxonMobil Research Engineering Co., *Patent US3513929A: Low-polluting engine and drive system* (granted May 26, 1970), https://www.google.com/patents/US3513929.

[190] Imperial Oil Ltd., *Review of Environmental Protection Activities for 1978–1979* 2 (Aug. 6, 1980), http://www.documentcloud.org/documents/2827784-1980-Imperial-Oil-Review-of-Environmental.html#document/p2.

[191] *Synthetic Fuels and Renewable Energy*, Shell Service Briefing, no. 2, 1987, https://assets.documentcloud.org/documents/4411089/Document2.pdf.

greenhouse gases, these actions would have substantial impact on society and our industry—near-term from reduced demand for current products, long term from transition to entirely new energy systems."[192]

146. Defendants could have taken practical, cost-effective steps to mitigate the risks posed by fossil fuel products. Those alternatives could have included, among other measures:

i. Acknowledging scientific evidence on anthropogenic climate change and the damages it will cause people, communities, and the environment. Acceptance of that evidence along with associated warnings and actions would have progressed the agenda from determining *whether* to combat climate change and sea level rise to deciding *how* to combat it; avoided much of the public confusion that has ensued over more than 30 years, since at least 1988; and contributed to an earlier and quicker transition to energy sources compatible with minimizing catastrophic climatic consequences.

ii. Forthrightly communicating with Defendants' shareholders, consumers, banks, insurers, the public, and the City and warning them about the global warming hazards of Defendants' fossil fuel products that were known to Defendants, which would have enabled those groups to make material, informed decisions about whether and how to address climate change and sea level rise vis-à-vis Defendants' products—including whether and how much to invest in alternative clean energy sources compared to fossil fuels;

iii. Refraining from affirmative efforts, whether directly, through coalitions, or through front groups, to distort consumer awareness of the climatic dangers of fossil fuels, and to cause many consumers and business leaders to think the relevant science was far less certain that it actually was; and

iv. Sharing their internal scientific research with consumers and the public, and with other scientists and business leaders, to increase public understanding of the scientific underpinnings of climate change and its relation to Defendants' fossil fuel products.

[192] Brian Flannery, *Greenhouse Science, Connections: Corporate Research, Exxon Research and Engineering Company* (Fall 1989), http://www.climatefiles.com/exxonmobil/1989-exxon-mobil-article-technologys-place-marketing-mix.

F. Defendants' Deceit Only Recently Came to Light, and Their Misconduct Is Ongoing.

147. Beginning in 2015, journalists began to uncover mounting evidence of Defendants' campaign of deception. In September 2015, journalists at *Inside Climate News* reported that Exxon had sophisticated knowledge of the causes and consequences of climate change and the role its products played in causing climate change as far back as the 1970s.[193] These journalists uncovered Exxon's superior knowledge through an exhaustive investigation of thousands of archived documents and through interviews with former Exxon employees.

148. Between October and December 2015, several journalists at the Energy and Environment Reporting Project at Columbia University's Graduate School of Journalism and *The Los Angeles Times* also exposed the fact that Exxon and other members of the fossil fuel industry had superior knowledge of the causes and consequences of climate change and the role their products played in causing climate change as far back as the 1970s.[194]

149. In November 2017, the Center for International Environmental Law issued a report revealing that Defendants had superior knowledge of the causes and consequences of climate change and the role fossil fuel products played in causing climate change since the 1970s.[195]

150. In September 2023, the *Wall Street Journal* reported that Exxon worked "behind closed doors" to sow public doubt about climate change. The article was based on "documents reviewed by the Journal, which haven't been previously reported."[196]

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[193] Neela Banerjee et al., *Exxon: The Road Not Taken*, InsideClimate News (Sept. 16, 2015), https://insideclimatenews.org/content/Exxon-The-Road-Not-Taken.

[194] The *Los Angeles Times* published a series of three articles between October and December 2015. *See* Katie Jennings et al., *How Exxon went from leader to skeptic on climate change research, L.A. Times* (Oct. 23, 2015), https://graphics.latimes.com/exxon-research; Sara Jerving et al., *What Exxon knew about the Earth's melting Arctic*, L.A. Times (Oct. 9, 2015), https://www.latimes.com/nation/la-na-what-exxon-knew-20151009-story.html; Lieberman & Rust, *supra* note 168.

[195] Caroll Muffett & Steven Feit, *Smoke and Fumes: The Legal and Evidentiary Basis for Holding Big Oil Accountable for the Climate Crisis*, *Ctr. for Int'l Envtl. Law* 10 (2017), https://www.ciel.org/reports/smoke-and-fumes.

[196] Christopher M. Matthews & Collin Eaton, *Inside Exxon's Strategy to Downplay Climate Change*, THE WALL STREET J. (Sept. 14, 2023, 5:30 AM ET), https://www.wsj.com/business/energy-oil/exxon-climate-change-documents-e2e9e6af.

151. The fact that Defendants and their proxies knowingly provided incomplete and misleading information to the public, including San Francisco consumers, only recently became discoverable due to, among other things:

i. Defendants' above-described deception campaign, which continues to this day;

ii. Defendants' concealment and misrepresentations regarding the fact that their products cause catastrophic harms; and

iii. the fact that Defendants used front groups such as API, GCC, and ICE to obscure their involvement in these actions, which put Plaintiffs off the trail of inquiry.

152. Moreover, Defendants' tortious misconduct—in the form of misrepresentations, omissions, and deceit—began decades ago and continues to this day. Now, rather than engaging in outright denials of the existence of climate change, Defendants deflect attention from their role in causing climate change by falsely portraying fossil fuel products as environmentally friendly, climate-friendly, or otherwise less environmentally damaging than those products really are.

153. Defendants have continued to mislead the public about the impact of fossil fuel products on climate change through "greenwashing." Through recent advertising campaigns and public statements in California and/or intended to reach California, including but not limited to online advertisements and social media posts, Defendants falsely and misleadingly portray these products as "green," and Defendants portray themselves as climate-friendly energy companies that are deeply engaged in finding solutions to climate change. In reality, Defendants continue to primarily, and overwhelmingly, invest in, develop, promote, and profit from fossil fuel products and heavily market those products to consumers, with full knowledge that those products will continue to exacerbate climate change harms.

154. Defendants' greenwashing exploits consumers' concerns about climate change and their desire to purchase "green" products and spend their consumer dollars on products and businesses that are taking substantial and effective measures to combat climate change. Defendants' false advertisements are likely to mislead the public, including San Francisco consumers, by giving the impression that in purchasing Defendants' fossil fuel products, consumers are supporting

genuine, substantial, and effective measures to mitigate climate change through these companies' alleged investments in clean energy. Defendants' greenwashing ultimately attempts to persuade consumers to continue purchasing Defendants' products, including fossil fuel products.

155. As described above, Defendants, directly and/or through membership in other organizations, continue to misrepresent their own activities, the fact that their products cause climate change, and the danger presented by climate change. Exemplars of Defendants' continuing misrepresentations, omissions, and deceit follow below.

156. As recently as June 2018, a post on the official Shell blog stated: "the potential extent of change in the climate itself could now be limited. In other words, the prospect of runaway climate change might have passed."[197] However, this statement is not supported by valid scientific research, and was and is contradicted by various studies.[198]

157. In March 2018, Chevron issued a report entitled "Climate Change Resilience: A Framework for Decision Making," which misleadingly stated that "[t]he IPCC Fifth Assessment Report concludes that there is warming of the climate system and that warming is due in part to human activity."[199] In reality, the Fifth Assessment report concluded that "[i]t is *extremely likely* [defined as 95–100% probability] that human influence has been the *dominant cause* of the observed warming since the mid-20th century."[200]

158. Despite this fact, in April 2017, Chevron CEO and Chairman of the Board John Watson said on a podcast, "There's no question there's been some warming; you can look at the

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[197] David Hone, *Has Climate Change Run Its Course??, Shell Climate Change Blog* (June 14, 2018), https://blogs.shell.com/2018/06/14/has-climate-change-run-its-course.

[198] *See, e.g.*, Fiona Harvey, *Carbon Emissions from Warming Soils Could Trigger Disastrous Feedback Loop,* The Guardian (Oct. 5, 2017), https://www.theguardian.com/environment/2017/oct/05/carbon-emissions-warming-soils-higher-than-estimated-signalling-tipping-points; Jonathan Watts, *Domino-Effect of Climate Events Could Move Earth into a 'Hothouse' State,* The Guardian (Aug. 7, 2018), https://www.theguardian.com/environment/2018/aug/06/domino-effect-of-climate-events-could-push-earth-into-a-hothouse-state; Fiona Harvey, '*Tipping Points' Could Exacerbate Climate Crisis, Scientists Fear,* The Guardian (Oct. 9, 2018), https://www.theguardian.com/environment/2018/oct/09/tipping-points-could-exacerbate-climate-crisis-scientists-fear.

[199] Chevron, *Climate Change Resilience: A Framework for Decision Making* 20 (Mar. 2018), https://www.chevron.com/-/media/shared-media/documents/climate-change-resilience.pdf.

[200] IPCC, S*ummary for Policymakers: Working Group I Contribution to the Fifth Assessment Report 17* (2013), https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_SPM_FINAL.pdf.

temperatures data and see that. The question and debate is around how much, and how much is caused by humans."[201]

159. Similarly, ConocoPhillips' "Climate Change Position" as it appeared on the company's website through 2020 stated that human activity is "contributing to" climate change and emphasizes "uncertainties," even though the science is clear: "ConocoPhillips recognizes that human activity, including the burning of fossil fuels, is contributing to increased concentrations of greenhouse gases in the atmosphere that can lead to adverse changes in global climate. . . . While uncertainties remain, we continue to manage greenhouse gas emissions in our operations and to integrate climate change related activities and goals into our business planning."[202]

160. On May 27, 2015, at Exxon's annual shareholder meeting, then-CEO Rex Tillerson misleadingly downplayed global warming's risks by stating that climate models used to predict future impacts were unreliable: "What if everything we do it turns out our models are lousy, and we don't get the effects we predict? Mankind has this enormous capacity to deal with adversity, and those solutions will present themselves as those challenges become clear."[203] But as noted above, in 1982 Exxon's scientific staff stated, based upon the climate models, that there was a "clear scientific consensus" with respect to the level of projected future global warming and starting shortly thereafter Exxon relied upon the projections of climate models, including its own climate models, in order to protect its own business assets. Tillerson's statement reached consumers because it was reported in the press, including in California,[204] as is common when fossil fuel company CEOs make statements regarding climate change and as Exxon had reason to know would occur.

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[201] Columbia Energy Exchange Podcast, John Watson, CEO, Chevron (Apr. 10, 2017), https://www.energypolicy.columbia.edu/us-energy-markets-policy.

[202] ConocoPhillips, *Climate Change Position* (Oct. 28, 2020), https://web.archive.org/web/20201028115814/https://www.conocophillips.com/sustainability/integrating-sustainability/sustainable-development-governance/policies-positions/climate-change-position/.

[203] Dallas Morning News, *Exxon CEO: Let's Wait for Science to Improve Before Solving Problem of Climate Change* (May 27, 2015), https://www.dallasnews.com/business/energy/2015/05/28/exxon-ceo-let-s-wait-for-science-to-improve-before-solving-problem-of-climate-change.

[204] *See, e.g.*, David Koenig, Exxon shareholders to vote on climate change, fracking, San Diego Union-Tribune, May 27, 2015, http://www.sandiegouniontribune.com/news/2015/may/27/exxon-shareholders-to-vote-on-climate-change/

161. Until approximately early 2017, Exxon's website continued to emphasize the "uncertainty" of global warming science and impacts: "current scientific understanding provides limited guidance on the likelihood, magnitude, or time frame" of events like temperature extremes and sea level rise.[205] Exxon's insistence on crystal-ball certainty was clear misdirection, since Exxon knew that the fundamentals of climate science were well settled and showed global warming to present a clear and present danger.[206]

162. Until approximately early 2016, API's website referred to global warming as "possible man-made warming" and claimed that the human contribution is "uncertain." API removed this statement from its web site in 2016 when journalistic investigations called attention to API's misleading statements on global warming and its participation in the climate change Task Force during the late 1970s and early 1980s.

163. Defendants bombard the public and consumers with the following advertisements, although these are a mere sliver of Defendants' extensive campaigns. Defendants' advertisements, directed at consumers, follow Defendants' substantial early knowledge of global warming's severe risks and impacts, and follow a decades-long campaign of misleading statements on global warming that primed the pump for massive use of their fossil fuel products.

i. Exxon's "Lights Across America" website advertisement states that natural gas is "helping dramatically reduce America's emissions"[207] even though natural gas is a fossil fuel causing widespread planetary warming and harm to coastal cities like San Francisco and the use of natural gas competes with wind and solar, which have no greenhouse gas emissions.

ii. In 2017, Shell's CEO promoted massive fossil fuel use by stating that the fossil fuel industry could play a "crucial role" in lifting people out of poverty.[208] A Shell website

[205] Formerly found at http://corporate.exxonmobil.com/en/current-issues/climate-policy/meeting-global-needs/managing-climate-change-business-risks.

[206] *See* IPCC, Climate Change 2014, Impacts, Adaptation, and Vulnerability, Summary for Policymakers, http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/ar5_wgII_spm_en.pdf.

[207] https://www.youtube.com/watch?v=tMu1CBjXfq4&list=PLIrXlHj7zayYGaExfTp_B4t6gqTtkGf9A&index=6 (at 0:46).

[208] Shell CEO speech, Mar. 9, 2017, http://www.shell.com/media/speeches-and-articles/2017/deliver-today-prepare-for-tomorrow.html.

promotion states: "We are helping to meet the world's growing energy demand while limiting CO_2 emissions, by delivering more cleaner-burning natural gas."[209]

iii. BP touts natural gas on its website as "a vital lower carbon energy source" and as playing a "crucial role" in a transition to a lower carbon future.[210] BP promotes continued massive fossil fuel use as enabling two billion people to be lifted out of poverty.[211]

iv. Chevron's website implores the public that "we produce safe, reliable energy products for people around the world."[212] Chevron also promotes massive use of fossil fuels as the key to lifting people out of poverty: "Reliable and affordable energy is necessary for improving standards of living, expanding the middle class and lifting people out of poverty. Oil and natural gas will continue to fulfill a significant portion of global energy demand for decades to come – even in a carbon-constrained scenario."[213] A prior Chevron advertisement still available on the web promotes Chevron fossil fuels on a massive scale by stating that "our lives demand oil."[214]

v. ConocoPhillips promotes its fossil fuel products by stating that it "responsibly suppl[ies] the energy that powers modern life."[215] Similarly, ConocoPhillips has the following advertising slogan on its website: "Providing energy to improve quality of life."[216]

[209] Shell United States, Transforming Natural Gas, http://www.shell.us/energy-and-innovation/transforming-natural-gas.html.

[210] https://www.bp.com/content/dam/bp/en/corporate/pdf/sustainability-report/group-reports/bp-sustainability-report-2016.pdf; http://www.bp.com/energytransition/shifting-towards-gas.html.

[211] BP energy outlook, http://www.bp.com/en/global/corporate/energy-economics/energy-outlook.html.

[212] Chevron, Products and Services, https://www.chevron.com/operations/products-services.

[213] Chevron, managing climate change risks, https://www.chevron.com/corporate-responsibility/climate-change/managing-climate-risk.

[214] Chevron TV ad (2009), https://www.youtube.com/watch?v=-KyjTGMVTkA.

[215] ConocoPhillips, the changing energy landscape, http://www.conocophillips.com/who-we-are/our-company/spirit-values/responsibility/Pages/the-changing-energy-landscape.aspx.

[216] ConocoPhillips, Producing energy, http://www.conocophillips.com/what-we-do/producing-energy/Pages/default.aspx.

G. San Francisco Has Suffered, Is Suffering, and Will Suffer Injuries from Defendants' Tortious Conduct.

164. Defendants' individual and collective conduct—including, but not limited to their failures to warn of the threats their fossil fuel products posed to the world's climate; their wrongful promotion of fossil fuel products and their concealment of known hazards associated with the use of those products; and their public deception campaigns designed to obscure the connection between their products and climate change and its environmental, physical, social, and economic consequences—brought about or helped bring about climate change and consequent harms to Plaintiffs. Such harms include sea level rise and attendant coastal erosion and flooding; increased frequency and intensity of extreme precipitation events; increased frequency and intensity of heat events; reduced air quality; and the cascading social, economic, health, and other consequences of these environmental changes. These adverse impacts will continue to increase in frequency and severity in San Francisco.

165. These harms affect and will continue to disproportionately affect San Francisco's environmental justice communities. Sea level rise, extreme precipitation, extreme heat, and poor air quality affect San Franciscans differently, depending on where in San Francisco they live and work and other social, economic, and environmental factors. The lowest-lying areas of San Francisco are most at risk from sea level rise, flood inundation, and storm surges. Areas of San Francisco with density of impervious surfaces and lacking in tree and green infrastructure are most prone to the urban heat island effect. San Franciscans who are unhoused or reside in older, less resilient buildings and homes are and will continue to be disproportionately impacted by exposure to extreme heat and air pollution.[217] Plaintiffs have incurred and will continue to incur costs to respond to public health and safety impacts of climate change.

166. Plaintiffs have suffered and will continue to suffer severe climate change harms, as a result of Defendants' deceptive promotion of fossil fuel consumption as described in this Complaint. These include, but are not limited to, injury or destruction of City-owned or -operated facilities and

[217] SF.gov, *Climate Health and Equity* (May 17, 2023), https://www.sf.gov/reports/may-2023/climate-health-and-equity.

property, as well as other assets that are essential to community health, safety, and well-being; increased planning and implementation costs for confronting sea level rise, coastal and inland storms and associated flooding, erosion, landslides, extreme precipitation and extreme heat events, and poor air quality; increased costs for emergency preparedness and response measures; and increased costs for public education and awareness and for community adaptation and resilience efforts.

167. As a result of Defendants' wrongful conduct, Plaintiffs have expended and will continue to expend resources to abate the existing and projected adverse effects of global warming on Plaintiffs, including, but not limited to, the efforts described below.

i. Sea Level Rise

168. Global warming has caused and continues to cause accelerated sea level rise in San Francisco Bay and the adjacent ocean with severe, and potentially catastrophic, consequences for Plaintiffs. The San Francisco Bay Area has experienced significant sea level rise over the last half century attributable to Defendants' conduct. In the last 100 years, sea levels in the San Francisco Bay Area have risen 8 inches.[218]

169. San Francisco is extremely vulnerable to inundation from accelerated sea level rise and storm surges because it is surrounded by water on three sides – the Pacific Ocean to the west and San Francisco Bay to the north and east. Sea level rise in San Francisco Bay is causing and will continue to cause coastal flooding of low-lying shorelines, increased shoreline erosion, and inundation of and injury to public property and private property located on and near the San Francisco's coastline.[219]

170. Plaintiffs are further threatened by additional, significant, and dangerous sea level rise in the future. Sea level rise is currently projected to increase by up to 16 inches by 2050 and 78

[218] Cal. Fourth Climate Change Assessment, San Francisco Bay Area Regional Report at 31 (Jan. 2019), https://www.energy.ca.gov/sites/default/files/2019-11/Reg_Report-SUM-CCCA4-2018-005_SanFranciscoBayArea_ADA.pdf.

[219] City & County of San Francisco, Sea Level Rise Vulnerability and Consequences Assessment (Feb. 2020), at E.1, https://sfplanning.s3.amazonaws.com/default/files/plans-and-programs/planning-for-the-city/sea-level-rise/SLRVCA_Report_Full_Report.pdf.

inches by 2100.[220] Storm surge added on top of these elevated sea levels could produce water levels up to 58 inches by 2050 and 120 inches by 2100 higher than the current average higher high tide (*i.e.* mean higher high water).[221] This increase comes in part from committed sea level rise caused by the "locked in" greenhouse gases already emitted[222] due to Defendants' past and ongoing tortious promotion of fossil fuel consumption.

171. As sea level rises, high tides will extend further inland and cause more extensive flooding. Without adaptation measures, daily tides could permanently inundate more than six percent of San Francisco by 2100.[223] Storms with their attendant surges and flooding occur on top of and superimposed on sea level rise, causing storm surges to be greater, extend farther inland, and cause more extensive injury—including greater inundation and flooding of public and private property in San Francisco.[224]

172. People and assets located adjacent to San Francisco's coastline are at risk from flooding due to sea level rise, including at least 13,500 residents; wastewater systems that serve two-thirds of San Franciscans; local and regional transit networks, including MUNI and BART underground; 40 miles of roadway; 25 miles of MUNI track; 3 bus facilities; many critical facilities, including 6 fire stations; and 2,600 residential and commercial buildings, including significant areas of Transbay and SOMA, which are zoned for future growth.

173. Plaintiffs have taken and continue to take steps to assess the immediate and long-term threats of sea level rise and identify actions Plaintiffs must take to confront the threat.[225] A severe storm surge or extreme high tides coupled with higher sea levels can potentially result in the loss of

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[220] Cal. Ocean Protection Council, *State of California Sea Level Rise Guidance: 2024 Science and Policy Update – Draft Released For Public Comment* (Jan. 2024), https://opc.ca.gov/2024/01/draft-slr-guidance-2024/.

[221] *Ibid*.

[222] Peter U. Clark et al., *Consequences of Twenty-First-Century Policy for Multi-Millennial Climate and Sea-Level Change*, Nature Climate Change Vol. 6, 363–65 (2016).

[223] *Ibid.*

[224] 2020 Sea Level Rise Vulnerability and Consequences Assessment, *supra* note 219, at 19–21.

[225] *See, e.g.*, 2020 Sea Level Rise Vulnerability and Consequences Assessment, *supra* note 219, at 9–10.

life and extensive injury to public and private property. Higher sea levels will also increase the elevation of the groundwater table, increasing the susceptibility of some soils to liquefaction during an earthquake.[226] Elevated groundwater levels could further disturb contaminated soils near landfills etc., leading to the release of hazardous substances with potentially significant consequences on public health, the environment, and San Francisco's economy.[227] To protect people and property against sea level rise, Plaintiffs are also developing and implementing adaptation plans to raise infrastructure, build flood barriers and other infrastructure, and take other resiliency measures. The magnitude of the actions needed to abate harms from sea level rise will increase in light of the rapidly accelerating sea level rise.

174. Plaintiffs are adapting now to ongoing sea level rise given ongoing and future harm to San Franciscans and injury to City-owned property, facilities, and equipment, with risks of increasingly severe injury in the future. For example:

i. Plaintiffs are planning to transform much of San Francisco's waterfront to prepare for climate change-induced sea level rise and coastal flooding as part of the Waterfront Resilience Program.[228] The program includes elements such as floodproofing, seawalls, berms, floodwalls, and nature-based features, and actions such as elevating entire buildings (including San Francisco's iconic Ferry Building) above where they currently sit.[229] The plan seeks to fortify crucial economic, transportation, cultural, historical, and ecological hubs in San Francisco against sea level rise, including Fisherman's Wharf, the Embarcadero, South Beach and Mission Bay, and Islais Creek and Bayview. The first phase of this program is preliminarily expected to cost upwards of $13.6 billion.[230] Plaintiffs are also planning adaptation measures for San Francisco's northern waterfront,

[226] City & County of San Francisco, Hazards and Climate Resilience Plan (Mar. 2020), at 62, https://onesanfrancisco.org/sites/default/files/inline-files/HCR_FullReport_200326_0.pdf; *see also* https://www.usgs.gov/tools/liquefaction-and-sea-level-rise.

[227] *See generally* 2020 Sea Level Rise Vulnerability and Consequences Assessment, *supra* note 219.

[228] San Francisco Waterfront Coastal Flood Study Draft Integrated Feasibility Report and Environmental Impact Statement (Jan. 2024), https://www.swt.usace.army.mil/Portals/41/SFWCFS_DIFR_EIS_Main%20Report_1.pdf.

[229] *Ibid*.

[230] *Ibid.*

including the Marina and surrounding areas, and additional parts of its eastern waterfront, including Yosemite Creek and Yosemite Slough.

ii. Rising sea levels and increasing frequency of intense storms are causing shoreline erosion along Ocean Beach that threatens roads, pathways, public infrastructure, and buildings along the shore—all of which San Francisco's residents have long used and enjoyed. To protect these properties and infrastructure, Plaintiffs have embarked on an Ocean Beach Climate Change Adaptation Project. Project elements include rerouting Great Highway traffic at Sloat Boulevard away from the narrowest part of the beach, building a multi-use public trail where the highway is now, and mitigating erosion through sand replacement.[231] San Francisco is also confronting rising sea level effects, including saltwater intrusion and shoreline erosion, through projects elsewhere in San Francisco, including at India Basin Waterfront Park and Heron's Head Park, through wetland restoration and other resiliency measures.

iii. Sea level rise also poses a severe threat to San Francisco international Airport ("SFO"), including its runways and other infrastructure that provide critical economic value to the region. The airport is located at an elevation approximately between two to seven feet above mean sea level. Today, the airport is at risk of flooding from storm surges.[232] Sea level rise, absent adaptation, will cause additional severe disruption to the public's use of SFO, a major commercial hub for San Francisco and its residents. SFO has developed the Shoreline Protection Program at an estimated cost of $587 million to mitigate against flooding vulnerabilities from storm surges and sea level rise. The program involves constructing a continuous system of coastal protection consisting primarily of sheet pile walls along the airport's eight miles of shoreline. The program will include reconstructing outfalls and relocating service roads and other assets.[233]

iv. Sea level rise and coastal storm surges will impact the integrity of San Francisco's wastewater infrastructure. San Francisco has a combined sewer system that collects and

[231] Ocean Beach Climate Change Adaptation Project, https://sfpuc.org/construction-contracts/construction-projects/oceanbeach.

[232] 2020 Sea Level Rise Vulnerability and Consequences Assessment, *supra* note 219, at 48–50.

[233] SFO, Shoreline Protection Program Fact Sheet (Sept. 2021), https://planning.flysfo.com/wp-content/uploads/2023/03/Shoreline-Protection-_Fact-Sheet_Sep2021_ada.pdf.

treats both stormwater and wastewater. This system includes nearly 1,000 miles of sewer pipelines, 26 pump stations, and three treatment plants that collect, convey, and treat stormwater and wastewater before it is discharged through outfalls to San Francisco Bay and the Pacific Ocean. Among the impacts is the hydraulic capacity of the collection system to discharge through 36 combined sewer discharge outfalls to the Pacific Ocean and San Francisco Bay.[234] Of the 36 discharge outfalls, 29 are located on the bayside shoreline, and 7 are located on the westside of San Francisco. As currently configured, sea level rise and coastal storm surges threaten to inundate many of these outfalls, substantially reducing the capacity of these outfalls to discharge wastewater as intended.[235] Discharge outfalls cannot simply be elevated because that would interfere with the hydraulic grade line of the entire system. As a result, Plaintiffs are developing costly backflow prevention and pumping measures to prevent intrusion of saltwater and ensure wastewater can be discharged. To address current and short-term impacts of sea level rise on its Bayside discharge outfalls, for example, Plaintiffs have implemented and continues to implement backflow prevention measures that cost tens of millions of dollars. In addition, maintaining outflow capacity as sea levels rise may require the installation of pumping stations and new outfalls in the future, projects that will cost billions.[236] The discharge outfall structures are also vulnerable to saltwater corrosion and degradation, requiring costly repairs and upgrades in the future.

v. Other aspects of San Francisco's combined sewer system are also impacted by sea level rise. The Southeast Treatment Plant, San Francisco's largest wastewater treatment plant, is particularly vulnerable to flooding caused by sea level rise. The plant consists of multiple facilities above and below ground that have a unique configuration of mechanical and electrical equipment interconnected through a network of conduits or tunnels. Coastal flooding could potentially damage sensitive components, and retrofits and flood proofing measures may be required to ensure plant operations are not interrupted by flooding events.[237]

[234] 2020 Sea Level Rise Vulnerability and Consequences Assessment, *supra* note 219, at 115.

[235] *Id.* at 153.

[236] *Id.* at 153.

[237] *Id.* at 145–46.

vi. The Southeast Treatment Plant discharges wastewater primarily through the Southeast Bay effluent outfall. With the threat of sea level rise, which will reduce the discharge capacity of other outfalls connected to the plant, Plaintiffs are planning for the potential need to replace the Southeast Bay outfall and construct a new booster station—an undertaking that is projected to cost billions—to enable final effluent from the plant to be discharged.

vii. San Francisco's combined sewer system includes a system of pump stations that transport wastewater to treatment plants. Many of San Francisco's pump stations are vulnerable to flooding caused by sea level rise. Potential flooding risks to pump stations require costly flood proofing measures, retrofits, and the relocation of electrical gear to higher elevations.[238]

viii. A significant portion of the combined sewer infrastructure on the west side of San Francisco is at severe risk of shoreline erosion caused by sea level rise. This infrastructure, including the Westside Transport/Storage Box, Westside Pump Station, Lake Merced Tunnel, and the Oceanside Water Pollution Control Plant, is located along Ocean Beach on San Francisco's western shore. Most of this infrastructure is located underground. Sea level rise and corresponding shoreline erosion threatens to damage this infrastructure. As part of Plaintiffs' Ocean Beach Climate Change Adaptation Project, Plaintiffs have developed plans to protect this infrastructure at an estimated cost of $220 million.

175. Plaintiffs are already experiencing, and working to abate, current harms caused by sea level rise. But while harms to Plaintiffs have commenced, additional and far more severe injuries will occur in the future if prompt action is not taken to protect Plaintiffs from rising sea levels. Indeed, the sea level rise harms inflicted on Plaintiffs by global warming are insidious partly because they are projected to continue, and to worsen, far into the future. Plaintiffs must plan for future harms from sea level rise now to ensure that adaptation to protect human well-being and public and private property is done most efficiently and effectively.

[238] *Id.* at 162.

ii. More Frequent and Extreme Precipitation

176. Extreme precipitation events will continue to increase in frequency and severity as a result of climate change attributable to Defendants' tortious conduct alleged herein.[239] Recent estimates show that climate change will result in storms in the San Francisco Bay Area that release up to 37% more precipitation by the year 2100.[240] Warmer global temperatures lead to storm systems being able to hold a higher volume of water, which is then released as increasingly unprecedented levels of precipitation. More frequent and extreme precipitation events caused by climate change compound San Francisco's vulnerability to storm surges and sea level rise.

177. Much of California's winter precipitation arrives in the form of "atmospheric rivers," which are fed by long streams of water vapor transported from the Pacific Ocean. Atmospheric rivers can produce extremely heavy precipitation over multiple days, and their frequency is expected to increase in the Western US due to climate change.[241] The amount of precipitation associated with each of these storms in the Bay Area is expected to increase by up to 17% by 2050 and up to 37% by 2100.[242] Warmer global temperatures lead to storm systems being able to hold a higher volume of water, which is then released as increasingly unprecedented levels of precipitation.

178. Between December 26, 2022, and January 16, 2023, the Bay Area was hit with nine consecutive atmospheric rivers. In San Francisco alone, 18 inches of rain fell over those 21 days, representing 75% of San Francisco's total average annual rainfall. These extreme precipitation events caused and will continue to cause destructive coastal and inland flooding and flash-flooding. Floods and storms can cause emergency conditions such as power, water, and gas outages; disrupt transportation routes and commercial supplies; damage homes, buildings, and roads; cause destruction in San Francisco's parks and recreation areas; and create severe environmental problems, including landslides and mudslides, which require **costly** response and recovery efforts. Especially

[239] *See* Cal. Fourth Climate Change Assessment, *supra* note 220, at 19.

[240] C. Patricola et al., *Future Changes in Extreme Precipitation Over the San Francisco Bay Area: Dependence on Atmospheric River and Extratropical Cyclone Events*, 36 Weather & Climate Extremes 1, 12 (2022), https://doi.org/10.1016/j.wace.2022.100440.

[241] *Id.* at 2.

[242] *Id.* at 12.

vulnerable neighborhoods to extreme flooding include Bayview-Hunters Point, Mission Bay, SOMA, Downtown Civic Center, Chinatown, and North Beach.[243]

179. Plaintiffs continue to suffer injuries caused by and responding to extreme storms and flooding and must adapt now to protect people, property, facilities, and equipment from impacts caused by more frequent and extreme precipitation events. For example, throughout the year, the City cleans pipes and clear catch basins, performs targeted tree pruning, and sweeps streets across San Francisco. Before anticipated storms, the City intensifies these efforts and provides free sandbags to residents. The City also increases staffing and prioritizes locations in low-lying neighborhoods to respond to reports of clogged storm drains so that they can be addressed during or after the storm.[244] After storms, the City undertakes extensive recovery efforts to repair damage to City-owned property and infrastructure.

iii. Extreme Heat and Reduced Air Quality

180. Climate change has increased and will continue to increase average temperatures and the frequency and severity of extreme heat events in San Francisco.[245] By 2050, California is projected to warm by between 4.4–5.8°F in daily maximum average temperature, an indicator of extreme temperature shifts.[246] By 2100, California's average temperatures could increase by 8.8°F, if not more.[247] In the San Francisco Bay Area, average annual temperatures are currently projected to increase by up to 7.2ºF by 2100.[248]

181. Between 1960 and 1990, San Francisco averaged three or four extreme heat events per year, but between 2035 and 2064, that number is expected to jump to an average of seven extreme heat events per year with a maximum of 24 extreme heat events in particularly hot years.

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[243] 2020 Hazards and Climate Resilience Plan, *supra* note 226, at 111.

[244] 2020 Sea Level Rise Vulnerability and Consequences Assessment, *supra* note 219, at 37.

[245] A San Francisco extreme heat event is any temperature in the top two percent of all San Francisco temperatures between the years 1961–1990. By this standard, in San Francisco an extreme heat event is officially any day over 85 °F. *See The Heat and Air Quality Resilience Plan* (2023), *supra* note 12, at 17.

[246] Cal. Fourth Climate Change Assessment, *supra* note 220, at 23.

[247] *Ibid.*

[248] *Id.* at 14.

And between 2070 and 2099, San Francisco is expected to have an average of 15 extreme heat events per year, with an expected maximum of 51 extreme heat events in particularly hot years.

182. San Francisco's temperature exceeded 95°F on only 12 dates between 1980 and 2022, but it may exceed this threshold up to 10 days *per year* by 2100.[249] On September 1, 2017, San Francisco's temperatures hit 106°F—the highest temperature ever recorded in San Francisco. Temperatures reached 102 degrees the next day, making it only the third time in recorded history that San Francisco's temperatures hit triple digits on two consecutive days. During this extreme heat event, 911 emergency calls for medical services increased by 51%, emergency department visits increased by 12%, and hospitalizations increased by 15%.[250]

183. San Francisco's historically mild climate means it has the lowest rate of air conditioning anywhere in the country.[251] Thus, during heat waves, temperatures inside buildings are often higher than outside temperatures, and are likely to stay elevated for longer periods of time. This creates dangerous health conditions for the buildings' residents. Extreme heat events not only cause direct health impacts like dehydration, heat stroke, and heat exhaustion, but also exacerbate pre-existing or underlying health conditions such as cardiovascular conditions, respiratory illnesses, diabetes, and mental health conditions.[252]

184. Heat ranks among the deadliest of all climate hazards in California, and heat waves in cities are projected to cause two to three times more heat-related deaths by mid-century. As with all climate change impacts, the impacts from extreme heat events are and will continue to be felt disproportionately by environmental justice communities in San Francisco. Factors such as race, income, and age influence vulnerability to extreme heat. Due to historic discrimination in housing markets and urban planning, people of color are more likely to live in neighborhoods with little greenspace that experience the "urban heat island effect," such as the Bayview and the Mission. Older adults are among the most vulnerable to the health impacts of extreme heat due in large part

[249] *The Heat and Air Quality Resilience Plan* (2023), *supra* note 12, at 17.
[250] *Id.* at 16.
[251] *Id.* at 18.
[252] *Ibid.*

to chronic physical or cognitive health conditions.[253] Members of San Francisco's environmental justice communities also tend to work in occupations with increased exposure to extreme heat, such as construction and delivery industries.

185. Extreme heat and warming temperatures make trees more susceptible to disease and pathogens.[254] In San Francisco, extreme heat and warming temperatures have increased and will continue to increase the prevalence of tree diseases, leading to increased costs for tree maintenance, removal, and re-planting.

186. San Francisco's air quality is also expected to worsen as extreme heat events increase in frequency and intensity. Air quality is closely associated with public health. Exposure to pollutants increases rates of allergies, bronchitis, asthma attacks and other respiratory illnesses, heart disease and other cardiovascular illnesses, and is an environmental risk factor connected to premature birth and low birth weight, mental health conditions, and many cancers.

187. Heat accelerates the development of ground-level ozone.[255] Ground-level ozone, the main ingredient of smog, is created through a chemical reaction between sunlight, nitrogen oxide, and volatile organic compounds (VOCs).[256] Smog is a harmful air pollutant because of its effects on people and the environment. Smog is most likely to reach unhealthy levels on hot sunny days in urban environments and can be transported long distances by wind.[257]

188. Both the severity and intensity of wildfires in California are increasing as a result of climate change. California's wildfire season is beginning earlier in the year and ending later.[258] Since 2015, California has experienced 12 of the 20 largest, 7 of the 20 deadliest, and 15 of the 20

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[253] *Ibid.*

[254] CA Office of Environmental Health Hazard Assessment, *Forest Tree Mortality* (Aug. 23, 2023), https://oehha.ca.gov/climate-change/epic-2022/impacts-vegetation-and-wildlife/forest-tree-mortality; M. Valdes, *As Climate Change Progresses, Trees in Cities Struggle*, L.A. Times (Nov. 16, 2022), https://www.latimes.com/world-nation/story/2022-11-16/as-climate-change-progresses-trees-in-cities-struggle.

[255] SF.GOV, *Extreme Heat and Health* (May 17, 2023).

[256] 2020 Hazards and Climate Resilience Plan, *supra* note 226.

[257] EPA, *Ground-level Ozone Basics*, https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics.

[258] *The Heat and Air Quality Resilience Plan* (2023), *supra* note 12, at 19–20.

most destructive wildfires in the state's history.[259] Although San Francisco is less likely to have a wildfire than communities in the urban wildland interface, Plaintiffs suffer the effects of wildfire smoke from fires across the state. In 2018, for example, the smoke from the Butte County Camp Fire was funneled south and west to the San Francisco Bay Area. San Francisco's Air Quality Index was over 150, "unhealthy," for 12 consecutive days, peaking at 250.[260] Wildfire smoke events are disruptive and often force schools, businesses, and services to reduce operations or close.[261]

189. Wildfire smoke is comprised of both gaseous and hazardous pollutants, water vapor, and particulate matter that is particularly harmful if inhaled. Short-term health impacts from smoke inhalation include cough, headaches, eye and skin irritation, and aggravation of respiratory and cardiovascular illnesses, and long-term impacts include adverse birth outcomes, cognitive conditions, and asthma.[262] People experiencing homelessness and populations with pre-existing conditions are especially vulnerable to these impacts.

190. Worsening air quality and the increased frequency and severity of extreme heat events in San Francisco has caused, and will continue to cause, impacts to City-owned property and infrastructure, including SFO. For example, SFO is expected to have hotter runways, roadways, and buildings, which will result in increased cooling costs and loads and increased employee absences and discomfort.[263] To abate these impacts, SFO is completing a Smart Surfaces Study to identify alternative paving, plant cover and roof materials that can reduce SFO's heat gain and improve worker health and experience. SFO continues to plan for other resilience efforts that will mitigate vulnerabilities and improve the condition and response of SFO's critical assets.

191. Plaintiffs have incurred and will continue to incur higher energy costs due to climate change-induced extreme heat, costs related to building electrification and other upgrades and

[259] *Id.* at 19.

[260] F.K. Chow et al., *High-Resolution Smoke Forecasting for the 2018 Camp Fire in California*, 103 Bulletin of the American Meteorological Society 1531 (June 24, 2022), https://doi.org/10.1175/BAMS-D-20-0329.1.

[261] *Id.* at 20–21.

[262] *Id.* at 19.

[263] SFO Infrastructure Resilience Framework (Sept. 2022), at 21, https://www.flysfo.com/sites/default/files/2023-10/IRF%20Report%20v6-web.pdf.

retrofits to make its infrastructure more energy efficient, and costs related to installation of advanced filtration systems to protect indoor air quality from particulate matter and other harmful air pollution.

192. In May 2023, the City published its Heat and Air Quality Resilience Plan, which establishes a framework to address current local extreme heat and wildfire smoke events while preparing for future ones. The report identifies numerous adaptation strategies for San Francisco, including: (a) adapt buildings and exterior built and natural environments to reduce exposure to extreme heat and poor air quality; (b) adapt exterior built and natural environments to reduce exposure to extreme heat and poor air quality; (c) implement equitable emergency preparedness, response, and resilience actions—including respite and cooling centers—to make San Francisco more resilient to extreme heat and wildfire smoke; and (d) develop services that can predict and adapt to these climate change-related stressors.

VI. CAUSES OF ACTION

FIRST CAUSE OF ACTION

(Public Nuisance on Behalf of the People of the State of California)

(Against All Defendants)

193. The People re-allege and incorporate by reference the allegations in §§ I–V as though fully set forth herein.

194. The People of the State of California, acting by and through the San Francisco City Attorney, bring this claim seeking abatement pursuant to California public nuisance law, including section 731 of the California Code of Civil Procedure, and sections 3479, 3480, 3491, and 3494 of the California Civil Code.

195. Defendants, individually and in concert with each other, by their affirmative acts and omissions described in more detail below, have caused, created, assisted in the creation of, contributed to, and/or maintained, and continue to cause, create, assist in the creation of, contribute to, and/or maintain harmful climate change-related conditions, including sea level rise, more frequent and extreme precipitation events, coastal and inland flooding, more frequent and extreme heat events, and reduced air quality, with compounding effects in San Francisco's environmental justice

communities. These climate change-related harms are injurious to health, indecent and offensive to the senses, and obstruct the free use of property, so as to interfere with the comfortable enjoyment of life and property, and therefore constitute a nuisance.

196. Defendants, and each of them, created, caused, contributed to, and assisted in the creation of these and other climate change-related harms in San Francisco by, among other things, affirmatively and deceptively promoting the sale and use of fossil fuel products which Defendants knew or should have known would cause or exacerbate climate change and its impacts in San Francisco, including without limitation sea level rise, more frequent and extreme precipitation events, coastal and inland flooding, more frequent and extreme heat events, and reduced air quality. The affirmative misconduct also includes disseminating and funding the dissemination of information intended to mislead consumers and the public regarding the known and foreseeable risks of climate change and its consequences. It also includes engaging in other conduct to manipulate and induce the public into using fossil fuels in a way that causes climate change harms and not using or delaying the shift to renewable energy.

197. Defendants' nuisance-creating conduct included egregiously making untruthful, deceptive, and/or misleading environmental marketing claims, explicit and implied, in violation of Cal. Bus. & Prof. Code section 17580.5. The People are within the class of persons that statute seeks to protect. Defendants' misleading environmental marketing claims include, but are not limited to, deceptively marketing fossil fuel products claimed to be "low carbon," "emissions-reducing," "clean" and/or "green," or otherwise environmentally beneficial or benign when in reality those products contribute to climate change and are harmful to the health of the planet and its people; and deceptively marketing their companies and their products as contributing to solutions to climate change when in reality their investments in clean energy and alternative fuels pale in comparison to their investments in expanding fossil fuel production.

198. The climate change-related harms that Defendants created, caused, contributed to, and assisted in the creation of, constitute a substantial and unreasonable interference with and obstruction of public rights and property, including, *inter alia*, the public rights to health, safety, welfare, peace, comfort, and convenience of San Francisco residents and other citizens. These

interferences with public rights, which Defendants knew or should have known their affirmative wrongful promotion would cause or exacerbate, include without limitation:

i. Sea level rise, coastal inundation and flooding, and groundwater changes, which obstruct the free passage and use of roads and property, impair water quality in groundwater aquifers, damage critical public infrastructure, and lead to unprecedented and dangerous storm surges that can cause injury or even deaths;

ii. More frequent and extreme precipitation events, including atmospheric rivers, which cause flooding that can damage public infrastructure, obstructing the free passage and use of property;

iii. More frequent and extreme heat events, which increase the risk of injury or death from dehydration, heat stroke, heart attack, and respiratory problems; and

iv. Reduced air quality from smoke and dangerous pollutants caused by more frequent and intense wildfires across California, which exacerbates existing health conditions, causes lung damage, and increases rates of childhood asthma, respiratory and heart disease, and death, and which reduces visibility and obstructs scenic views.

199. The harms caused by Defendants' nuisance-creating conduct far outweigh the social utility of that conduct, are severe, and are greater than the People should be required to bear without compensation.

200. The climate change-related harms that Defendants created, caused, contributed to, and assisted in the creation of are present throughout San Francisco, and therefore affect a considerable number of persons in San Francisco.

201. As a direct and proximate result of Defendants' acts and omissions, the People will be required to expend significant public resources to mitigate the impacts of climate change-related harms throughout San Francisco.

202. The People's injuries and threatened injuries from each Defendant's affirmative acts or omissions are indivisible injuries. Each Defendant's past and ongoing conduct is a direct and proximate cause of, and a substantial factor in causing, the People's injuries and threatened injuries.

203. Defendants are jointly and severally liable to the People for committing a public nuisance.

204. The People seek an order of abatement requiring Defendants, and each of them jointly and severally, to abate the nuisance, including by making payments into an abatement fund in an amount to be determined at trial to address the public nuisance.[264]

SECOND CAUSE OF ACTION

(Public Nuisance on Behalf of the City and County of San Francisco)

(Against All Defendants)

205. The City re-alleges and incorporates by reference the allegations in §§ I–V as though fully set forth herein.

206. Defendants, individually and in concert with each other, by their affirmative acts and omissions described in more detail below, have caused, created, assisted in the creation of, contributed to, and/or maintained, and continue to cause, create, assist in the creation of, contribute to, and/or maintain harmful climate change-related conditions, including sea level rise, more frequent and extreme precipitation events, coastal and inland flooding, more frequent and extreme heat events, and reduced air quality, with compounding effects in San Francisco's environmental justice communities. These climate change-related harms are injurious to health, indecent and offensive to the senses, and obstruct the free use of property, so as to interfere with the comfortable enjoyment of life and property, and therefore constitute a nuisance.

207. Defendants, and each of them, created, caused, contributed to, and assisted in the creation of these and other climate change-related harms in San Francisco by, among other things, affirmatively and deceptively promoting the sale and use of fossil fuel products in San Francisco which Defendants knew or should have known would cause or exacerbate climate change and its impacts in the City, including without limitation sea level rise, more frequent and extreme precipitation events, coastal and inland flooding, more frequent and extreme heat events, and reduced air quality.

[264] The People do not seek abatement with respect to any federal land.

208. The climate change-related harms that Defendants created, caused, contributed to, and assisted in the creation of, constitute a substantial and unreasonable interference with and obstruction of public rights and property, including, *inter alia*, the public rights to health, safety, welfare, peace, comfort, and convenience of San Francisco residents and other citizens. These interferences with public rights, which Defendants knew or should have known their affirmative wrongful promotion would cause or exacerbate, include without limitation:

i. Sea level rise, coastal inundation and flooding, and groundwater changes, which obstruct the free passage and use of roads and property, impair water quality in groundwater aquifers, damage critical public infrastructure, and lead to unprecedented and dangerous storm surges that can cause injury or even deaths;

ii. More frequent and extreme precipitation events, including atmospheric rivers, which cause flooding that can damage public infrastructure, obstructing the free passage and use of property;

iii. More frequent and extreme heat events, which increase the risk of injury or death from dehydration, heat stroke, heart attack, and respiratory problems; and

iv. Reduced air quality from smoke and dangerous pollutants caused by more frequent and intense wildfires across California, which exacerbates existing health conditions, causes lung damage and increases rates of childhood asthma, respiratory and heart disease, and death, and which reduces visibility and obstructs scenic views.

209. The harms caused by Defendants' nuisance-creating conduct far outweigh the social utility of that conduct, are severe, and are greater than the City should be required to bear without compensation.

210. The climate change-related harms that Defendants created, caused, contributed to, and assisted in the creation of are present throughout San Francisco, and therefore affect a considerable number of persons in San Francisco.

211. In addition to the harms suffered by the public at large, the City has suffered special injuries different in kind. The climate change-related harms that Defendants created, caused, contributed to, and assisted in the creation of have and will continue to injure public property and

structures owned and managed by the City of San Francisco. Defendants have inflicted and continue to inflict injuries upon the City that require the City to incur extensive costs to protect public and private property, against increased sea level rise, inundation, storm surges, flooding, more frequent and extreme precipitation and heat events, and reduced air quality.

212. Defendants are jointly and severally liable to the City for committing a public nuisance.

213. The City's injuries and threatened injuries from each Defendant's affirmative acts or omissions are indivisible injuries. Each Defendant's past and ongoing conduct is a direct and proximate cause of, and a substantial factor in causing, the City's injuries and threatened injuries. As a direct and proximate result of Defendants' acts and omissions as alleged herein, the City has suffered monetary losses and damages in amounts to be proven at trial.

214. Defendants' wrongful conduct was oppressive, malicious, and fraudulent, in that their conduct was willful, intentional, and in conscious disregard for the rights of others. Defendants' conduct was so vile, base, and contemptible that it would be looked down upon and despised by reasonable people, justifying an award of punitive and exemplary damages in an amount subject to proof at trial, and justifying equitable disgorgement of all profits Defendants obtained through their unlawful and outrageous conduct.

215. The City seeks an order of abatement requiring Defendants, and each of them jointly and severally, to abate the nuisance, including by making payments into an abatement fund in an amount to be determined at trial to address the public nuisance.[265]

THIRD CAUSE OF ACTION

(Private Nuisance on Behalf of the City and County of San Francisco)

(Against All Defendants)

216. The City re-alleges and incorporates by reference the allegations in §§ I–V as though fully set forth herein.

217. The City owns, leases, controls, and/or manages extensive property, both within and outside San Francisco's physical boundaries, including property located at SFO, that has been injured

[265] The City does not seek abatement with respect to any federal land.

and will be injured by rising sea levels, more frequent and extreme precipitation and heat events, and poor air quality.

218. Defendants, and each of them, by their acts and omissions described in more detail below, have intentionally and unreasonably created a condition on the City's property, and permitted that condition to persist, which constitutes a nuisance by increasing sea level, increasing the frequency and intensity of storms, increasing the frequency and intensity of heat events, and decreasing air quality.

219. The condition created by Defendants substantially and negatively affects the City's interest in its own real property. In particular, higher sea level, increased storm frequency and intensity, increased frequency and intensity of heat events, and poor air quality are:

i. Harmful and dangerous to human health;

ii. Indecent and offensive to the senses of ordinary person;

iii. Threatening to obstruct the free use of the City's property and property owned by the City's residents and citizens, so as to interfere with the comfortable enjoyment of life and property; and

iv. Threatening to obstruct the free passage and use of navigable lakes, rivers, bays, streams, canals, basins, public parks, squares, streets, and/or highways within the City's communities.

220. The condition described above created by Defendants' conduct substantially interferes with the City's use and quiet enjoyment of its properties.

221. The City has not consented to Defendants' conduct in creating the condition that has led to sea level rise, more frequent and extreme precipitation and heat events, and poor air quality.

222. The ordinary person, and the ordinary city or county in the City's position, would be reasonably annoyed and disturbed by Defendants' conduct and the condition created thereby, because, *inter alia*, it infringes on the City's ability to provide public space to residents and visitors, and has forced the City to plan for and provide additional emergency and other public services in response to impacts from sea level rise, more frequent and extreme precipitation and heat events, and poor air quality on property owned by the City.

223. The harms caused by Defendants' nuisance-creating conduct far outweigh the social utility of that conduct, are severe, and are greater than the City should be required to bear without compensation.

224. Defendants' conduct was a direct and proximate cause of the City's injuries, and a substantial factor in the harms suffered by the City as described herein.

225. Defendants are jointly and severally liable to the City for committing a private nuisance.

226. Defendants' acts and omissions as alleged herein are indivisible causes of the City's injuries as alleged herein. Each Defendant's past and ongoing conduct is a direct and proximate cause of the City's injuries and threatened injuries. As a direct and proximate result of Defendants' acts and omissions as alleged herein, the City has suffered monetary losses and damages in amounts to be proven at trial.

227. Defendants' wrongful conduct was oppressive, malicious, and fraudulent, in that their conduct was willful, intentional, and in conscious disregard for the rights of others. Defendants' conduct was so vile, base, and contemptible that it would be looked down upon and despised by reasonable people, justifying an award of punitive and exemplary damages in an amount subject to proof at trial, and justifying equitable disgorgement of all profits Defendants obtained through their unlawful and outrageous conduct.

228. The City seeks an order of abatement requiring Defendants, and each of them jointly and severally, to abate the nuisance, including by making payments into an abatement fund in an amount to be proven at trial to address the private nuisance.[266]

FOURTH CAUSE OF ACTION

(Trespass on Behalf of the City and County of San Francisco)

(Against All Defendants)

229. The City re-alleges and incorporates by reference the allegations in §§ I–V as though fully set forth herein.

[266] The City does not seek abatement with respect to any federal land.

230. The City owns, leases, controls, and/or manages extensive property, both within and outside San Francisco's physical boundaries, including property located at SFO.

231. Defendants, and each of them, have intentionally, recklessly, or negligently caused ocean waters, flood waters, precipitation, and airborne pollutants including smog and wildfire smoke to enter the City's property, by advertising, promoting, marketing, and/or selling fossil fuel products, knowing those products in their normal operation and use or foreseeable misuse would cause global and local sea levels to rise, cause flooding and storm surges to become more frequent and more intense, cause precipitation and heat events to become more frequent and more intense, and cause worsening air quality.

232. The City did not give permission for Defendants, or any of them, to cause ocean water, flood water, precipitation, or airborne pollutants to enter its property.

233. The City has been and continues to be actually injured and continues to suffer damages as a result of Defendants and each of their having caused ocean water, flood water, precipitation, and airborne pollutants to enter its real property, by *inter alia* permanently submerging real property owned by the City, causing flooding and storm surges, extreme precipitation, and airborne pollution, which have invaded and threaten to invade real property owned by the City and have rendered it unusable.

234. Defendants' conduct was a direct and proximate cause of the City's injuries, and a substantial factor in the harms suffered by the City as described herein.

235. Defendants' and each Defendant's decades-long campaign of deception, which had the purpose and effect of inflating and sustaining the market for fossil fuels, drove up greenhouse gas emissions, accelerated global warming, delayed the energy economy's transition to a lower-carbon future, and brought about devastating climate change impacts to San Francisco, was a substantial factor in causing the injuries and damages to the City's public and private real property. Defendants' acts and omissions as alleged herein are indivisible causes of the City's injuries and damage as alleged herein. Each Defendant's past and ongoing conduct is a direct and proximate cause of the City's injuries and threatened injuries.

236. Defendants are jointly and severally liable to the City for trespassing.

237. As a direct and proximate result of Defendants' acts and omissions as alleged herein, the City has suffered monetary losses and damages in amounts to be proven at trial.

238. Defendants' wrongful conduct was oppressive, malicious, and fraudulent, in that their conduct was willful, intentional, and in conscious disregard for the rights of others. Defendants' conduct was so vile, base, and contemptible that it would be looked down upon and despised by reasonable people, justifying an award of punitive and exemplary damages in an amount subject to proof at trial, and justifying equitable disgorgement of all profits Defendants obtained through their unlawful and outrageous conduct.

239. The City seeks an order of abatement requiring Defendants, and each of them jointly and severally, to abate the trespass, including by making payments into an abatement fund in an amount to be proven at trial.

FIFTH CAUSE OF ACTION

(Strict Products Liability—Failure to Warn

on Behalf of the City and County of San Francisco)

(Against All Defendants)

240. The City re-alleges and incorporates by reference the allegations in §§ I–V as though fully set forth herein.

241. At all relevant times Defendants, and each of them, were engaged in the business of advertising, promoting, and/or selling fossil fuel products and their derivatives. Defendants placed these fossil fuel products into the stream of commerce.

242. Defendants, and each of them, manufactured, heavily marketed, promoted, advertised, and/or sold fossil fuel products and their derivatives, which were sold or used by their respective affiliates and subsidiaries. Defendants received direct financial benefit from the sale of their fossil fuel products, and the products of their affiliates and subsidiaries. Defendants' roles as promoters and marketers were integral to their respective businesses and a necessary factor in bringing fossil fuel products and their derivatives to the consumer market, such that Defendants had control over, and a substantial ability to influence, the manufacturing and distribution processes of their affiliates and subsidiaries.

243. As manufacturers, advertisers, promoters, and/or sellers of fossil fuel products and their derivatives, Defendants had a duty to warn consumers, the public, and the City of reasonably foreseeable environmental and health risks posed by those products and derivatives.

244. Throughout the times at issue, Defendants individually and collectively knew or should have known—based on information passed to them from their internal research divisions and affiliates, trade associations and entities, and/or from the international scientific community—that fossil fuel products and their derivatives, whether used as intended or used in a foreseeable manner, release greenhouse gases into the atmosphere, causing global warming, sea level rise, more frequent and extreme precipitation events and flooding, more frequent and severe heat waves and extreme temperatures, reduced air quality, and the consequences and injuries associated with those physical and environmental changes, which result in risks to human health and safety, damage to property and infrastructure, and loss of use of City services in San Francisco.

245. Throughout the times at issue and continuing today, Defendants' fossil fuel products and their derivatives were used, distributed, and sold in a manner in which they were reasonably foreseeably intended to be used, distributed, and sold, including but not limited to being combusted for energy, combusted to power automobiles, refined into petrochemicals, and refined and/or incorporated into petrochemical products including, but not limited to, fuels and plastics.

246. Defendants and their affiliates and subsidiaries knew, or should have known, that these fossil fuel products and their derivatives would be used by the City, its residents, and others within the City's limits, amongst others, in the manner reasonably foreseeably intended.

247. Defendants knew, or should have known, based on information passed to them from their internal research divisions and affiliates, from trade associations and entities, and/or from the international scientific community, that the climate change-related harms described herein rendered their fossil fuel products and their derivatives dangerous, or likely to be dangerous, when used in the manner reasonably foreseeably intended.

248. The fossil fuel products and derivatives that Defendants refined, formulated, designed, manufactured, merchandised, advertised, promoted, and/or sold—whether used as

intended or used in a reasonably foreseeable manner—were not reasonably safe at the time they left Defendants' control because they lacked adequate warnings and instructions.

249. The fossil fuel products and their derivatives reached consumers and the environment substantially unchanged from that in which they left Defendants' control.

250. Without adequate warnings, Defendants' fossil fuel products and their derivatives were unsafe to an extent beyond that which would be contemplated by an ordinary person.

251. Defendants knew that by failing to warn consumers, the City, and the public of the risks posed by fossil fuels, their products would be purchased, transported, stored, handled, and used without users and consumers being aware of the hazards fossil fuels pose to human health and the environment.

252. At the time of manufacture, merchandising, advertising, promotion, or sale, Defendants could have provided warnings or instructions regarding the full and complete risks fossil fuel products and their derivatives posed because they knew, and/or should have known, of the unreasonable risks of harm associated with the use of these products, as described herein.

253. Despite Defendants' superior and unequal knowledge of the risks posed by fossil fuel products and their derivatives, Defendants failed to adequately warn consumers, the City, and the public of the known and foreseeable risks of climate change, climate change-related harms as described herein, and other dangers that would inevitably follow from the intended or reasonably foreseeable use of these products.

254. Not only did Defendants fail to adequately warn, Defendants represented, asserted, claimed, and warranted that their fossil fuel products and derivatives were safe for their intended and foreseeable uses.

255. Any warnings Defendants may have issued as to the risks of their fossil fuel products and their derivatives were rendered ineffective and inadequate by Defendants' false and misleading public relations campaigns and statements about fossil fuel products, and their decades-long efforts to conceal and misrepresent the dangers that follow from the intended or reasonably foreseeable use of such products.

256. Defendants individually and in concert widely disseminated misleading marketing materials, attempted to refute scientific knowledge generally accepted at the time concerning climate change, advanced and promoted pseudo-scientific theories of their own, and developed public relations materials that prevented reasonable consumers from recognizing or discovering the latent risk that Defendants' fossil fuel products and their derivatives would cause grave climate changes, undermining and rendering ineffective any warnings that Defendants may have also disseminated.

257. Accordingly, throughout the times at issue, the ordinary consumer would not recognize that the use of fossil fuel products and their derivatives causes global and localized changes in climate, and consequent injuries to San Francisco and its communities, as described herein.

258. Defendants breached their duty to warn by unreasonably failing to provide the City, the public, consumers, and users of fossil fuel products and their derivatives with warnings regarding the potential and/or actual threat to human health and the environment caused by pollution released from the manufacturing and consumption of fossil fuels, despite Defendants' vast amounts of knowledge and research demonstrating fossil fuels and their derivatives presented threats to human health and the environment.

259. Had Defendants provided adequate warnings and not waged a deceptive campaign against climate science, their fossil fuel products and their derivatives would not have had widespread acceptance in the marketplace, and alternatives to fossil fuel products could have been developed faster, investment in fossil fuel alternatives would be greater, and/or fossil fuel alternatives would be used in greater amounts.

260. Moreover, had Defendants provided adequate warnings about the adverse impacts to public health and the environment that results from the intended and reasonably foreseeable use of fossil fuel products and their derivatives, the City and its residents would have taken measures to decrease fossil fuel dependency in order to avoid or lessen the climate change-related harms described herein and property damage that would inevitably follow.

261. As a direct and proximate result of Defendants' failure to warn about the unreasonably dangerous conditions of their fossil fuel products and derivatives, the City has incurred and will

continue to incur costs and damages related to City property, City infrastructure, public safety, and public health.

262. As a result of Defendants' failure to warn about the unreasonably dangerous conditions of their fossil fuel products and their derivatives, Defendants are strictly liable to the City.

263. Defendants' wrongful conduct was oppressive, malicious, and fraudulent, in that their conduct was willful, intentional, and in conscious disregard for the rights of others. Defendants' conduct was so vile, base, and contemptible that it would be looked down upon and despised by reasonable people, justifying an award of punitive and exemplary damages, in an amount subject to proof, and justifying equitable disgorgement of all profits Defendants obtained through their unlawful and outrageous conduct.

264. Defendants' acts and omissions as alleged herein are indivisible causes of the City's injuries as alleged herein. Each Defendant's past and ongoing conduct is a direct and proximate cause of the City's injuries and threatened injuries, and a substantial factor in causing the City's injuries described herein.

265. As a direct and proximate result of Defendants' acts and omissions as alleged herein, the City and its residents have suffered monetary losses and damages in amounts to be proven at trial.

SIXTH CAUSE OF ACTION

(Negligent Products Liability—Failure to Warn

on Behalf of the City and County of San Francisco)

(Against All Defendants)

266. The City re-alleges and incorporates by reference the allegations in §§ I–V as though fully set forth herein.

267. At all relevant times, Defendants and their affiliates and subsidiaries were engaged in the business of manufacturing, advertising, promoting, and/or selling fossil fuel products and their derivatives.

268. Defendants, and each of them, manufactured, heavily marketed, promoted, advertised, and/or sold fossil fuel products and their derivatives, which were sold or used by their

respective affiliates and subsidiaries. Defendants received direct financial benefit from the sale of their fossil fuel products, and the products of their affiliates and subsidiaries. Defendants' roles as promoters and marketers were integral to their respective businesses and a necessary factor in bringing fossil fuel products and their derivatives to the consumer market, such that Defendants had control over, and a substantial ability to influence, the manufacturing and distribution processes of their affiliates and subsidiaries.

269. As manufacturers, advertisers, promoters, and/or sellers of fossil fuel products and their derivatives, Defendants had a duty to warn the public, consumers, and users of such products, including the City, of the reasonably foreseeable environmental and health risks posed by those products and derivatives.

270. Throughout the times at issue, Defendants individually and collectively knew or should have known that fossil fuel products, whether used as intended or in a foreseeable manner, release greenhouse gases into the atmosphere, inevitably causing, among other things, global warming, sea level rise, more frequent and extreme precipitation and heat events, reduced air quality, and the associated consequences of those physical and environmental changes.

271. Throughout the times at issue, Defendants individually and collectively knew or should have known—based on information passed to them from their internal research divisions and affiliates, trade associations and entities, and/or from the international scientific community—that fossil fuel products and their derivatives, whether used as intended or used in a foreseeable manner, release greenhouse gases into the atmosphere, causing global warming, sea level rise, more frequent and extreme precipitation events and flooding, more frequent and severe heat waves and extreme temperatures, reduced air quality, and the consequences and injuries associated with those physical and environmental changes, which result in risks to human health and safety, damage to property and infrastructure, and loss of use of City services in San Francisco.

272. Throughout the times at issue and continuing today, Defendants' fossil fuel products and their derivatives were used, distributed, and sold in a manner in which they were reasonably foreseeably intended to be used, distributed, and sold, including but not limited to being combusted

for energy, combusted to power automobiles, refined into petrochemicals, and refined and/or incorporated into petrochemical products including, but not limited to, fuels and plastics.

273. Defendants and their affiliates and subsidiaries knew, or should have known, that these fossil fuel products and their derivatives would be used by the City, its residents, and others within the City's limits, amongst others, in the manner reasonably foreseeably intended.

274. Defendants knew, or should have known, based on information passed to them from their internal research divisions and affiliates, from trade associations and entities, and/or from the international scientific community, that the climate change-related harms described herein rendered their fossil fuel products and their derivatives dangerous, or likely to be dangerous, when used in an intended or reasonably foreseeably manner.

275. Defendants knew that by failing to warn the City, the public, consumers, and users of fossil fuels and their derivatives of the risks posed by fossil fuels, their products would be purchased, transported, stored, handled, and used without users and consumers being aware of the hazards fossil fuels pose to human health and the environment.

276. At the time of manufacture, merchandising, advertising, promotion, or sale, Defendants could have provided warnings or instructions regarding the full and complete risks fossil fuel products and their derivatives posed because they knew, and/or should have known, of the unreasonable risks of harm associated with the use of these products, as described herein.

277. Given the grave dangers caused by normal or foreseeable use of fossil fuel products as described herein, a reasonable manufacturer, advertiser, promoter, and/or seller of fossil fuel products and their derivatives, would have warned of those known and inevitable climate effects.

278. Despite Defendants' superior and unequal knowledge of the risks posed by fossil fuel products and their derivatives, Defendants failed to adequately warn consumers, the City, and the general public of the known and foreseeable risks of climate change, climate change-related harms including sea level rise, more frequent and intense precipitation and heat events, reduced air quality, and other dangers that would inevitably follow from the intended or reasonably foreseeable use of these products.

279. Not only did Defendants fail to adequately warn consumers, Defendants represented, asserted, claimed, and warranted that their fossil fuel products and derivatives were safe for their intended and foreseeable uses.

280. Any warnings Defendants may have issued as to the risks of their fossil fuel products and their derivatives were rendered ineffective and inadequate by Defendants' false and misleading public relations campaigns and statements about fossil fuel products and their derivatives, and their decades-long efforts to conceal and misrepresent the dangers that follow from the intended or reasonably foreseeable use of such products.

281. Defendants individually and in concert widely disseminated misleading marketing materials, attempted to refute scientific knowledge generally accepted at the time concerning climate change, advanced and promoted pseudo-scientific theories of their own, and developed public relations materials that prevented reasonable consumers from recognizing or discovering the latent risk that Defendants' fossil fuel products and their derivatives would cause grave climate changes, undermining and rendering ineffective any warnings that Defendants may have also disseminated.

282. Accordingly, throughout the times at issue, the ordinary consumer would not recognize that the use of fossil fuel products and their derivatives causes global and localized changes in climate, and consequent injuries to San Francisco and its communities, as described herein.

283. Defendants breached their duty to warn by unreasonably failing to provide the City, the public, consumers, and users of fossil fuel products and their derivatives with warnings regarding the potential and/or actual threat to human health and the environment caused by pollution released from the manufacturing and consumption of fossil fuels, despite Defendants' extensive knowledge and research demonstrating fossil fuels and their derivatives presented threats to human health and the environment.

284. Defendants further breached their duty of care by making untruthful, deceptive, and/or misleading environmental marketing claims, explicit and implied, in violation of Cal. Bus. & Prof. Code section17580.5. By violating the greenwashing statute, Defendants are presumed to have breached their duty per se under Evidence Code section 669.

i. Defendants violated section 17580.5 with such conduct including deceptively marketing fossil fuel products claimed to be "low carbon," "emissions-reducing," "clean" and/or "green," or otherwise environmentally beneficial or benign when in reality those products contribute to climate change and are harmful to the health of the planet and its people; and deceptively marketing their companies and their products as contributing to solutions to climate change when in reality their investments in clean energy and alternative fuels pale in comparison to their investments in expanding fossil fuel production.

ii. This conduct was the proximate cause of Plaintiffs' climate change-related injuries.

iii. Plaintiffs' injuries resulted from an occurrence of the nature which the greenwashing statute was designed to prevent.

iv. Plaintiffs are among the class of persons for whose protection the greenwashing statute was adopted.

285. Had Defendants provided adequate warnings and not waged a deceptive campaign against climate science, their fossil fuel products and their derivatives would not have earned widespread acceptance in the marketplace.

286. Had Defendants provided adequate warnings and not waged a deceptive campaign against climate science, fossil fuel alternatives could have been developed faster, investment in fossil fuel alternatives would be greater, and/or fossil fuel alternatives would be used in greater amounts.

287. Moreover, had Defendants provided adequate warnings about the adverse impacts to public health and the environment that results from the intended and reasonably foreseeable use of fossil fuel products and their derivatives, the City and its residents would have taken measures to decrease fossil fuel dependency in order to avoid or lessen the climate change-related harms described herein and property damage that would inevitably follow.

288. As a direct and proximate result of Defendants' negligent failure to warn about the unreasonably dangerous conditions of their fossil fuel products and derivatives, the City has incurred and will continue to incur costs and damages related to City property, City infrastructure, public safety, and public health.

289. Defendants' wrongful conduct was oppressive, malicious, and fraudulent, in that their conduct was willful, intentional, and in conscious disregard for the rights of others. Defendants' conduct was so vile, base, and contemptible that it would be looked down upon and despised by reasonable people, justifying an award of punitive and exemplary damages, in an amount subject to proof.

290. Defendants' acts and omissions as alleged herein are indivisible causes and were a substantial factor in causing the City's injuries as alleged herein. Each Defendant's past and ongoing conduct is a direct and proximate cause of the City's injuries and threatened injuries.

291. Defendants are jointly and severally liable to the City for their failures to warn.

292. As a direct and proximate result of Defendants' acts and omissions as alleged herein, the City and its residents have suffered monetary losses and damages in amounts to be proven at trial.

SEVENTH CAUSE OF ACTION

(Negligence on Behalf of the City and County of San Francisco)

(Against All Defendants)

293. The City re-alleges and incorporates by reference the allegations in §§ I–V as though fully set forth herein.

294. For decades, Defendants possessed knowledge—based on information passed to them from their internal research divisions and affiliates, from trade associations and industry groups, and from the international scientific community—that fossil fuels are the primary cause of climate change and that, if sustained, climate change would cause climate change-related harms, including but not limited to: sea level rise, more frequent and extreme precipitation events, increased frequency and severity of heat waves and extreme temperatures, reduced air quality, and other adverse environmental changes, and the associated consequences of those physical and environmental changes in San Francisco and elsewhere, with compounding effects in environmental justice communities. Defendants possessed knowledge that these climate change-related harms would result in risks to human health and safety, damage to property and infrastructure, and loss of use of City services in the City.

295. Given the scientific evidence available to and conducted by Defendants, as referenced herein, such injury was likely and reasonably foreseeable.

296. Under California law, including Civil Code section 1714, each Defendant had a duty to the City and its residents to exercise reasonable care in the marketing, promoting, sale, and/or labeling of their fossil fuel products and to act reasonably for the protection of the City and its residents to avoid inflicting the injuries described herein. All Defendants had a duty to exercise reasonable care in the production and dissemination of information regarding the climate impacts of fossil fuel products to users of those products and to the public.

297. Defendants had superior knowledge of the risk posed by fossil fuel products at all times relevant to this Complaint.

298. Defendants breached their duty of care when they advertised, promoted, and/or sold fossil fuel products and their derivatives, while failing to include warnings of the risk of harm associated with fossil fuel products and their derivatives, in a manner that they knew or should have known would result in injury to human health and safety, damage to City property and infrastructure, loss of use of City services, and other damages to the City.

299. Defendants further breached their duty of care by waging a decades-long deceptive marketing and public relations campaign to discredit climate science.

300. Any warnings provided by Defendants were rendered ineffective by the years-long deceptive marketing practices and public relations campaign which promulgated false and misleading statements, casted doubt on the consensus of climate scientists, and advanced pseudo-scientific theories.

301. Defendants individually and in concert widely disseminated marketing materials, refuted the scientific knowledge generally accepted at the time, advanced and promoted pseudo-scientific theories of their own, and developed public relations materials that prevented reasonable consumers from recognizing or discovering the latent risk that fossil fuel products and derivatives would cause grave climate changes, undermining and rendering ineffective any warnings that Defendants may have also disseminated.

302. A company acting with reasonable or ordinary care would not engage in a decades-long deceptive marketing and public relations campaign to promulgate such false and misleading statements, would not manufacture or distribute fossil fuel products and their derivatives without warning, would warn of these products' hazardous properties, and/or would take steps to enhance the safety and/or reduce the risk of the products.

303. As a direct and proximate result of Defendants' negligence, the City has incurred and will continue to incur costs and damages related to City property, City infrastructure, public safety, and public health.

304. Defendants' conduct was willful, intentional, and in conscious disregard for the rights of others. Defendants' conduct was so vile, base, and contemptible that it would be looked down upon and despised by reasonable people, justifying an award of punitive and exemplary damages in an amount subject to proof at trial, and justifying equitable disgorgement of all profits Defendants obtained through their unlawful and outrageous conduct.

305. The City's injuries and threatened injuries from each Defendant's affirmative acts or omissions are indivisible injuries. Each Defendant's past and ongoing conduct is a direct and proximate cause of the City's injuries and threatened injuries, and a substantial factor in causing the harms alleged herein.

306. Defendants are jointly and severally liable to the City for their negligence.

307. As a direct and proximate result of Defendants' acts and omissions as alleged herein, the City and its residents have suffered monetary losses and damages in amounts to be proven at trial.

VII. RELIEF REQUESTED

WHEREFORE, Plaintiffs pray for judgment and an order against each Defendant, jointly and severally, as follows:

1. Finding Defendants jointly and severally liable for causing, creating, assisting in the creation of, contributing to, and/or maintaining a public nuisance;

2. Equitable relief to abate the nuisances complained of herein;

3. Ordering an abatement fund remedy to be paid for by Defendants to provide for infrastructure in San Francisco necessary for San Francisco to abate the nuisances complained of herein;

4. Ordering compensatory damages in an amount according to proof;

5. Ordering punitive damages;

6. Ordering disgorgement of profits;

7. Awarding attorneys' fees as permitted by law;

8. Awarding costs and expenses as permitted by law;

9. Awarding pre- and post-judgment interest as permitted by law; and

10. Awarding such other relief as this Court deems just and proper.

VIII. JURY DEMAND

Plaintiff the City and County of San Francisco demands a jury trial on all issues so triable.

Dated: June 10, 2024

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